Living Knowledge

■ International Journal of Community Based Research

Re-imagining Research Relationships

■ 5th Living Knowledge Conference

■ Green Summer in Freiburg

■ Learning from Mentoring Relationships

■ A new infrastructure model to build capacity in Socio-Health Research

■ Idea generation between Scientists and Agricultural Producers

Living Knowledge
The International Science Shop Network

Contents

Editorial

Over the past 10 years Science Shops and Community-Based Research have found their place on the agenda of science policy-making - although theory here often still lags behind experiences and practice. Now focusing on innovation and guiding research it is required to re-imagine research relationships and see how knowledge co-creation can be advanced and how civil society can fully participate. There is an ongoing interest in and attention given to the participation of citizens in community-based research, in science-based policy processes and decision-making procedures. Consequently as a next step citizens and their organisations have to engage with research as equal partners and providers of knowledge and expertise. But how?

In 2007 the European Research Advisory Board advised researchers to take "societal questions and concerns more into account and to integrate engagement with societal actors into the university curriculum." It also recommended to develop further mechanisms for societal actors to improve their research capacities, to encourage structures for partnerships between researchers and societal actors in research dialogue and to integrate societal actors into the various stages of research.

So here we are with the 5th Living Knowledge Conference: a unique opportunity to exchange with some of the key thinkers and practitioners both from civil society partners and the academic/research community in the area of community based research, university/community partnerships and Science Shops. Conference presentations reflect the large variety of experiences from across Europe and worldwide proving the innovative power and the scientific value of these initiatives. The 5th Living Knowledge Conference will also be a platform to exchange and discuss findings and results from the first half of the PERARES project, an EC funded 4-years project to strengthen public engagement in research (PER).

For those who will not be able to attend we offer live streams to follow the plenary presentations online. Presentations and full papers will be available for downloads. So stay tuned, check the the Living Knowledge and the Conference Websites regularly and follow us on the Living Knowledge Discussion list.

Looking forward to welcoming you in Bonn.
Yours sincerely,
Norbert Steinhaus

BioSense - New Science Shop in Portugal

End of October 2011 opened the first full running science shop in Portugal. The Bio-Sense Science Shop in Lisbon is being built under the project "Science engaging society: life sciences, social sciences and publics" funded by the Portuguese Foundation for Science and Technology. The Science Shop involves two Portuguese universities through the co-operation of the Institute for Molecular and Cell Biology of the University of Porto and the Centre for Social Studies of the University of Coimbra.

The objective of this initiative is to develop action research and collaborative projects at the intersection of the social sciences, life sciences, health and environment, aiming the production of knowledge that contributes to solving the problems identified by the civil society.

Henk Mulder, of the science & society group at University of Groningen (The Netherlands), member of the Living Knowledge Network and coordinator of the European project PERARES, was invited to the opening of the BioSense Science Shop to speak about the science shops experience in Europe. During the talk he stressed the importance of the involvement of the academic institutions in the promotion of science-society dialogues and collaborations and of the interfaces between research and society as catalysts for joint knowledge creation and student learning with civil society.

Information and contact: www.biosense.org.pt, biosense@ces.uc.pt.

Recruiting and Engaging Low-Income Populations from a Service Provider and Researcher Perspective

Laurie Schnirer, Ph.D. & Holly Stack-Cutler, Ph.D. Candidate

Engagement is a fundamental challenge among community program planners, policy makers, and researchers who work with low-income populations – connecting with an individual or family in order for them to participate in a program or research project. Researchers from the Community-University Partnership for the Study of Children, Youth, and Families (CUP) from the University of Alberta, Canada, surveyed 247 service providers and 65 researchers to document (a) methods of recruitment, (b) assessment of what works and what does not work, (c) barriers, (d) resources needed for success, and (e) retention strategies. The diversity of families and individuals, as well as the varying definitions of what it means to be low-income, makes it essential for recruiters to invest time, resources, and strategies into the best ways to connect with low-income families.

For the full report, including a discussion on recruitment, use of incentives, challenges, as well as retention and communication strategies, please visit: www.cup.ualberta.ca/resources/publications/

Help them to be heard

Participatory research in a Roma community in Hungary

The participatory research project set up in the PERARES framework in Hungary is getting into action this spring. The research started in 2011 is aiming to explore human rights in the local context of a segregate in Szeged, a Southern-Hungarian city. In the first months of the project interviews and discussion groups were organized inviting those who are actively engaged in the work with the Roma community. After months of getting information on the current situation of this marginalized group, the research group managed to get direct contact and access to the people of the community. We initiated discussions, meetings in the segregate with the support of our local helpers. The idea of a possible afternoon school for helping Roma children has been raised by the locals with more and more emphasis. While the implementation of a possible afternoon school was in the focus of our later discussions, many other aspects of their lives (work, accommodation, social segregation) came to light. The lack of advocacy and the ignorance (or even malevolent attitude) towards them leaves this community in a no-man's land regarding human rights. Need for getting them heard by the city (or at least the decision makers of Szeged) became apparent. As a result of this bottom-up initiative the research group is now planning to organize a forum and a roundtable discussion on the research results and advocacy for the main stakeholders in the city during the spring. This event will get the marginalized and the privileged together with the aim to foster interactive communication between them.

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L`Echop à Sciences, Grenoble, France

With the start of the new academic year 2011, ADReCA (Association pour le Developpement d'une Recherche Citoyenne et Active) has officially launched its Science Shop in Grenoble, France, called 'L'Echop à Sciences'. A new website online , which will allow NGOs, scientists and students to interact. During the past five years the support of Living Knowledge and PERARES has been essential to enable this project to be realized. The French partner is the Fondation Science Citoyenne (FSC) and there is a similar project in Lyon. Since March 2010 the ADReCA employs 2 staff, who are building a network of contacts with NGOs and scientists. ADReCA, ran a successful two-day Permanent Dialogue workshop with 30 members of the NGO and scientific community. The conclusions were clear: NGO's need scientific expertise and the scientific community is willing to work with NGOs but time and resources are limited for such projects.

Information: www.echop-a-sciences.org/

Old meets New at 800 year old Chapel

Often considered the oldest surviving building in Cambridge, the Leper Chapel has a long history that dates back to when it was known as the Chapel of St. Mary Magdalene and was at the centre of the Stourbridge Fair, the largest medieval fair in Europe. In its recent history, the chapel has been owned and lovingly maintained by Cambridge Past, Present and Future. The challenge of providing facilities for the community and heating led to a project via the University of Cambridge's Community Knowledge Exchange to understand the possibility of using micro-generation of renewable energy on-site, in such a way that would be acceptable, given the constraints of the historic Grade 1 listed building. Spyridon Papavasileiou, an MPhil student at the Department of Architecture, devised a tool, which he named VisEnR, to correlate renewable energy yield to the visual impact on historic buildings. Using this tool, he investigated various methods of micro-generation, including photovoltaic cells, wind power and ground source heat pumps.

'I found it very motivating that my dissertation was a real-life project, with utility and purpose, addressing genuine needs and serving a community', explained Spyridon. In addition, in response to ideas that the Friends of the Leper Chapel and Cambridge Past, Present and Future have been thinking about for some time, Spyridon also outlined a plan for a potential future additional building that could provide facilities to enable greater community use of the building while also providing a site for energy generation through a combination of methods.
The Cambridge Community Knowledge Exchange has received support from the European Community's Seventh Framework: Science and Society programme through the PER-ARES project.
www.cam.ac.uk/research/news/old-meets-new-at-800-year-old-leper-chapel/

Global Alliance on Community-Based Research

The UNESCO created a Chair in Community Based Research and Social Responsibility in Higher Education as part of the UNESCO Chairs Programme. The Chair is to be jointly directed by the University of Victoria and PRIA with Budd Hall and Rajesh Tandon named as the Co-Directors. This is the first such Chair to be created out of a partnership between a university and an NGO and between a Northern and Southern partner. While there are some formalities still to be worked out, work has begun to develop an action plan and identify additional partners.
For more information see http://ring.uvic.ca/news/public-administration-home-new-unesco-chair

German Nature Protection Award for Science Shop Bonn

Science Shop Bonn wins the first German Nature Protection Award with the submitted project "Tatort Wald – change of perspectives through simulations". Essence of the project draft is the development and execution of half-day simulations,

with which youths slip into the roles of different interest groups preparing fictional citizen meetings to negotiate compromises. The goal of the project is to make young people in a playful way familiar with the conflicts of interest in the use of forest resources. The award will raise social awareness of the nature and motivate especially young people for a conservation commitment.
More details: www.wilabonn.de/index_3694.htm

Resource guides for community-based clinics

In the United States, grant makers are increasingly emphasizing community-based participatory research (CBPR). Community-based clinics appear to be ideal partners for academics and researchers. However, clinics - especially those serving historically disenfranchised populations - may be wary of engaging in such partnerships and not informed of their rights and responsibilities. The urban American Indian and Alaska Native (AI/AN) community is an often overlooked, small population yet participation in research is vital to inform resource allocation, program design and understanding of health status and disparities. A primary resource for urban AI/ANs are Urban Indian Health Organizations (UIHO), which are private, non-profit, corporations that serve AI/AN people in select cities with a range of health and social services, from outreach and referral to full ambulatory care. Funded in part under Title V of the US Indian Health Care Improvement Act, UIHO are located in 19 states serving approximately 100 U.S. counties, in which over 1.2 million AI/ANs reside. UIHO provide traditional health care services, cultural activities and a culturally appropriate place for urban AI/ANs to receive health care. Funded by the US Office of Minority Health, the Seattle Indian Health Board's Urban Indian Health Institute's Health Equity Project has developed a number of resource guides to support participation in strategic partnerships, including CBPR, and build capacity at UIHO and other community-based clinics. By increasing

knowledge of the principles of equitable collaboration as well as practical considerations for formalizing partnerships, we hope to empower community providers to engage fully in CBPR. These resource guides can also be used by CBPR practitioners to identify issues specific to working with indigenous communities.
Visit the Health Equity project website at www.uihi.org/projects/health-equity/ to download partnership resource guides and learn more about the project. Contact Julie Loughran at juliel@uihi.org.

Re-imagining Research Relationships – Co-creating Knowledge in a Democratic Society

by Norbert Steinhaus, Science Shop Bonn, Germany

Universities and civil society actors engaging in service learning and community based research will introduce themselves on the 5th International Living Knowledge Conference
10th-12th May 2012 in Bonn, Germany.

In the interplay between science and society communication plays a decisive role. Passing on scientific findings to society in an understandable form has to be done by science in a sustainable manner, but society groups also need to be listened to by scientists as regards their problems, requirements, and fears. Communication must not be a one way street.
And it isn't. In the current PERARES Project (Public Engagement with Research and Research Engagement with Society) 25 Science Shops, research institutions and civil society groups from 17 countries have come together since 1st May 2010 in order to improve the structure of public participation in research in a four-year project.

The Conference

Current experiences with regard to structuring equal partnerships between civil society and science, international networking and the exchanges between activists from all areas of engagement between universities and society - from service learning to community based research - are on the agenda of the Living Knowledge Conferences in Europe every two years. In 2012 the venue for the 5th International Conference of this series - now for the first time in Germany - will be Bonn. It is entitled "Re-imagining Research Relationships - Co-creating Knowledge in a Democratic Society" (in German: "Gemeinsam Wissen schaffen - Zivilgesellschaft und Wissenschaft als gleichberechtigte Partner"), sponsored via the PERARES Project and supported financially by the Foundation for International Dialogue of the Bonn Savings Bank. Bonn Science Shop as its host will organize the conference from 8th-12th May 2012 at the Gustav Stresemann Institute, Bonn, for more than 200 delegates from more than 25 countries. Amongst them will be students, academics, university lecturers, teachers, colleagues from Science Shops and similar institutions, representatives of civil society groups, staff from universities and academic institutions, scientists and political decision-makers.
The Bonn conference offers a platform to actors from national and international institutions, universities, projects and networks for the collation and exchange of different approaches and experiences and for working out strategies for further development.
The five-day Living Knowledge Conference can be divided into two parts. At the beginning of the Conference (8th/9th May) the delegates are offered two days' training (Summer School). The Summer School's focus is on passing on the concept and manner of working of Science Shops and comparable institutions concerned with 'Community Based Research'.
The main part of the Conference is from 10th-12th May 2012. During that time there will be talks, panel discussions and workshops concerning the challenges encountered with regard to cooperation between research and civil society groups. Reports of practical experience and project presentations from service learning to community based research will show how community groups and students can learn and carry out research together.
Many actors from institutions - on a national, European and global level - are already involved in some form of "Public Engagement in Research". In the sector of university education the term "knowledge transfer" generally relates to links between universities and industry; structurally, such transfer set-ups can be found in the respective research and company departments. Although this activity concentrates on a different part of society than that normally understood by the term 'civil society', it is interesting to see where the two worlds can meet and where networks of special interest representatives can work together on civil society questions - and to see also where we can learn from the respective different approaches. The development of partnerships - also (and especially) international partnerships - is therefore an opportunity which is offered by taking part in the Living Knowledge Conference. A detailed description of the conference subjects, the extensive conference programme and other useful information can be found under **www.livingknowledge.org/conference.**

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Participation-oriented Science: Theory lags behind Practice
Interview with Norbert Steinhaus about the 5th Living Knowledge Conference

LK: Mr. Steinhaus, as host of this year's Living Knowledge Conference you are expecting many international guests. Is there a regional focus or has the vision of a dialogue between science and society by now achieved worldwide acceptance?

N. Steinhaus: The concept of Science Shops, of community-based dialogue as well as independent and participation-oriented research, has by now grown greatly in size and influence and become visible worldwide: In 7 European countries (Germany included), Australia, Israel, South Korea and Malaysia new Science Shops have sprung up. US-scientists have formed a Community Based Research Network (CRN). And on a global level the Living Knowledge Network, a grouping of Science Shops and other institutions working on a similar basis worldwide, has joined together with a large number of other groups and networks of community-based research, and with GACER, the Global Alliance on Community Engaged Research, has created a platform for global dialogue.

LK: Participation and science transfer are big words. Do they remain an abstract ideal or are actual projects and initiatives implemented?

N. St.: Over the last few years participative formats have gained in importance internationally and created many opportunities for dialogue-oriented science: scientists, students, and citizens can discuss socially relevant subjects and questions together and work out problem solutions. Scientists bring their factual knowledge and expertise to the table, citizens their questions and problems, but also their views, expectations, value orientation, and their specific state of knowledge.

I think that the presentations and workshops of the coming Living Knowledge Conference here in Bonn - but also the documentation of earlier conferences - prove that theory and big words do indeed lag behind the practice and the actual projects.

LK: The basic idea of a dialogue between citizens and science is - after all - not necessarily a German invention. Do we have to catch up here?

N. St.: Yes, indeed. Perhaps not particularly with regard to dialogue, but certainly with regard to participation-oriented science. Until now, Germany's universities did not seem to have room for this type of social engagement, certainly not during periods of school-like Bachelor and Masters degree courses, and whilst the public sector does not consciously promote and demand such an opening at the universities. In the meantime, though, even the universities are beginning to move. In the competition "More than Research and Teaching" (in German: 'Mehr als Forschung und Lehre') in early 2011 the Mercator Foundation and the Stifterverband gave awards to six universities and their concepts for social engagement. Two of the award-winning universities, Essen-Duisburg and Friedrichshafen, will present at the Living Knowledge Conference. In total, 78 universities had taken part in the competition.

The current expert opinion by the German Advisory Council on Global Change also states explicitly that social participation in the formulation of research questions, in the research processes as well as in the discussions of results constitutes success factors of central importance for the transformation to a sustainable, climate-compatible society. Over and above this, transformation-relevant education/learning geared to participation is indispensable for society's active participation in the transformation process.

There is also some movement on the political level. The Baden-Württemberg Science Minister, Theresia Bauer, stressed that Baden-Württemberg's science policy aimed at changes in research, teaching, and administration of the institutions, and that cooperation with civil society actors was also of decisive importance here. And North Rhine Westphalia's Science Minister, Svenja Schulze, recently emphasized during the inaugural event for the Year of Science 2012 in Berlin, that we need science to leave the traditional paths and define new aims and directions.

LK: This Conference is made possible by the financial support of the EU Commission. What are the interests the Commission actually pursues with this?

N. St.: To explain why the EU Commission espouses the cause of community-based science would surely go far beyond the remit of this interview. Perhaps I should say just this: Science is part of almost every aspect of our lives, but sometimes the connection between community and science, or scientific progress, seems to break. The EU is making an attempt here to create a dialogue of mutual respect and trust, but also to inspire the next generation of scientists. Since the year 2000 the EU has been promoting numerous international projects in the field of 'Science and/in Society'. Science Shops with their unique focus on participation-oriented research were a model from the very beginning which the Commission considered worthy of imitation. The current Conference is therefore made possible within the framework of the PERARES Project in the 7th Research Framework Programme.

LK: Conference themes and contents come from the entire spectrum of science. For which actors is this Conference particularly attractive?

N. St.: Against the background of dialogue and participation not only serving the public but also science itself - and here in particular the inter-disciplinary and relatively young fields of research - scientists at the Living Knowledge Conference will be able to learn from the 'outreach' experiences of their colleagues; especially because research sponsorship increasingly stipulates an element of communication as being obligatory. But it would also be good for nongovernmental organizations and civil society groups to 'take a leaf out of the book' of the over 70 practical examples presented and to see how their research requirements could be integrated into university structures. And students wishing to include socially relevant practical elements into their training/education could take suggestions back to their respective institutes. I am hoping for a very lively participation.

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Learning from Mentoring Relationships within and between Higher Education Institute staff

by Sinead McCann, Dublin Institute of Technology

As part of the PERARES project, staff on the Programme for Students Learning with Communities (SLWC) in DIT have been formally mentored by staff at Queen's University Belfast, with over 20 years experience fostering community-based research (CBR) projects. This paper shares both experiences of the invaluable support, insight and practical guidance emerging from this mentoring relationship, and considers early outcomes from a pilot of informal mentoring relationships in DIT between academic staff experienced in CBR and staff starting CBR projects with students for the first time.

Introduction

As part of the EU-funded Public Engagement with Research and Research Engagement with Society (PERARES) project, experienced staff at Queen's University Belfast (QUB) Science Shop are mentoring staff in Dublin Institute of Technology (DIT). This paper outlines the invaluable support, insight and practical guidance emerging from this mentoring relationship, and also discusses an internal DIT mentoring pilot.

Background

DIT is one of the largest third-level institutions in Ireland, awarding qualifications from certificates to PhDs. Programmes emphasise applied learning and research, and links with industry. DIT's Community Links Programme has been building civic engagement successfully since 1996, addressing educational disadvantage at local, national and international levels, and widening participation. Since 2008, DIT's centre for community-based learning (CBL) and research (CBR) - the Programme for Students Learning With Communities (SLWC)[1] - has been based in Community Links. One full time co-ordinator and one part time project officer supported over 20 individual student CBR projects, supervised by academic staff, in 2010/11.

Mentoring is often linked to collaborative and cooperative learning as they share common features, such as active, reciprocal helping behaviors amongst groups or pairs. Definitions of mentoring include lateral, hierarchical and group mentoring. As contexts vary and the workplace becomes increasingly diversified, individuals may have several kinds of mentoring relationships, or networks of support, with mentors performing different roles (McLoughlin et al 2007). The term 'mentor' stems from Greek mythology. Odysseus entrusted his family, and the care and education of his child, to his friend Mentor in his absence. Mentor advised Odysseus's wife and son (Wood, 1997). Today the word 'mentor' means one who can be trusted to give good council. (Shrestha et al 2009) Mentoring describes a variety of relationships, from role model, coach, guide, sponsor, friend, and adviser and "provides first, an instrumental or career function (e.g., sponsorship, coaching, corporate culture instruction), and second, an intrinsic or psychosocial function (e.g., serving as a model, a confidant, a friend)" (McLoughlin et al 2007). Interactions between peers are qualitatively different from those between expert and novice, or teacher and student. Recent research indicates that peer learning and mentoring relationships can offer cognitive challenges as well as support, because both parties are more likely to engage in mutual dialogue and shared activities (Wood, 1997).

Case study 1: QUB mentoring DIT

Since 2010, as part of the PERARES project, SLWC staff in DIT formalized an existing informal mentoring relationship with staff at the Science Shop, QUB, who have over 20 years' experience fostering CBR projects. Rather than a teacher/pupil mentor relationship which 'implies dependence by the mentee on the mentor' (Wood, 1997) this formal mentoring relationship is a continuous enquiry through dialogue and discussion exploring ideas and issues related to CBR projects. The relationship provides space for on-going learning, and leads to tangible and practical actions.

From the start of our programme, the benefits of engaging in CBR projects, to students, academic staff, and CSOs were clear to us in DIT. However the tasks of starting up a CBR centre, and promoting CBR across DIT raised many questions. Were there CBR projects already in DIT? What was the best way to map these? Who were the key people to talk to? On setting up an advisory board, what should be its format and purpose? What kind of a structure could match supply and demand for research projects? How could CBR projects be initiated? Through a shared common focus on CBR projects and issues, and mutual respect, the mentoring relationship provided insight into these areas. While we never explicitly defined it, the aims of the mentoring relationship included:

- Building networks and relationships with colleagues and peers
- Access to 'know how' on CBR: projects, models, practices, experience and policy.
- Mobilizing knowledge gained, to continue to grow and support CBR projects in DIT in line with best practice.
- Sounding out ideas on CBR projects and related issues
- Exploring possibilities for collaboration.

The set-up of our mentoring relationship is formal and is written into the PERARES project, for the duration of the project. We communicate frequently as our diaries and workloads permit. We always have an agenda for our communications, focusing on issues related to CBR work. Communications include face to face meetings, conference calls, e-mail, phone calls, seminar and conference participation.

The mentoring relationship significantly and positively impacts the work of SLWC. It provides invaluable support, insight and practical guidance, and has. specifically guided the following aspects of our work:

- Building processes for developing and maintaining relationships between SLWC staff, academic staff, CSOs and students in setting up CBR projects. Examples of procedures include: meeting checklists; application forms for students; a CBR process map; and timeline agreement forms for all parties in a project to sign.
- Looking for opportunities for promoting CBR projects in DIT including; e-mailing heads of schools with updates on CBR projects in their school; faculty board presentations; asking for a short window in a lecture to promote CBR topics from CSOs to students in high-demand areas (such as IT); adverts in student journals; production of promotional material; and policy work to embed involvement in CBR into DIT, such as inclusion in promotion criteria.
- Developing processes to ensure we and CSOs receive results of CBR projects
- Planning for reduced staffing levels (down one full time-staff member since September 2011) options included: a first-come first-served system; targeting students in particular areas; or quotas of projects per programme or per CSO.
- Seeking opportunities to share CBR work practices and experiences - e.g. in January 2011 DIT invited QUB to a seminar hosted by DIT and the Irish Higher Education Authority on civic engagement. CBR was discussed at this seminar, with valuable input from QUB staff, who also contributed to a follow-on seminar in May 2011
- Inviting QUB staff to join our Advisory Group.

There are challenges in sustaining this mentoring relationship, including finding time in busy diaries, and the limitations of different institutional structures and political systems. Given the benefits, however, we work to overcome these. Another possible challenge (which hasn't been an issue for us) is if mentor and mentee have different expectations of the relationship.

The QUB staff also identify benefits to them in the mentoring relationship in that it 'flows both ways'. They feel they can raise sensitive issues because of the trusting relationship they have with staff at DIT. QUB staff have indicated the following as positive outcomes of the relationship so far:

- Requires them to reflect on their practice
- They can bring models of practice from DIT back to QUB.
- They can point to DIT as an example of another successful Science Shop in Ireland and this helps provide a national context for the work.
- They can use DIT staff as a sounding board for new issues. (McKenna 2012)

Case study 2: Informal Mentoring pilot within DIT

We realised that some DIT academics experienced in CBR and CBL had the capacity and knowledge to informally mentor staff new to this area. In 2011/12 we piloted an informal mentoring relationship between two lecturers: Mary Moloney, in Nutrition and Dietetics, and Sara Boyd, in Environmental Health. We asked both to review the process after 6 months.

Initially the aim of the mentoring relationship was to provide a space where Mary's CBL knowledge and experience could be shared with Sara. Mary identified further objectives of the relationship, including building a "collegiality with a faculty member from a sister college that might not otherwise develop" and creating the opportunity for collaboration on future research projects. (Moloney 2012).

Mary viewed the mentoring sessions as "a non-threatening, positive, encouraging, and a motivational experience for the mentee" where the "mentor's positive experiences and mistakes can be shared" and "future anticipated problems and difficulties can be discussed". Together they considered what could be achieved, exploring a wide variety of possible projects, discussing strengths and weaknesses. Mary saw her role as a mentor as "a valuable career development tool", building leadership skills and providing opportunities for possible collaborative work.

Mary also identified the possible challenges of this informal mentoring relationship:

- Investment in self and time for the mentor.
- Making sure that the mentor appreciates the importance of keeping to their commitment, as cancelling or not showing up for a meeting, or poor provision of support, can be worse than not being mentored at all.
- Ensuring that there is strong SLWC support for the project.
- Consideration of possible implications for financial cost. (Moloney 2012)

Sara described the experience of being mentored by Mary in her first year working with students on CBL projects as 'very positive', as Mary was generous with her time and easily accessible. Sara was "very encouraged by the success of [her] mentor - [CBL] can be done and it's a very positive experience for all involved. It's achievable!" (Boyd 2012)

The mentoring experience enhanced Sara's confidence to undertake her CBL project. The relationship provided an opportunity for her to hear about her mentor's projects and processes. Sara felt that the "mentoring match" was excellent because their projects had many similarities. "Although we are working within different disciplines I could certainly identify how transferable some of processes and techniques could be to my project and discipline group". She described conversations with Mary in which she received clear direction and guidance based on Mary's experience, and returned to her meeting notes later for reflection. (Boyd 2012)

As our first mentoring pilot between academic staff, we were pleased that both lecturers felt that it was valuable, mirroring our own experience of the benefits of being mentored by our colleagues in QUB. We would highly recommend this process, and hope to set up, and be involved in, more mentoring relationships.

Recommendations

From our own experience, and feedback from Mary and Sara, we would offer the following questions and guidelines to consider at the start of a mentoring relationship, to overcome some potential challenges:

1. What is the focus of the relationship - i.e.: a particular project... Identify purpose and goals, considering partners' needs and potential benefits.
2. How long will the relationship last? Identify a time frame.
3. Is the relationship formal or informal?
4. Can you assume mutual respect and recognition between mentor and mentee?
5. How will you communicate - face to face meetings, phone-calls, Skype, participation at conferences? How often? Give it a structure, but leave some room for flexibility.

6. Allocate 11/2 - 2 hours for the first meeting, to share experiences and explore areas of particular interest.
7. Set achievable goals, and design realistic and measurable processes, as actions to review at each meeting.

Acknowledgements

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Information

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Learning from an Irish multidisciplinary collaborative project where students are the community

by Dr Catherine Bates (Dublin Institute of Technology), Sergeant Jim McAllister (Garda Road Safety Unit)

College Awareness of Road Safety is a collaborative course-based multidisciplinary CBR project between students and staff at Dublin Institute of Technology and the Garda [police] Road Safety Unit, begun in 2007/8. Both partners describe this collaborative research model, whose aim is to improve awareness of road safety among the target group of 17-24 year olds - i.e. students themselves - by engaging them in course-based research. This paper presents both perspectives on the benefits of mentoring in this model, where academic staff from various disciplines and the Road Safety Unit mentor students to creatively develop individual approaches to road safety-related research.

Introduction

We consider the benefits and challenges of a multi-annual, multidisciplinary community-based research and learning collaboration between Dublin Institute of Technology and the Road Safety Unit of An Garda Síochána (the Irish Police Service). A mentoring approach encourages and supports students to research the issue of road safety and disseminate their research effectively among their peers.

Introducing the collaboration - the Garda perspective

The Garda Road Safety Unit (founded 2001) researches, prepares and delivers road safety initiatives to a variety of road user groups in the community, with particular emphasis on 17 to 24 year olds. Initiatives are well established in the 1st and 2nd level education system (up to age 17 approximately), however the 3rd or university level, is not so well served.

The Road Safety Authority's 'Safegrads' programme - guidelines for the Students Union and college administrators to run a Road Safety week - is available in a number of colleges, but doesn't allow students to explore road safety issues over a longer period.

In 2008 the Dublin Institute of Technology (DIT) in partnership with Garda Road Safety Unit, initiated the College Awareness of Road Safety (CARS) project across the Institute. The Garda Road Safety Unit (RSU) initially addressed a number of lecturers from a variety of faculties to outline their objectives for the initiative. Mainstream advertising and other road safety initiatives were not having the anticipated impact on fatalities and injuries in the 17 to 24 year age category (see table 1).

2007	Total	16 to 30	%	16 to 25	%	Overall % Female
Fatalities	338	129	38%	104	31%	25%
Drivers	138	57	41%	46	33%	
Passengers	70	38	54%	33	47%	
2008						
Fatalities	279	120	43%	95	34%	26%
Drivers	133	67	50%	52	39%	
Passengers	54	27	50%	25	46%	
2009						
Fatalities	238	112	47%	83	35%	23%
Drivers	126	62	49%	47	37%	
Passengers	39	27	69%	23	59%	
2010						
Fatalities	212	100	47%	70	33%	21%
Drivers	91	42	46%	26	29%	
Passengers	55	36	65%	29	53%	

Table 1 - Age 16-30 road fatalities (Ireland) 2007-2010 (An Garda Síochána Analyst Service)

The CARS project sought ideas and initiatives from students for innovative methods of delivering road safety messages to the target audience, in this instance the students themselves. Lecturers and students had complete freedom in selecting a road safety topic which they felt had an impact on their peers, researching relevant data, producing an appropriate strategy to address the problem and raise awareness among their peers, and then delivering their initiative, provided module learning outcomes were met. RSU staff were available to mentor students and provide assistance. Lecturers ensured that topics and methodologies were appropriate to the learning outcomes of their module, and assessed projects accordingly. Lecturers determined whether group projects were acceptable. Projects could be research-based and/or lead to the development of a road safety initiative, e.g. a road safety video on youtube or a poster campaign.

Students were allowed as much leeway as possible, encouraged to think outside the box and be creative in designing their discipline-specific project, to ensure participation from as many students and disciplines as possible. RSU staff met students with an interest in the project and outlined the background to the project. The RSU were available to advise or provide practical assistance to the students, directing them to relevant sources for data, and clarifying any ambiguities. At the end of the initiative a showcase event featured the various projects and a number of Road Safety practitioners and experts attended. Awards were made for the best projects, and prizes were provided by supporters of the initiative. The initiative has grown over the subsequent 3 years and has now become established in the college curriculum.

The academic perspective
The CARS project is supported by the Programme for Students Learning With Communities (SLWC), which promotes and supports community-based learning and research (CBL and CBR) in DIT, as part of Community Links, the DIT centre for access and civic engagement. DIT is one of the largest providers of Higher Education in Ireland, with 20,000 students up to PhD level. The value of CARS was immediately apparent from an academic perspective. The wide open brief from the RSU, and their support to participating academics and students, was a wonderful opportunity for us to support staff to develop academically rigorous projects with real-life applications across a range of disciplines, offering students the opportunity to change behaviours and save lives. Our remit is to work with underserved groups, and the RSU was a relatively well-resourced state agency, but the RSU wanted to work with us because students were underserved in relation to road safety, as discussed above. With the RSU as mentors, and the students as the underserved community, the project was within our remit.

All CARS projects run as part of modules which do not require a community-based learning approach. Writing and validating a new module, and securing accreditation from professional bodies, is time-consuming, so we advise academics to implement CBL or CBR projects through existing modules. We discuss modules with relevant learning outcomes to CBL or CBR, and explore suitable topics related to road safety. Some lecturers use problem-based learning to allow students identify their own topics related to road safety. The open brief from the RSU really facilitates this. Students can undertake research, technical projects, or creative work; individual or group projects; at any level of study from undergraduate to PhD. Our annual CARS award for students, judged and presented in different ways over four years, gives important recognition to their work with the RSU. In 2010/11 approximately 110 students participated in CARS across 8 disciplines, undergraduate and postgraduate. Projects included: first year Product Design students designing concepts for products to enhance road safety; first year Marketing students producing youtube videos and posters on road safety, MSc in Environmental Health students researching speeding behaviours and attitudes to road safety among drivers, and a final year Chemistry student analysing methods for breath and urine testing for alcohol.

Mentoring structures
Every year in DIT we organise at least three CARS lunchtime meetings, where interested lecturers and students meet the RSU and SLWC staff, to discuss project ideas, and clarify what support they might need from the RSU. We collaboratively agree the format of the end-of-year showcase - another opportunity for participants to meet and learn from each others' perspectives on road safety. These regular meetings are invaluable in providing peer support among staff and postgraduate students (and occasional undergrads) and mentoring support from the RSU. Once projects have been designed, RSU staff attend preliminary meetings with students to explain the thinking behind CARS and to urge students to be innovative. The RSU support the students with practical assistance, e.g. the supervised provision of breath testing or speed detection equipment, advice on relevant data sources. More recently the RSU have suggested topical areas of road safety on which research data is required, e.g. measuring and recording the distance between cyclists and vehicles overtaking them, and collecting this data in a mix of environments.

Challenges
Because lecturers adapt existing modules to incorporate CBL or CBR as part of CARS, CARS is not written into the module descriptor, which makes us dependent on individual staff members to engage with CARS, and weakens the project's sustainability - e.g. when one lecturer fell ill, the person taking over his module did

not run a CARS project, as there was no requirement to do so. The mentoring approach adopted by the RSU means delegating the direction and management of the research and projects to students and lecturers. Trust and respect are essential requirements in a supportive but non-directive mentoring structure.

The recession has meant staff cutbacks in DIT and in the RSU, and additional workloads. We pragmatically review what existing resources allow us to do. This review can be productive, as we changed the end of year showcase format from the large one-day labour-intensive exhibition of student work of the first two years to a more focused presentation evening. While the exhibition of projects was open to non-participating students, participating

Too fast. - Picture by Katharina Scherer / Pixelio

students didn't have time to view each others' work. Students now have five minutes each to present on their work to their peers and the RSU, the Student Union president, and SLWC staff, followed by 5 minutes of questions and feedback. This format seems to place more focus on the academic dimension of the student projects, and allows them to hear, and ask questions about, how students in other disciplines address the issue of road safety. They also receive prompt and succinct feedback from their peers and the RSU, and the RSU have immediate access to the outcomes of their work - this access had not been consistent in previous years.

The most serious impact of staff cutbacks is that no positions or units are guaranteed, and this project depends on a centralised contact point or CBL/CBR office in DIT, as the RSU could not identify and approach individual lecturers themselves every year, and on the invaluable supports from the RSU for DIT students and staff.

Evaluation

From the RSU perspective this is an effective initiative for the following reasons:

a) most students take part in CARS by choice, therefore are more likely to be enthusiastic about the topic. As students wrote in anonymous post-project evaluations: 'A lot of work, but enjoyable and fun. I liked doing it and got a lot out of the results: teamwork, new knowledge on road deaths etc, achievement, pride'.

b) students engage with Road Safety as a topic over a long period through CARS. As one student wrote: 'I didn't think [the project] would be as major it was. I didn't really gauge how it might actually help future research [...] It ended up being very much a

'big deal'. I was delighted to be a part of it; and particularly since there's scope for future research'.

c) students researching road safety are more likely to analyse and retain data and information than if they were spoon fed, as in other initiatives. As students wrote: 'I learned so much [...] I benefitted from learning firsthand the attitudes of the community' - or more cautiously: 'I knew it wouldn't change much in real terms i.e. what we achieve won't influence the situation that's on our roads, of course it will make students in our class think, but is that enough?'

d) students brainstorming ways to target their peers could develop innovative solutions which could then be brought into mainstream road safety promotion. This student felt CARS 'gave myself and my group more awareness on the topic [of drunken pedestrians], allowed us to use our creativity and show our marketing knowledge and expertise'.

Future potential

This year for the first time, one lecturer took an interdisciplinary approach to CARS. The Transport Management lecturer invited participating staff and students in other disciplines to devise research questions relevant to their CARS projects, on which her students would collect data. SLWC staff hope to build on and extend this interdisciplinary approach, to deepen and enhance student learning. We would also like to research the impact of CARS by comparing the road safety awareness among students after taking part in CARS with that of a group of students who had no involvement in CARS. Looking forward, as CBL and CBR are integrated into 3rd Level Education structures, as recommended in the National Strategy for Higher Education to 2030 (Hunt 2011), the RSU propose to develop CARS on a national level. An umbrella group is developing and partnerships are growing among colleges and universities focussed on CBL. This offers an opportunity to extend CARS initially to another 5/6 colleges, with a long term objective to have the initiative in every 3rd level college in the country. Progress will require acceptance by college authorities of CARS, and a unit in each college to co-ordinate the running of the initiative.

Conclusion

The mentoring approach behind this multidisciplinary project, while labour-intensive, supports students and lecturers to explore freely the issue of road safety from the perspective of their own interests and disciplines. We would recommend this approach to anyone wanting to start a multidisciplinary project, particularly one which directly impacts on the lives of the participating students.

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Building community-researcher CBPR capacity and incubating partnerships through an Environmental Justice Network/Community Science Workshop

by John Sullivan MA, Sharon Croisant PhD, Alexandra Bambas-Nolen, PhD, John Prochaska Dr.PH / MPH, Bryan Parras BS, Cornelis Elferink PhD.

Encuentro, Community Science Workshop and Community-Based Participatory Research: building bidirectional research capacity through access to knowledge and skills

The Environmental Justice Encuentro Network/Community Science Workshop is an active web of communities and environmental public health researchers affiliated with the NIEHS (P30) Center in Environmental Toxicology at the University of Texas Medical Branch (UTMB, Galveston), UTMB's Center to Eliminate Health Disparities, and other regional collaborators. This eclectic assemblage formed with a resolve to transmit skills, share news and successes, promote collaboration among communities and regional researchers, and extend the scope of a regional network of community based Environmental Justice organizations using credible environmental science as the basis for public health advocacy. The Environmental Justice Encuentro network and complementary Community Science Workshop process were initially envisioned by Juan Parras (Director of Texas Environmental Justice Advocacy Services, Houston TX) and Jeffrey Wickliffe, PhD (Tulane University researcher formerly with UTMB's Environmental Toxicology Division) based on outcomes of collaborative efforts in Houston Ship Channel neighborhoods focused on health impacts of chronic low-level exposure to petrochemical emissions. The network was conceptualized in terms of Encuentro's overarching Tejano linguistic roots, with dual connotations of discovery and engagement. The Encuentro's operational format is based on a similar structure developed by the South West Workers Union (San Antonio TX) to strategize proactive community responses to address health, social and economic issues specific to Texas and the U.S. Southwest. Grassroots empowerment, a focus on local knowledge and culture, a bias toward evidence-based action and consensus decision-making are keystones of the Encuentro network's way of working.

The Community Science Workshop component of this process was inspired by a European model of community accessible and needs responsive science, the Science Shop. Parras and Wickliffe initially proposed this concept at the first Environmental Justice Encuentro (2008), and discussion among community groups and researchers shaped a format for collaborative work based on priorities developed in Encuentro network dialogue, grounded in collaborative identification and framing of scientific questions, and active involvement of communities affected by environmental exposures and consequent health impacts in collection, analysis and interpretation of project data. The name, Community Science Workshop, was chosen by consensus to forefront both the active nature of the process and the bidirectional co-learning that occurs from constructive engagement among community health advocates and scientists.
While the Encuentro network focuses on the importance of community context for constructive dialogue and prioritizing environmental health issues, the Community Science Workshop

model seeks to incubate needs-based, actionable science, based on a shared commitment to increase science literacy, democratize knowledge-making processes, and address disparities in power and privilege among project collaborators. The ultimate goals of the Community Science Workshop are to empower civil society participants with scientific knowledge and technical skills, and inform development planning and regulatory policy through a health impacts perspective. In addition to promoting scientific collaborations, the Community Science Workshop integrates environmental exposures and consequent health outcomes, social determinants of health, the ideas of multiple stressors, community vulnerability and resilience, and cumulative risk burdens within a holistic perspective. This broad view of social environmental health reflects a social-ecological model of community dynamics, and a model of risk communication grounded in the theory of cultural cognition (UTMB CET COEC 2010, revised).

Figure 1. Relationship of Environmental Justice Encuentro, Community Science Workshop, and the Community-Based Participatory Research approach to engaged research

Community Based Participatory Research is the key concept linking dialogue within the Encuentro network and actionable scientific outcomes of the Community Science Workshop (see Figure 1). CBPR may be defined as "a collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities" (CCPH (Kellogg) 2001). This deeply interactive approach to community research collaboration grew originally from the seminal work of

Kurt Lewin (Action Research) and Paulo Freire (Pedagogy of the Oppressed / conscientização / Popular Education), and notable practitioner-theorists such as Barbara Israel, Nina Wallerstein and Meredith Minkler have spread this approach throughout the North American community of engaged practitioners (Wallerstein 2003). Sheer numbers of CBPR practitioners in the United States and Canada have grown steadily since the approach achieved critical mass in the past decade, and CBPR has garnered increasing acceptance within academic research, particularly among specialists in mixed-methods (quantitative / qualitative) community research. CBPR employs a variety of structured and informal modalities - from stakeholder alliances to public forums, and arts / popular education-based teaching and outreach models - to create and sustain bidirectional interfaces for culturally fluent communication among project collaborators (Siqueira 2009).

Core CBPR principles include multi-directional communication, co-learning, and strong commitment to understanding the contextual subtext of varying perceptions, priorities, and points-of-view among project partners, as well as developing bidirectional capacity for sustainable research relationships, and honest transparency in terms of data-sharing and agendas (Croisant 2011). These working principles have served as a conceptual roadmap for planning Encuentro networking, and incubating research focused on community-identified needs within the Community Science Workshop. CBPR values - such as trust, respect, inclusion, mutuality of interests, reciprocity, collective benefit and solidarity - are closely aligned with a guiding vision of community engagement now accepted over years of research praxis and refinement (NIH 2011). CBPR adds value to Community Science Workshop outcomes because local knowledge "expands the epistemological parameters of research" to include experiential knowledge beyond the purview and understanding of current knowledge-creation models (Corburn 2005). This participatory approach to the Encuentro / Community Science Workshop is also an ideal platform for growing autonomous scientific and technical capacity in the community sector while "ground-truthing" the practical relevance of scientific models and researcher perceptions.

Themes, topics and activities featured in the most recent iteration of the Environmental Justice Encuentro / Community Science Workshop (March 2011) included: 1) a "Toxic Tour" of Houston's Industrial Ship Channel communities (Galena Park, Manchester, La Porte, Bayport & Baytown with focus on petrochemical fence-line emissions, diesel particulates exposure, excessive noise and neighborhood encroachment by Port of Houston container facilities, lack of access to wholesome food, access to health care; 2) a CBPR story-telling presentation on building sustainable research relationships featuring collaborators, Edward Emmett, MD (University of Pennsylvania), and Rev. Horace Strand (Chester Pennsylvania Environmental Partnership); 3) a community mapping workshop with Community In-Power & Development Association (Port Arthur TX) and the Pacific Institute of Oakland CA; 4) regional community networking and reciprocal education sessions; and 5) a symposium on possible hydrocarbon exposures / health effects stemming from the Macondo Oil Spill in the Gulf of Mexico.

Looking at results: an evaluation of the EJ Encuentro/ Community Science Workshop by outcomes
The ultimate worth of the Environmental Justice Encuentro Network/Community Science Workshop may be gauged by concrete

outcomes of the process. Since inception, Encuentro/CSW has helped to stimulate and sustain the growth of a tight network of community-based environmental health and justice advocates, regional environmental health scientists, physicians, and legal specialists. This structure, which initially focused on community health issues in the greater Houston/Galveston, Texas area, now extends from El Paso, Texas (west) to Bayou la Batre in coastal Alabama (approximately 1931.2 km.). A special focus group - the Texas Ports Communities Network - developed through Encuentro/CSW to frame an evidence-based response to anticipated health impacts of increased regional container port development as expansion of Panama Canal carrying capacity nears completion. The process has also increased the capacity of community organizations and environmental public health researchers to effectively collaborate within the framework of Community-Based Participatory Research, and directed focus on health and social factors that promote or degrade community resiliency in a region particularly vulnerable to the impacts of climate change, and subject to the threat of oil exploration/production accidents, as well as routine dangers of oil refining and chemical production processes.

The Encuentro/CSW has been instrumental in fostering the planning and development of numerous site-specific small projects, town hall forums and risk communication outreach sessions throughout the network. More formally structured research (funded or pending) includes: the "Gulf Coast SECURE Center Cumulative Risk Project" (with Community In-Power and Development Association (CIDA) / Port Arthur TX), "Promoting Healthy Homes in an EJ Showcase Community" (with CIDA/Port Arthur TX), and "Cumulative Risk: a systems dynamics model of environmental and social determinants" (with CIDA/Port Arthur TX). The major outcome, thus far, is GC-HARMS, a project that began, on the community level, as an Encuentro/CSW window into the health and ecosystem impacts of the 2010 Macondo oil spill.

GC-HARMS: a collaborative response to a massive environmental catastrophe
The "Gulf Coast Health Alliance: Health Risks Related to the Macondo Spill" (GC-HARMS) seeks to characterize health impacts and community resiliency factors related to the Deepwater Horizon oil disaster. Even prior to the oil spill, many communities involved in this project could be described as vulnerable, carrying significant burdens of cumulative risk stemming from loosely regulated industrial activity, unmet housing and infrastructure redevelopment needs after half a decade of unusually destructive hurricanes and tropical storms, and difficult health care access challenges. The seafood industry figures hugely in the local economy and the oil spill severely disrupted seasonal fishing, and may have damaged the estuarial food web, while exposing subsistence consumers of local seafood to potentially harmful compounds associated with crude oil. Some of these communities - Native American (United Houma Nation, Louisiana), Vietnamese-American fisher-folk (Gulfport, Mississippi), African-American (Biloxi, Mississippi), traditional Louisiana Cajuns and racially-ethnically diverse fishers in coastal Alabama - have been culturally, economically and, in some cases, linguistically marginalized, adversely affecting their collective resiliency in the wake of such a disaster.
GC-HARMS is situated within a consortium "network of community and university partnerships" focused on the health and resiliency impacts of the 2010 Macondo oil spill. The overarch-

GC-HARMS Community Engagement Process (Early Stages)

Initial town hall meetings to assess community needs/concerns

Primary concerns related to long-term health effects of consuming potentially contaminated seafood. Many families not only subsist on Gulf seafood, but make their living from harvesting and marketing it

Interviews with partners in Louisiana to assess oil-spill related research, education, & outreach interests

Proposals from participants to increase participation to ensure representation of geographically/ethnically disparate communities

Face-to-face meetings with community groups in four states to collectively frame research questions

Research questions framed
Specific aims drafted

Series of meetings involving scientists, clinicians, and community groups held in Louisiana, Mississippi, and Alabama

Logistics, logistics, logistics
Research proposal initiated and grant funding obtained
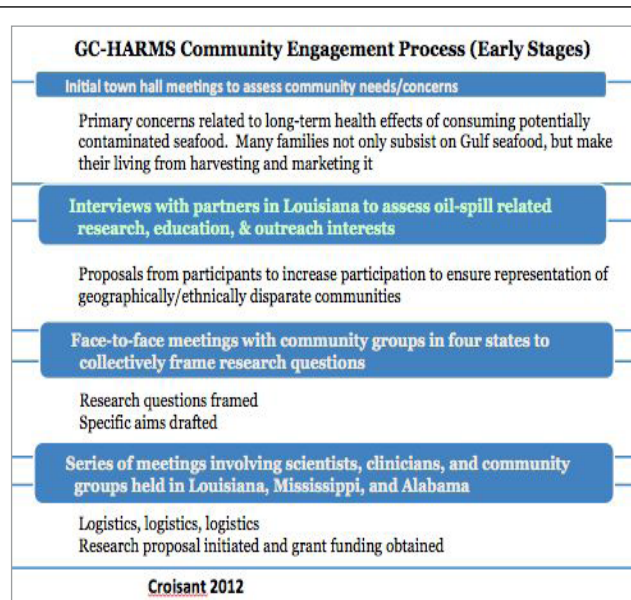
Croisant 2012

Figure 2: GC-HARMS Community Engagement Process

ing purpose of GC-HARMS is to "characterize and communicate the human health risks of exposure to potentially hazardous food-borne petrogenic Polycyclic Aromatic Hydrocarbons (PAH)" (NIEHS 2011). Working relationships with community partners were developed and refined through an intensive process involving 1) pre-project scoping visits, 2) presentation of a proposed project overview at numerous sites, 3) use of a network-wide CBPR training process to exchange and compare values, priorities and goals of project partners, 4) developing marine life sampling protocols and field testing the methodology's workflow, 5) creation of contamination / exposure sampling "hubs" while smoothing logistics to make it possible for local fishers to collaborate directly by sampling oysters, white and brown shrimp, blue crab and fin fish from their subsistence or commercial catch (see Figure 2).

The aims of GC-HARMS evolved in response to community identified issues and concerns about the possible health and economic implications of research outcomes. Project goals include: "1) assess PAH contamination of Gulf seafood consumed and sold by subsistence fishing communities, 2) determine the toxicity of petrogenic PAH, 3) evaluate exposure and health outcomes in the human population, and 4) translate and disseminate find-
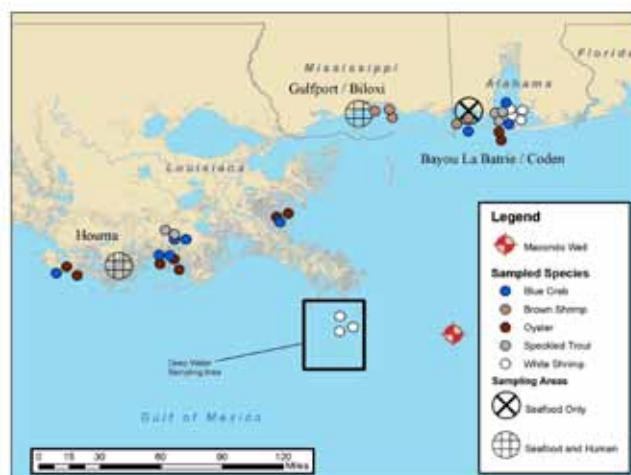
ings to our community stakeholders for development of appropriate outreach and education activities" (NIEHS 2011). Since GC-HARMS officially began (July 2011), project partners have developed a health and resiliency survey instrument and human subject sampling protocols that successfully passed Institutional Review Board scrutiny, and collected 39 marine life samples with area fishers (see Figure 3).

Community personnel at human subject sampling hubs successfully completed training in "Protection of Human Research Subjects" (Social / Behavioral Focus) and will work directly with university researchers in recruiting subjects for blood / urine sampling and administering personal survey questionnaires. Community organizations also function as outreach, education and communication channels for their regions, organizing Fisher Forums, arranging sampling expeditions with local fishing crews and designing a variety of culturally fluent outreach activities to disseminate news, findings and implications of the project. Community hubs caucus frequently by telephone or internet with researchers, and the entire group meets yearly to critique and improve the process. During the last two years of the project (2014-16), community hubs will directly participate in data analysis and interpretation, and compile a multi-media platform journal of this shared experience incorporating the scope and range of feelings, views and perceptions represented in this widely diverse group.

Readers may access the NIEHS website for complete listing of GC-HARMS community hub organizations and university consortium collaborators. (http://www.niehs.nih.gov/about/od/programs/gulfspill/gulfconsortium/grantees/texas/index.cfm).

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Figure 3: GC-HARMS Marine Life Sampling Matrix: Louisiana, Mississippi, Alabama Gulf Coast

A New Infrastructure Model to Build Capacity in Socio-Health Research: Opportunities for Inclusive Cross-Disciplinary and Cross-Sector Community and Stakeholder Partnerships

by Katharina Kovacs Burns, MSc, MHSA, PhD, Director Interdisciplinary Health Research Academy, University of Alberta

Introduction

We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline (Popper 1963,p.88).

Health research which is closely aligned with the social determinants of population health and wellbeing (identified here as socio-health research) is complex and challenging to do effectively, comprehensively or with rigour. It has increasingly been scrutinized from all angles including whether the most appropriate research team members, partners and collaborators are in place for the targeted research, both in terms of diverse and critical skills to design, conduct and analyze the research,and content expertise or experiences from different disciplines and sectors. This team relationship and approach to looking at health research is identified as interdisciplinary health research (Aboelela et. al. 2006). On the one hand, it is promoted and supported by funders such as the Canadian Institutes of Health Research (Hall et al. 2006); but on the other hand, it is a struggle for many researchers and research teams, as the dynamics of interdisciplinarity is not easily understood or implementable (Nair et al. 2008).

For the converted, the frustration that comes with building interdisciplinary cross-sector health research teams is eventually overruled by the many benefits and rewards, including the critically important mobilization and uptake of research evidence by targeted or diverse knowledge users. This latter is increased when knowledge users are on the research team or partners directly involved (Mitchell et al. 2009). How can health research teams be assisted or mentored in their transformation into interdisciplinary and cross-sector teams including community, government, public and other relevant knowledge users? What environmental and other supports need to be in place to assist teams with the transitioning and capacity building they need? How can we enhance their capacity and success indesigning, conducting, analyzing and mobilizing complex 'real world' socio-health research questions and evidence?

Confronting the Challenge

The challenge and the goal is to provide an optimal setting with supports for socio-health or health research teams to develop their interdisciplinary capacity and optimal interaction for effective performance. Having research networking space, services and supports for cross-disciplinary and cross-sector community and academic health research teams is critical for meaningful and useful research to be developed, funded, and appropriately mobilized and implemented by the targeted knowledge users. Having opportunities for interdisciplinary cross-sector health research teams to engage meaningfully to 'incubate' relevant research questions based on 'real-world' health and social issues and policy questions, can have better results for funding and impacting health and social practices and outcomes.

Putting Suggestions into Action

Based on the above premise and goals, as well as first-hand community-based health research experiences of academic and community stakeholders, the University of Alberta piloted a new and unique entity to support interdisciplinary health research named the Interdisciplinary Health Research Academy (IHRA). Its membershipis inclusive of all researchers in health within eight Health Sciences and 10 non-health Faculties and Schools at the University of Alberta, as well as of a broad external community of public and private cross-sector and government stakeholders. IHRA has a dynamic strategic plan developed by a Community-University Steering Committee (balance of community stakeholders and academics) with an invested interest in being part of and aligning interdisciplinary and cross-sector socio-health research interests. Research partnerships will be matched based on needs for research priorities that fit with IHRA's mandate to "advance, facilitate and support cross-faculty and multi-stakeholder interdisciplinary ... research to better understand and resolve health issues and challenges facing individuals, communities, ... governments".

IHRA is supported through the Health Sciences Council (made up of the eight Health Sciences Faculties and an administrative secretariat) situated within a new open concept building called the Edmonton Clinic Health Academy (ECHA). As an integral part of ECHA, IHRA will play a key role in governance, administration and support for health research teams which occupy about 2500 square meters of space, of which about 800 will be dedicated to 'incubation' of new research questions and study designs by interdisciplinary and cross-sector teams of academics, community stakeholders and students. This space is called the 'Research Discovery Mall' and includes not only space for these diverse health research teams to come together to 'incubate' their research questions and approaches, but also access to research brokers, expert statisticians and other needed services, some funding resources, data bases and capacity building supports, as needed.

Health/Socio-health Research Partnerships and Opportunities

Through IHRA, the community stakeholders (community non-profit organizations, government, industry, health organizations, patient/consumer groups, funders and others) and academics have been made aware of what facilitation, supports and capacity-building opportunities they could access toenhance their chances of being successful interdisciplinary health research teams. Essentially, it is interdisciplinary health research team training and competency development which is provided (Gebbie et. al. 2007). Individually and as a team, they are encouraged to engage to foster research questions and develop purposeful proposals for planning relevant studies, research grants or knowledge mobilization with targeted or broad knowledge users. IHRA and its members have recently put this research readiness to the test by launching a 'request for statements of health research interests' to the broad community of stakeholders. This resulted in numerous responses by

community leads developing their statements of health research interests with diverse team members including academics in some cases. Follow up with these responses is in progress, and will be ongoing as teams build capacity, access space and resources, refine their research questions, proposals and grants are developed, studies are conducted and results are mobilized for dissemination, implementation and evaluated.

Conclusion

To provide spaces, opportunities and resources for diverse stakeholders to connect and interact on common health research interests is what IHRA's infrastructure does; to bridge different perspectives on socio-health issues and research areas and have diverse research teams collaborate to investigate answers to those complex issues or problems is what IHRA facilitates and supports. The goal is to encourage the development and growth of appropriate interdisciplinary cross-sector health research teams to do the right kinds of health research for the right reasons and outcomes.

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Creating successful partnerships using applied community psychology research

by James R. Cook & Ryan P. Kilmer, Psychology Department, University of North Carolina at Charlotte, USA

Students and communities can both learn through community-university research partnerships. During 10 years of partnerships with community groups, the Community Psychology Research Lab has engaged students in projects that build their skills while increasing the research competence of the agencies. Faculty roles are critical in maintaining the relationships, mentoring students, resolving conflicts, and fostering mutual learning.

Introduction

Central to community-based participatory research (CBPR) is the creation of partnerships that enhance mutual learning among all partners. Indeed, in addition to shared decision making and mutual ownership of processes and products, core elements of the collaborative CBPR approach include co-learning and the reciprocal transfer of expertise and knowledge (Balcazar et al., 1998; Viswanathan et al., 2004). Involving students as partners in CBPR provides multiple benefits, as students learn about community processes and systems from community members, and community members and organizations learn, develop, or enhance their research competencies via their work with students. This paper draws on the experiences of a community psychology training program that focuses on community change,using an ongoing team of faculty and students working with multiple community partners.

History of Partnerships

For each of the past 10 years, the Community Psychology Research Lab has engaged up to 30 undergraduate and graduate students in partnerships with local organizations, to help both students and agencies develop greater capacity to effect change. Current projects include:

- helping plan and evaluate a school-multi-agency partnership to address the needs of children and families in an impoverished neighborhood;
- evaluating the impact of "family partners" who provide support for families involved with child protective services;
- developing and evaluating supportive "wraparound" processes for families living in public housing developments;
- developing research capacity within and evaluating the impact of a family advocacy organization that serves families engaged with the mental health system.

Because our university has little structural support to foster partnerships, we have developed strategies to create and sustain partnerships that actively involve university students at all levels. Students gain experience and develop skills through different means: volunteering, courses that include service-learning projects, independent study courses, practicum courses in which the primary task is service-learning, paid staff positions on applied research projects, or Master's theses and doctoral dissertations.

Fostering Mutual Learning

To maximize the mutual benefits to the students and community agencies in a team-based, project-driven partnership, attention must be paid to several key issues:

1. **Partnership Development:** Developing partnerships must focus on building trust and mutual benefit, and focus on addressing short- and longer-term needs for all partners. This requires a personal relationship between faculty and key members of community organizations. Partners need to be honest with one another about what the respective parties, particularly students, can do and what they cannot. While regular communication via email is important, meeting in person periodically is critical, and attending conferences together can be particularly useful, allowing informal interactions over dinner, after sessions, or while traveling together. In these settings, the parties can better get to know one another, and discuss ways to advance the partnership. Taking the time to informally meet can also provide opportunities for relationship building and discussion of roles that students might play.

2. **Community Learning:** Fostering a sense of "shared learning" is essential in conducting community-based participatory research. Partners can benefit from applied research only when they are open to learning from data, even when results do not "look good" for the organization. A strong partnership that emphasizes mutual learning to enhance the common good is essential, and university members (including students) must be sensitive to the public relations needs of community organizations, but never at the expense of research integrity. We try to keep the focus on using data to guide decision making and resource allocation, and to improve practice. Students use their skills to help community organizations build capacity for applied research, while they build their research skills.

3. **Student Skill Development:** Many students have little interest in research for the sake of advancing generalizable knowledge, but readily become engaged in research that can improve practice and outcomes. Yet, traditional research methods courses often fail to train students to translate research into usable community knowledge. Students can gain such skills via experiential learning. For example, through meetings with partners, students can develop a clearer understanding of their perspectives and needs, and gain insight into how to communicate in a way that addresses partners' interests. We have students regularly report to partners, but only after we have provided feedback about clarity and usefulness of findings and recommendations. This often takes multiple iterations, until the student can translate findings into a form that partners can use.

4. **Faculty Roles:** With little university infrastructure to support faculty or students in the development and maintenance of community-university partnerships, faculty must provide continuity through their ongoing relationships with community partners. Students then become "junior colleagues" who can gain knowledge and skills and effect community change through these relationships. Faculty serve as
   a. "matchmakers" between students and agencies, connecting student interest and ability with community needs;
   b. supervisors/mentors for the students, increasing the demands on students as they become more capable, and helping students continue to gain competencies;
   c. advocates for the students and their learning, while helping ensure that the community partners have their needs met.

Faculty often need to help students understand the complex relationships among community organizations, and to help them maximize their ability to effect change. Over time, students develop greater leadership roles, and learn skills for adapting to the ambiguities of community work. We have found that taking students to community meetings, in which faculty can model interactions for engagement and partnering, helps students understand partners' concerns (with debriefing to help them process what they saw and heard). Faculty can also identify resources (grants or contractual relationships) that support students' roles in the partnerships.

5. **Conflict Resolution:** Conflicts inevitably arise in community-university research partnerships, and mechanisms for their successful resolution must be developed. Conflict can occur between community agencies, between universities and the community agencies, or among students working on teams. We have found that conflicts between our university and community agencies can often be resolved by using our relationships and 'capital' to help find the common middle ground. More challenging have been student-student conflicts, as interpersonal style, different work habits, and poor communication can result in inequitable distribution of work loads and potentially poor follow-through with community partners. Particularly when students serve in supervisory roles over other students, faculty need to provide support to help ensure that student managers can deal effectively with their peers.

Summary

Community-university research partnerships provide opportunities for students and community agencies to learn about community processes and applied research. Faculty serve in key roles as mentors for students, assume responsibility for developing and maintaining the relationships with community groups that can be central to developing a shared "learning community", and use their skills and social capital to resolve conflict as it arises.

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Transition, Resilience and the Economy
The Role to be of Science Shops

by Frank Becker, University of Berlin and Karin Zacharias-Langhans, Inlingna

Well-Known - Suddenly Pressing

Climate change is drastically noticeable and it is worsening. Depletion of fossil fuels and the exponential economic growth have been identified as the cause of this tragedy. There is still a lack of sustainable solutions that can combine economic and personal life to a successful model. The complex causes of climate change require relatively direct, practical, applicable and easily transferable solutions and paradigms. According to WBGU, it is about creating a new basis for economic processes concerning production, infrastructure, lifestyle, regulatory systems and the interaction of politics, society, science and economy (WBGU 2011, p. 26). Going this way, "[we] must lay hold of the fact that economic laws are not made by nature. They are made by human beings." (Roosevelt 1932)

> "Some people see things as they are and say why?
> I dream things that never were and say, why not?"
>
> *Robert F. Kennedy*

Civil society and NGO have drawn our attention to this context. We like to point out that this complex topic is on the agenda of several spheres of society, e.g. economy, science and politics and field of interest not even since the last decades. It was, e.g. Robert F. Kennedy (GUTHMAN, ALLEN 1993) who pointed out: "Too much and too long, we seemed to have surrendered ... community values in the mere accumulation of material things. Our Gross National Product ... counts air pollution and cigarette advertising ... . Yet the gross national product does not allow for the health of our children. It does not include the beauty of our poetry or the strength of our marriages ..."

Among politicians and citizen awareness is arising, that our planet Earth can't bear unlimited growth. In France President Sarkozy set up the "Commission on the Measurement of Economic Performance and Social Progress", led by Joseph Stiglitz and Amartya Sen (www.stiglitz-sen-fitoussi.fr). In Great Britain Tim Jackson (2009), a declared critic of growth was appointed chair of the Sustainable Development Commission.

Last the German Bundestag set up a respective study commission: "Because of facing uncertainties about developments in the economy ... are causing people anxiety, as are the dangers of climate change, the loss of biodiversity, ... and social inequality, the German Bundestag set up a Study Commission on 'Growth, Wellbeing and Quality of Life'." (German Bundestag 2010) The key question is how economy should shift within the natural boundaries of planet Earth. Going back to the roots of Economics adjusted to sustainable development, we may start with Aristotle (Barker 1995): He defines economics as the art of gaining a livelihood. (Marx 1887, p. 107) In contrast he described chrematistics as the art of making money and it seems as if this is what "Economy" is about today.

Asking for the sources of economics adjusted to sustainable development, of course we have to refer to K. Boulding (1966): In what he described as "spaceship economy", the aim is to minimise rather than maximise the consumption of energy and materials. It is concerned primarily with the care and maintenance of its stocks, so that every technological change which leads to less production and consumption is a definite gain. Joanna Macy (1991) drew our attention to another founder of sustainable economy: Gregory Bateson (2000). He analyzed the "Roots of Ecological Crisis" by 7 terms, e.g. "We live within an infinitely expanding 'frontier'", "Economic determinism is common sense." and "Technology will do it for us."

Nowadays we refer to N.Paech (2009); he proposes a "post-growth economy". A. Biesecker (2010) proposes the reformulation of (re) productivity with respect to sustainable relations both between society and nature and between the genders.

Transition to Spaceship Earth:
Steps to local Resilience

The grassroots network of communities called Transition Movement is working to build resilience in response to climate change, peak oil, and economic instability; it is partly based on the principles of permaculture and tied up to urban agriculture. (Hopkins 2008) We like to propose Transition as signpost onto this required survivable model of society. Transition and Resilience appear as societal alternative draft, becoming mission statement adaptable to activities aligned towards sustainable ways of being in the world. Central idea of Transition concepts is to make aliment goods available decentralized in local economic cycles. We propose to strengthen aspects of reuse and further use of goods in this concept. Therefore we like to give insight in detail to the project hikk - holz im kreativkreislauf (Wood in Creative Cycles).

Reflecting Peak-Oil or better Peak-Everything, local (economic) cycles are (re)arising in many places: energy supply is organized by local coops, Civil Society coops are running village shops, successful executives drop out and build up alternative production plants. (Jensen 2011).

BAUFACHFRAU e.V. an association of craftswomen, in the Berlin district Pankow enquired kubus for scientific monitoring and evaluating of the transdisciplinary project .hikk. This local network is focused on the use of rest wood from carpentry workshops and other woodworking businesses.

The network is built up by 6 carpentries, the Berlin based Kunsthochschule Berlin-Weissensee (College of Art) and Oberstufenzen-

trum Holztechnik (Vocational Training School on Woodworking) as well as furniture dealer inligna. .hikk illustrates how Science Shops can assist sustainable entrepreneurship. Between 2001 and 2005 kubus carried out a cooperation project and established a regionally-focused, decentralised network of companies for sustainability in ICT: the ReUse-Computer association (www.reuse-computer.de). Besides other kubus was working to establish the network ReUseVelo, dealing with the refurbishment of used bicycles. Based on these experiences kubus developed a so-called value conservation concept (Becker 2008).
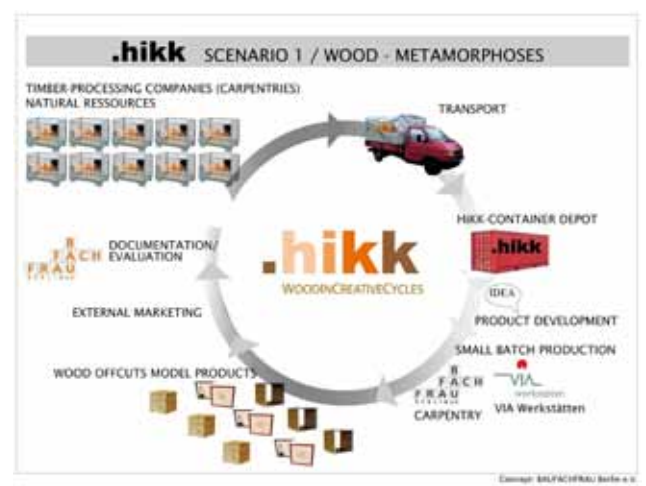
Approximately 440 m³/month of useable rest wood accumulate in 125 carpentries located in Pankow , currently used for thermal utilisation. Assumed an equivalent of 245 kg CO_2 per m³ chipboard the possible savings of GHG are about 107.000 kg CO_2/month! Based on our mainstream economics the reuse of this rest wood is uneconomic to the carpentry shops: new professional chipboard costs about 7,- Euro / m³.

From this point of departure .hikk outlined a pilot: for cost-efficient collection, storage and re-utilisation of leftover wood. It is used co-operatively for creatively designed products from leftover wood for batch productions. Corner stone is "Lotta Rest" (Figure 2), a modular multifunction cube, useable as stool, rack or table.
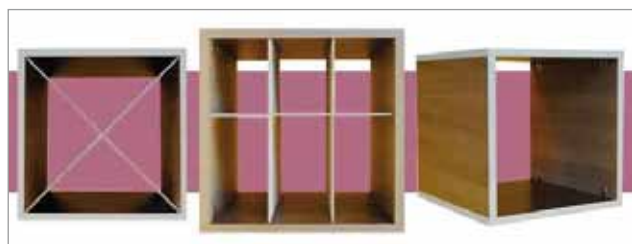

Figure 2

Even though the material is free of cost, Lotta Rest is non-competitive compared to staple article, e.g. by Ikea. Because local wages are higher and worldwide shipping is excessive low-cost a desirable concept - preservation and local further use of valuable semi-finished goods is under economic pressure.

On these terms the experiments of .hikk, establishing the pilot shown as scenario 1 (Figure 1) above are running in a transdisciplinary research project and can be considered as preparative. Once energy, shipping and resources in the course of Peak Oil are going to be dear priced, a feasible concept will be economically advantageous.

The ZeroWIN-project (http://www.zerowin.eu/) develops an innovative ZeroWASTE business model based on industrial symbiosis and is testing it in real cases of sustainable industrial networks. Results will translate the vision of sustainable development into elements of sustainable entrepreneurship, focusing at enhancing business opportunities.

The short-term project "Waste Bourse" was a ZeroWIN case study demonstrating a process and a structure for resource recovery strategies in regional industrial networks, thus enforcing industrial ecology and symbiosis. Basically the "Waste Bourse" is set up as a co-operation between kubus and a regional enterprise network "Großbeerenstraße" (http://www.netzwerk-grossbeerenstrasse.de). The core activity has been to identify waste and obsolete materials and (by-) products among the network members in order to enable re-use and recycling of the individual fractions like metals, paper/cardboard, used ICT appliances and wood off-cuts. Enabling further use phases means hereby to foster industrial symbiosis (Dietrich 2011).

Entrepreneurs on the way to local Resilience – A rocky Road

As shown in different research projects, the main risks in establishing sustainable and reuse businesses lies in the economic aspects (Becker 2009). In terms of Peak Oil, dump shipping and global price competition of labour (assembling a brand notebook in Asia costs about 2,- Euro!) it is "uneconomical" to handle local resources locally and to sell respective products. Enterprises, trying to do so, deal with higher manufacturing costs, purchase pricey semi-finished goods and can't assert mark-up on the market, because prices are defined by global players. If there is any marketable business model, companies are dealing with much less margin in comparison to competitors. Inligna, e.g. deals with 20% instead of 40 % minimum, normal in furniture retail sector.

Sustainable business concepts generate (or better internalize) several additional costs, borne in general by the entrepreneur. Time-consuming search concerning materials, certificates and sources of supply has to be done a new by each entrepreneur. As inligna started up in 2004 no FSC (www.fsc.org) certificated sawnwood was available in Berlin. Even in micro-enterprises burden has to be carried by the owner - by private capital, other sources or by precarious living conditions. Supplementary income sources are often normally - by partner for life, additional businesses, part-time work.

In contrast EC declares to assist sustainable businesses by funds. The WGBU advises local material cycles to carry out industrial symbiosis (WGBU 2011, pp. 136). Unfortunately available funds are insufficient to micro-enterprises, the declared baseline of future decentralised, local economy.

Finally there are many questions related to sustainable businesses, and it is easy to get lost in them for these micro-enterprise businessmen. Providing orientation concerning what the story really is about and asking the relevant questions is part of the role to be of Science Shops as well:

• Is solid wood from Eastern Europe more sustainable than coated chipboard from Austrian FSC-forest? (e.g. Bachelor Thesis?)
• How dangerous is waste-to-energy of the renewable residual product chipboard?
• How to develop my company towards sustainability?

Resilience, Reuse, and where are the required Concepts?

Our thesis is that in a decentralised, local economy reuse and repair will become more significant than today. Everybody might do more repair work by oneself. Accordingly the selling of new products will decrease. Maybe we need a new definition of our "basket of goods"? What in fact is indispensable to life?

Will we need rather favourable assembly kits made of Brandenburgian pine than luxuriousness furniture made of from European deciduous trees?

Tackling those challenges in a collaborative way is field-tested in many places in cooperatives, funded projects, even in stock corporations. But who gets these necessary feasible concepts started; we can switch over to seamless - when they will be economically advantageous, but not today? Community based research and service learning are adjusted approaches and can contribute to that.

If in future everyone will do repair work and possibly self producing: is the conventional, business-management organized enterprise adjusted to provide us with aliment goods? Do we need new pattern like Prosumenten- (agglutination term of producer and consumer by Peach) Gemeinschaft (community)?

Science Shop kubus
Contributing Transition to resilient Berlin

kubus, as an intermediary provides "socio-cultural translation" between different societal actors. This holistic approach with respect to cultural translation implies a cross-thematic background, e.g. to open up methodology and know-how of defence conversion (Cooley 1991 / Wainwright, Elliott 1982) for a conversion towards sustainable development. Based on the vision of establishing open source field laboratories for Transition and Resilience constituted as local cooperatives and accessible to start ups and entrepreneurs convinced to sustainable development the following elements might be stepping stones to renew the role of Science Shops:

ReUse-Logistics

Based on the .hikk project BAUFACHFRAU e.V. and kubus developed the "One Stepp Beyond"-concept note (business model, focused on sustainable development). Using different sales channels, e.g. a showroom and online store the Lotta-Rest concept (scenario 1) will be reviewed and improved hands-on. Experiences / results can be compared with similar projects. Experiences and results will be used for imperative policy briefing concerning legal, economic and fiscal aspects of sustainable entrepreneurship on national and European level.

Exposition "Local Sustainable Economy"

Science Shop kubus intends to organize an exposition; local businessmen and scientists acting in areas of sustainable development will be invited. Interlinking activists of sustainability of different societal areas is scheduled. Fostering fruitful cooperation for mutual benefit is the commitment of kubus.

It is intended to initiate forums and workshops for hands-on project development. This concept is based on the design of Industriegesprächen (Industrial dialogues) of the innonetz Berlin project (www.innonetz-berlin.de).

Work Shops Of Self-help

Related to Transition initiatives in Berlin kubus intends to support the development of civil society oriented work shops of self-help. Elements of interlinking science and society might be the Project Laboratories of Technische Universität Berlin and Thinkfarm concept. "Project Laboratories for socially and ecologically useful thinking und acting" give students the opportunity to self dependently work on practical and innovative projects. The general orientation for the projects is a socially useful, environment-friendly science and technology. Any students who can find enough interested other students can realize these project labs. "Thinkfarm" is a concept developed by young scientists of Netzwerk Wachstumswende (network aftermath of growth). The idea is, to interlink theoretical work and practical activities in terms of aftermath of growth. http://wachstumswende.de/

Web Links

List of initiatives in D/A/CH: http://www.transition-initiativen.de/page/aktuelle-transition-inis

Transition Berlin: http://www.transitiontown-friedrichshain-kreuzberg.de/TransitionBerlin/transitionberlin-map.html

Rob Hopkins, founder of Transition Movement, on Peak Oil and dynamics of Transition-Town-Projects: http://www.kontext-tv.de/node/21

"Voices of Transition" trailer: http://vimeo.com/12325469

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"Spreading more than just manure: Idea generation between scientists & agricultural producers"

by Chantal Phillips, MLIS University of Guelph Ridgetown Campus, OAC; Helen HamblyOdame PhD.; NaelThaher, MSc.,SEDRD OAC, University of Guelph, Canada.

Researchers are often challenged by the lack of community engagement which affects the uptake of research results and reduces the potential for impact on civil society and good governance. According to the Coherence for International Agricultural Research and Development (CIARD) access to research outputs "... by all actors in agricultural research and innovation is essential both to enable effective decision-making and to empower those concerned with agricultural production and food security". How can we do a better job across all academic disciplines and take up this challenge?

Idea Generation and Positive Feedback

Good ideas are like fertilizer. The right amount can do a lot of good. In the creation of a similar virtuous circle between commercial production, civil society and science, it is important to identify the elements required to encourage a continuing research cycle. There are several types of professional bias which exist in the research cycle which increase negative feedback and impede the generation of ideas that are relevant to decision-making. Therefore, it is wise to identify bias and reduce its' consequences. Participatory models of research design and implementation have a long history of increasing community engagement for civil society empowerment(World Bank, 1996). The use of participatory methods in agricultural extension is well established and reaps positive rewards in terms of developing good research questions, practical research design with partnerships among producers and industry as well as tightly enmeshed knowledge translation and transfer methods that engage organizations in dialogue and practice related to scientific research results (Brown et al, 2002).

Project Description

The University of Guelph Ridgetown Campus produces reports on a variety of topics for local agri-food industries funded by the Ontario Ministry of Agriculture, Food and Rural Affairs(OMAFRA) alongside producer groups, seed companies and other commercial interests. Research questions are generated from stakeholders in agri-food initiatives. Experimental trials and case studies are carried out at research stations or in partnership with local producers. Breakfast meetings, blogs, web pages, Facebook and SMS text messages all contribute to the flow of ideas between the agri-food producers, the ministry staff and researchers each year as challenges of growing, harvesting and marketing are met by famers.

The example of the Ontario Vegetable Crop Research Electronic Repository is a pilot collection designed to support the ongoing dialogue with evidence based practice. The research project funded by the Ontario provincial government "Open Access and Copyright Issues Related to Knowledge Translation and Transfer for the OMAFRA-UofG Partnership" is designed to further deepen the relationship by determining policy for licensing research reports and placing them in the public domain for on-line access. The Canadian open data movement is growing at all levels of government and this project will support the provincial government in using open access policies to provide greater access and use of tax payer funded research (Baker, 2011). Licensing the products of research such as reports, journal articles and other publications for open access allows others to use and re-use the information and data without infringing copyright. Intellectual property agreements nationally and internationally can be respected while authors determine if their research is free to use with attribution from the time of publication or after an embargo period to allow for publication in commercial scientific journals. Intellectual property rights in the past have often been held by journal publishers, but a large number of scientists are now turning to open access sources such as PLoS ONE making it arguably the world's largest journal as of spring 2011 (Morrison, 2011). Open access licensing puts new discoveries in the public sphere without barriers due to high subscription costs, and increases the ability of others to use the knowledge generated to create new research and enable applied scientific efforts, as in the field of agri-food development.

Knowledge Translation and Transfer

The Pull Factor. Who is driving the tractor? Scientist or Farmer?
This participatory research process is driven by the demands of farmers and producers. Applied science can respond to questions driven by real world needs when it is led by the specific needs of information users. Researchers are best placed to engage civil society organizations, research networks and a variety of specialists to explore the problem once it has been identified and described by the farmer. Testing potential solutions in case studies and through experimentation can also occur with partnerships that include agri-food stakeholders. The specialist knowledge of the academic is strengthened by the local and specific expertise in these partnerships.

The need for this Ontario Vegetable Crop Research Report Repository was driven by an agricultural extension worker who provides information on agricultural innovation and successful farming techniques. Evidence based practice is found in the research reports produced each year but not available as scientific

articles or published formally outside the realm of presentations and meetings held with producer groups.

The Transfer Mechanism. How do we get good information into the public sphere ?

Because the reports are currently uncollected for public use and unlicensed for electronic dissemination it is difficult to find and use the results for better farming practice. The process through which the users of information receive results is crucial to reducing negative feedback within the system of information transfer. While the system of agricultural extension supports the presentation of research each year there is no method for retrieving good results from previous years or comparing new research with older data sets and reports.

The Content. How rich is the manure ? Can the results fertilize the process ?

Traditionally there have been barriers between farmers sceptical of research results. Research agendas of academics often exist outside of agri-food production. This repository has highlighted reports generated with producer engagement. The reports were stored without a public access policy and are now being drawn into use due to their practical applicability. This pull factor increases the likelihood that the collection will contribute to future use of scientific results. But the collection is vulnerable to being placed online without user input. The project has tested the first 50 reports and is looking to increase the accessibility of the collection with the input of agricultural extension agents so that it is increasingly user-friendly.

It is also apparent that the use of intermediaries such as agricultural extension officers is necessary to extract the most relevant information from reports and transfer it through methods that meet user needs such as conference presentations, social media and SMS text messages. The transformation of reports into formats that are user friendly is developing as extension officers and researchers continue the dialogue with producers using the methods which users of information adopt.
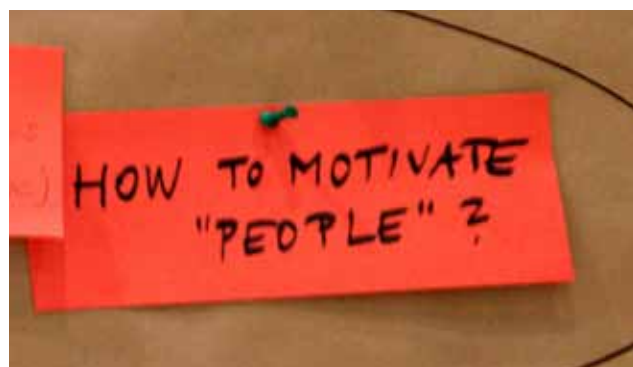
Participatory Methodologies and Participatory Practices

The implementation of participatory rural development models such as Rapid Rural Appraisal (RRA), Participatory Learning and Action (PLA) have had widespread impact in over 100 coutries and are used by almost all international non-governmental agencies (Chambers, 2007). It is argued that the use of the participatory methodologies has helped motivate rural development workers, and instil a spirit of enquiry in support agencies and encouraged the poor in data collection and the direction of project initiatives (Brown, et al, 2002). It is useful to look at how some of these positive results might be transferred to other types

of scientific and civil society collaborative efforts. A result could be the increased uptake of scientific and evidenced based practice (World Bank, 1996). In order to adopt methods that are more participatory it is helpful to reduce bias which impedes participation and clear communication.

Spatial Bias

The academic more often resides in an urban environment of privilege and can be blind to rural, disadvantaged and poor realities that impact the project from the start. For example, whose sense of space and mapping controls the boundaries of the project area? Outsiders are unlikely to have the same level of knowledge as members of the community who have years of experience and are rich sources of potential solutions.

Who owns the products of the research project? If the research endeavour requires mapping who identifies what is to be mapped? A dialogue among stakeholders can build a mapping process that meets the needs of a broad range of stakeholders and creates a rich source of information for both community and research needs into the future.

Project Bias

We often pass through the project environment over a short period of time. This has an impact on how the project is designed and how long we are able to provide an intervention or offer project benefits. The initial planning stage needs to answer questions such as who owns the project outputs? Who has access to this information and why? What benefits are there for those who generated the knowledge and information shared ? Community engagement can be increased if there are clear benefits that will last and be shared in the community.

Personal Bias

As mentioned above research team members and project staff do not often occupy the same space as those who live and work in the project area. It is not often easy to identify marginalized groups and much easier to make alliances with local elites. Who is not participating in the project? Creating an accurate picture of the whole community requires moving beyond those who are easiest to engage and reaching out to people who are not part of our social or professional class. Using tools that encourage community members themselves to identify who is in greatest need can assist in developing new contacts.

Gender is another factor that can influence results. Is there a chance that women and men experience things differently in the project environment? Is there a likelihood that informants will give different responses to female or male staff? How can results be gathered that reflect gender roles and benefit both women and men?

Seasonal Bias

The work life of academics can follow a semester schedule that differs from the high and low cycle of activity in other spheres. In agriculture it is often the case that participation in research depends on the seasonal activities of farmers and the dissemination of research results or the collection of data needs to follow the seasons appropriately or there will be little engagement, poor response rates and a lack of uptake of results. In other areas of engagement there are similar unknowns which can be discovered. Will school holidays effect participation in research? Are there religious or cultural traditions which will exclude participation

or skew participants' behaviour? Creating a timeline of events that can be foreseen but may be unknown to project staff is important.

Diplomatic Bias

Asking questions about situations that are problems, particularly of the poor or marginalized can be embarrassing and difficult. Generally, people do not want to offer responses that may seem unfavourable to the researcher. What techniques can reduce the likelihood of responses being inaccurate due to the difficulty of discussing problems and failures? Using multiple sources for information, pairing informants reflections with observation of behaviours, using group as well as individual responses all help to reduce the bias inherent in collecting data on topics that carry stigma and other variables that are not obvious to outsiders.

Professional Bias

The narrow view of a research question held by a specialist in one field can often reduce the validity of the results for a community. What a forester sees in a woodlot is not what a cultural geographer or an environmentalist or a maple syrup producer sees. The creation of a space for a variety of perspectives to inform the research project is important to develop from the start. Professional hierarchies are usually replicated in meeting spaces and agendas. The use of a head table in meetings, for example, can visually represent the power of those seated there facing others who are perceived as less powerful. Is the agenda open to review by participants?

Indigenous knowledge and local experts can generate three-dimensional models which capture their realities in more complexity than specialists. Many instances of crowd-sourcing data for wildlife now exist and have given us a view of greater complexity and diversity in the world.

A review of the biases noted above held is a simple tool to implement at the project outset. It has been proven effective in a variety of rural and development projects to increase community engagement and motivate project partners (Brown et al, 2002). Due to their successful use in the field on international development participatory methodologies have been evolving over time among international non-governmental organizations. More recently these methodologies are referred to as civil participation and engagement strategies, such as those of the World Bank Learning Group which produced The World Bank Participation Sourcebook (World Bank 1996).

The Ontario Vegetable Crop Research Report Electronic Repository is using some of the techniques in participatory methodologies and is making available results generated by stakeholders for re-use and recycling. The results hoped for include an increasingly fertile ground for new research collaboration and another generation of productive collaborations.

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Green Summer in Freiburg

by Elizabeth Tryon, University of Wisconsin-Madison, USA

Home to the third largest research portfolio in the country and funded partially by public resources, the University of Wisconsin-Madison (UW) has a responsibility to enhance quality of life at the local, state, national and global level. Education at UW is also informed by the special mandate of land grant universities, making possible a broad multi-sector initiative for health and well-being that embraces food security, access to water, energy solutions, preventive and curative health research and services, and environmental care. Further, UW's tradition of public service, for the last 100 years expressed as "the Wisconsin Idea" - a call to ensure that the resources of our public university are extended to the boundaries of the state - points toward an impact orientation that emphasizes putting discovery into practice to benefit society (McCarthy, 1912).

In the 21st century, the UW finds itself in an increasingly interconnected world, positioned to address many challenges and opportunities related to human flourishing and care of the earth. Therefore the new "Wisconsin without Borders" (WWB) Initiative draws on the history and values of the Wisconsin Idea and expands it to catalyze campus-wide research and action to effectively address complex global challenges to the health and wellbeing of humans, animals and the environment. The effort builds on and complements existing institutional strengths, fostering an organizational culture that encourages faculty and students to traverse disciplinary and geographic boundaries.

WWB is a conceptual framework that works synergistically with a number of programs already underway at our institution. WWB realizes coordination, synergies, community building, and campus-wide engagement through the following activities, and managed by a partnership between the Morgridge Center for Public Service and the UW Global Health Institute: 1) innovative classroom instruction, 2) seminars and colloquia that champion, explore and critique cutting-edge ideas, 3) small grants for credit-based service learning, 4) research across disciplines and at all levels from undergraduates through dissertators, and including support for faculty research, and 5) rigorous evaluation and outcome assessment.

Overall, WWB projects are grounded in rigorous academic preparation, and carried out with an emphasis on mutually beneficial partnerships. Special attention is given to ensure that activities are coordinated well with government and civil society partners, and that, in addition to attention to discovery of new solutions, WWB efforts will follow through to discern policy implications and encourage scale-up of successful efforts. The global focus operates within a framework of environmental sustainability, equitable distribution of resources, and inter-generational justice.

International sites where faculty and students have already begin to explore or implement exciting interdisciplinary partnerships include Rwanda, Uganda, Kenya, Malawi, Senegal, Tanzania, Zambia, Ecuador, Mexico, Brazil, Colombia, El Salvador, Haiti, Nicaragua, India, China, Sri Lanka, and Thailand. These projects address needs ranging from water and sanitation to health care services to education to environmental care. Interdisciplinary teams are supported with mentoring and financing to do research or service learning, usually in developing countries, and faculty and staff share experience as a joint learning community to collaborate on projects including water filtration, reproductive health, malaria prevention, women's microfinance

and even a "homegrown school lunch" program - a new kitchen, garden and a piggery.

In a reversal of that dynamic of distributing U.S. expertise, one team of 15 UW students participated in the summer of 2011 in a pilot program that explored a creative new angle to an old sister-city relationship with Madison's "GreenCity" sister, Freiburg, Germany. For over 45 years, UW-Madison has had an academic exchange with Albert Ludwig University in Freiburg. Normally, students exchange there for a full academic year, with the emphasis on immersion in German language, history and culture. Knowing that Freiburg has been called the "Solar Capital of the EU" (Freiburg FWTM) and that nearly 40% of its power needs are furnished by renewable sources, it seemed that UW students could learn much by studying the example of how Freiburg leaped ahead in the global arena of sustainability. By allowing students access to government and business partners in Freiburg cultivated over many years by the author and a community partner in Madison with family ties there, Ted Petith, this pilot program increased co-production of knowledge on both sides of the Atlantic while immersing students in an intensive Green learning environment. In order to achieve reciprocity as sister-cities, Freiburg leaders charged students with bringing back knowledge of their advanced technologies to inform decisions about sustainability initiatives in Madison, for two reasons: to establish business partnerships for their Green Business Cluster with Madison-based stakeholders; and as a globally recognized leader in sustainability, a commitment to help their sister-cities move from incremental to transformational change. Students lived for the summer in the sustainable neighborhood of Vauban, experiencing firsthand the efficiencies of the multi-modal transport system, sophisticated biowaste collection, and car-free living amidst green space and passive housing, while meeting and living with German and other international students. This allowed a cultural exchange on a new level. The Madison students realized that they were able to act as ambassadors for the sustainable movement in the US and dispel myths of American ignorance of anything Green. In interactions with their roommates, the European students expressed shock that the Madison contingent was knowledgeable about composting and recycling. By the same token, UW students were able to converse with their European counterparts about how Green policies and behavior have been embedded in Freiburg and beyond for many years and strategies for bringing Madison forward in the same manner.

Activities of this student cohort ranged far and wide. The City of Freiburg generously funded and coordinated visits to solar factories and settlements, passive-house high-rises and complexes, and educational facilities. Part of the summer exchange included completion of an Environmental Economics class at University of Freiburg where students learned how feed-in tarifs and other government policies have incentivized renewable energy investment in Freiburg and the rest of Germany. As a service-learning project, students volunteered with the city parks department in a program bringing citizens together to plant trees, clean streambeds, and maintain park equipment. Engineering students shadowed a passiv-haus architect and participated on a solar research team at the Fraunhofer ISE. Others inventoried greenspaces, provided English website translations, and videotaped interviews with various Green economy professionals for a documentary. The service opportunities became a research platform for interviews of residents

about integration of sustainability into the fabric of daily life. They also posted blog updates for students in Wisconsin to read.

In fulfillment of the goal of reciprocation, this integrated knowledge is currently being disseminated to the City of Madison's Sustainable Engineering Department, the Gaylord Nelson Institute, and other local groups and businesses. For the Summer of 2012, a course will be taught in Madison utilizing visiting lecturers from Freiburg who are experts in the renewable energy and sustainability field. The goal of the exchange will be implementing Freiburg ideas ranging from a passive-house apartment building in a low-income neighborhood, to campus strategies to lesson environmental impact of the university's footprint. This expansion of the WWB pilot may have long-reaching effects on student career goals and has already been tremendously impactful on student awareness and learning. The hope at the UW-Madison is that new educational and business partnerships will arise to complement the established ties between the two cities and deepen the quality of the relationship in ways that are mutually beneficial.

As part of the Wisconsin Without Borders Initiative, GreenSummer Freiburg is showing great promise as a model, presenting information at the WWB seminars and showcasing project findings for other scholars to study.

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University-Community Links in California, Barcelona, and Augsburg: Participatory action research in, for, and through local and international learning communities

by Tom C. Vogt, University of Augsburg

Good afternoon ladies and gentlemen and thank you for this opportunity to talk about 'University-Community Links' projects in California, Barcelona, and Augsburg. I teach a "Local and International Learning Communities" Seminar at the University of Augsburg. We work together with three local schools and two community centers, planning, coordinating, and producing films and music videos. On the university side, we start each semester off with a more or less traditional lecture, introducing the university students to the projects and discussing the basic principles of Participatory Action Research, starting with the crucial ideas of learning through active participation (Dewey 1916, Moll 1993), designing for sustainability (Engström 1999, Vogt 2010) and culture as aesthetic production (Dewey 1934, Vygotsky 1926). After the first lecture, I then podcast all of my subsequent lectures, so that the university students have the time to actually go out into the schools and community centers and work with local youth. To help manage the projects, we use 'Digicampus' (www.digicampus.de), a moodle-like interface, to communicate about ongoing activites, reserve video equipment, share fieldnotes, and openly discuss podcasted lectures and reading materials.

The student fieldnotes function both microgenetically, showing how concrete learning scenarios play out in real time, and macrogenetically, showing how the projects themselves develop institutionally over comparatively longer stretches of time. Our "Begleitstudium" enables university students to continue working in the projects for up to three additional semesters after taking the initial Seminar (see http://begleitstudium.imb-uni-augsburg.de). This helps us to form 'Project Coordinator' positions for highly motivated university students and to develop new projects in the Augsburg area. Our website, www.5DDAugsburg.de, is completely designed and maintained by university students, while our facebook group, "5D - Augsburg", facilitates international communication and is especially useful in initiating and planning student exchange activities with the University of California.

"University-Community Links" projects in California

Our projects in Augsburg are part of an international network of projects dedicated to using educational technologies and social media for the benefit of youth development. Historically, the projects developed in California, through the University of California system (see http://uclinks.berkeley.edu). In the early 1990's, about twenty years ago, The University of California in San Diego started up an innovative partnership between its Human Development Department and a nearby, predominantly Latino neighbourhood, "Eden Gardens" (Vásquez 2003). The purpose of this partnership was to create a sustainable Participatory Action Research project dedicated to promoting social and cognitive development with local youth and their families. The project was called "La Clase Mágica", which translates into English as "The Magic Classroom". As time went on, La Clase Mágica, under the leadership of Professor Olga Vásquez (www-tep.ucsd.edu/people/faculty/vasquez.shtml), developed into a very vibrant form of multicultural education where bilingual youth were encouraged to continue developing their Spanish language skills and connections to Latino culture, and, at the same time, develop the social and academic skills necessary for success in mainstream academic culture.

Meanwhile, Charles Underwood, an Anthropologist at the University of California in Berkeley, took note of the fact that La Clase Mágica was a big hit. With funding from the Andrew Mellon Foundation (www.mellon.org), he, Vásquez, and their colleagues throughout the University of California system, created "University-Community Links", or "UC Links" for short, making it possible for other universities to form Participatory Action Research partnerships with schools and community centers all over California. As a result, we now have over 30 UC Links Projects throughout California involving 10 Universities (see http://uclinks.berkeley.edu). La Clase Mágica is still going strong, due largely to the efforts of Prof. Vásquez, who has created nothing less than a Participatory Action Research Model for anyone

interested in empowering intercultural education (see Vásquez, 2003, Duran 1995, Moll 1993).

Our projects in Barcelona are also robustly intercultural, working with Roma children and their families in both school and community center contexts (see www.5DBarcelona.org) Through the Barcelona, site we will also be starting up another UC Links project in Seville in June. We think that these kinds of activities are examples of win-win partnerships between universities, schools, and community centers. My students are constantly telling me how much they appreciate the opportunities to connect social learning theory to concrete educational practices. At the schools in Augsburg, we see a positive transformation of youth motivation levels and forms of engagement through authentic literacy, media competencies, and learning to work together. We are continually developing the projects at local, national, and international levels (e.g. www.iscar2011.org), and look forward to your questions, comments, and also, hopefully, to some flexible, open, and sustainable forms of cooperation.

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The Shaping and Impacts of Network Alliances between Science Shops and Civil Society

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Introduction and methodology

The paper is based on the PhD project The Making of Citizen Science – Network Alliances between Science Shops and CSOs Engaging in Science and Air Pollution. The research aimed at understanding how CSOs through alliance building and network constructions with Science Shops and similar community-based research units, engage with scientists in order to obtain influence on air pollution problems and their mitigation.

The analytical approach is inspired by Science and Technology Studies (STS) in general, more specifically by the Actor-Network Theory and Callon's (1986a) sociology of translations, since this theoretical approach contributes to understanding why and how actors seek to stabilize controversies, as well as the mechanisms contributing to the success in affecting the problems experienced by the CSOs.

The research was based on what Yin (2003: p. 47) calls multiple case studies. Eight cases of co-operation between CSOs, Science Shops and air pollution scientists were analysed in order to understand how these network alliances were shaped and what kind of influence the alliances gained on the CSOs issue of concern. The eight cases show different forms of influence as well as different approaches applied by the involved Science Shops. The cases are described in brief in the table below. For more in-depth description see Brodersen (2010).

Discussion

Background and Impact of the Network Alliances between CSOs, Science Shops and Scientists: The case studies show how different types of air pollution sources cause CSOs to engage with Science Shops and scientists. These sources of pollution were related to infrastructure (car, truck and aviation traffic), industrial activities, and fellow residents' own behaviour. The various pollution problems and sources of the pollution involved different actors, including industry, local authorities, farmers and citizens. In some cases, the citizens represented in the CSOs were neighbours experiencing the problems, whereas in other cases the CSOs represented users or citizens in general. Some network alliances between CSOs, Science Shops and scientists tried to affect problems here-and-now, while others work to affect problems that are part of the CSOs' on-going efforts to influence societal agendas, like the car traffic's impacts on bicyclists. The effects directly linked to the CSOs' original problems were:

- Avoiding the construction of a public school building close to a motorway;
- Reducing pollution from industrial activities;
- Developing an apparatus for measuring air pollution in cities a long biking routes;
- Avoiding an increase in exposure to air pollution from transport activities.

The case studies also showed that such network alliances can cause other forms of effects than direct effects on the CSOs' original problems. The other effects observed were for example increased awareness about the issue in question among politicians, scientists and industry, and influence on research agendas, . These other effects were observed, both in cases where the CSOs' original problems were affected as well as in cases without affect.

	The CSOs problem	The CSOs knowledge need	Science Shop approach	Effect on the CSOs problem	Other effects due to network activities
The parent group case (case A), Science Shop for Biology, Utrecht University, NL	Avoid construction of school building near a highway due to concern about the children's exposure to traffic emissions.	Scientific documentation of the assumed problem.	Mediation. Project carried out by a student.	School not constructed, though it is unclear whether this was due to the network's activities.	Scientists obtained new updated data indicating a relationship between traffic emissions and children's health.
The pesticide case (Case B), Science Shop for Biology, Utrecht University, NL	Concerns about health impact on humans from airborne pesticides.	Scientific documentation of the assumed problem.	Mediation, Project carried out by a student.	None. Due to lack of trust in the results from the project and the controversial character of the problem in a farming area	Emerging interest among scientists; a PhD project was initiated.
The Scania case (Case C), Science Shop Chemistry, University of Groningen, NL	Concerns about odour pollution from planned industrial activities in the community.	Scientific documentation of the assumed problem.	Impact-seeking. Project carried out by the Science Shop.	Odour emissions avoided through installment of a burning unit. Odour emissions reduced to within permitted limits.	Local experiences with odour pollution disseminated within a national odour platform.
The carpet factory case (Case D), Science Shop Chemistry, University of Groningen, NL	Concerns that toxicity from industrial activities in the community cause risks of cancer, odour pollution and water pollution.	Scientific documentation of the assumed problem.	Impact-seeking. Project carried out by the Science Shop.	Implementation of a complaint telephone to be used to report peaks in odour pollution from carpet factory activities. Toxicity and water pollution not researched.	Carpet factories got interested in further co-operation with both the community and the Science Shop.
The board game case (case E), Science Shop for Economics, University of Groningen, NL	Need for scientific documentation indicating sustainable transition possibilities for the aviation sector.	Scientific considerations about transition possibilities for the aviation industry.	Mediation. Project carried out by a student.	Contribute to societal discussions about the possibilities of transition in the aviation industry.	Emerging interest within the scientific community about using board games as simulation models.
The bicycle apparatus case (case F), Science Shop for Biology, Utrecht University, NL	Develop an apparatus to measure road and air quality on bicycle paths.	Assistance to construct the needed apparatus.	Mediation. Project carried out by a student.	An apparatus developed and used by the CSO in their activities.	Measurements in 5 major cities in EU as part of an EU-funded research project.
The stove case (case G), Science Shop DTU, Technical University of Denmark	Concerns about whether residents in the community were exposed to air pollution from their stove use.	Scientific documentation of the assumed problem.	Mediation. Project carried out by a student.	None. Due to the community organization's lacking use of the results since they were not based on measurements and the issue was controversial.	Science Shop tried to include the community case in a research project.
The Mira Loma case (case H)	Wanted to stop air pollution in Mira Loma caused by warehouse activities.	Scientific documentation of the assumed problem.	Initially: dissemination of knowledge. Later, after developing the co-operation with the CSO: Impact-seeking.	Further warehouse development in Mira Loma was stopped.	Scientific evidence on relationship between truck traffic and children's health.
Guidelines developed for future warehouse activities (case I).			Research carried out by both the scientists and members of the CSO.		Guidelines for future warehouse activities
The Community Outreach Unit, The School of Medicine, University of Southern California, USA					Citizens employed by CSO as community organizers. Citizen education programmes in poor communities on civil and environmental rights. Agreement between CSO and scientists about a new partnership about goods distribution.

Table 1: Overview of the case studies in relation to type of problems, types of knowledge needs, approach applied by Science Shops and effects of the activities

Three Complexities in relation to Scientific Documentation: The case studies have shown that CSOs in several cases have the perception that in order to give their problem legitimacy, they need independent scientific evidence to support their claim. This perception may be based on the perception that scientific documentation to politicians and scientists reflects 'reality', free of the influence of subjective assumptions, and that scientific documentation cannot be questioned or contested. This perception seems to be widely accepted even though history presents many examples showing that science does not produce ultimate answers. The controversies around nuclear power and genetically modified crops are examples of controversial scientific research.. Thus, scientific knowledge in itself does not provide a non-contestable truth. Nevertheless, it is clear from the case studies that scientific documentation is a central factor, when CSOs engage in network alliances with Science Shops and scientists. The case studies identified three complexities with scientific documentation and its use as a means to legitimize problems in Science Shop projects:

1) The methods applied to document the concern fails to provide documentation;
2) The chosen methods do not support the CSO concerns – due to the limited resources available for sampling, analyses etc.;
3) The concerns of the CSOs are documented, but the results are contested, because they are perceived as threats to on-going or planned activities by other actors, who therefore use resources to contest the applied methods and assumptions.

These three complexities indicate that scientific documentation in itself is not enough to strengthen the influence of the CSOs; something more is necessary.

Requirements to the Science Shop and Scientists involved in Science Shop Research

It is essential that Science Shop scientists and other involved scientists (such as supervisors and/or researchers) are willing to engage in the issue of CSO influence and not only rely on that a scientific report (whether the report is produced by scientists or students) will enable the CSO to open a discussion on the issue in focus. This also implies that CSOs' wish to document a problem scientifically may not be a sufficient strategy for influence. The Science Shop scientists and other involved scientists should involve in discussions about the assumptions behind scientific documentation and how CSOs can use the results when trying to influence the decisions of government, industry etc. For this process to succeed, the approach the Science Shops should apply could be impact-seeking. This conclusion raises a dilemma, since the resources available for some impact-seeking Science Shops, ,like the Science Shops at University of Groningen and at Technical University of Denmark)have been reduced. Despite this dilemma, this approach provides the best opportunities, if Science Shops want to contribute to the CSOs' capabilities. To apply this approach the Science Shop should involve itself in the interpretation of the data and facilitate dialogue process with industry, public authorities etc. Depending on the type of Science Shop, this role may also imply assuming responsibility for the research, as either researcher or supervisor. Given the challenges facing some impact-seeking Science Shops, another option could be to develop the Science Shop's mediation approach so that the Science Shops engage scientists and supervisors in discussions of research assumptions and methodologies and the usability of the results.

That Science Shops and scientists should reconsider their role and their willingness to become involved in the CSOs' issues of concern, beyond the production of scientific documentation, is an interesting conclusion, since other studies with focus on science-for-policy seem to indicate the same. Jasanoff (1995), for example, concludes an analysis of science and policy by emphasizing: "Both scientists and policy-makers, therefore, must participate in the process of resolving disputes over regulatory science" (Jasanoff, 1995; p. 292). Although Jasanoff has her focus on the relation between science and governmental policy, whereas our focus is on CSOs' opportunities for influence, the point is the same in relation to the role of the scientists: scientists need to cross the line between producing the knowledge as black-boxed results and contributing to negotiations of the interpretation of the results. Jasanoff (1995) argues that scientific results may not be used or agreed upon, because the basis for the scientific results are questioned by others; and if the scientists are not willing to enter into negotiations about the basis for the results, one effect can be that the results are useless.

Other Elements Contributing to Successful Alliances between CSOs, Science Shops and Scientists

The case studies also show that the framing and translation of a CSO request to a Science Shop into a research question may be decisive for the success of the network co-operation. The challenge lies in framing research questions in such a way that they become interesting for researchers as scientists and supervisors. This requires suiting requests to curricular activities or to research agendas without distorting them so that they are no longer recognizable to the CSOs. The case studies indicate the Science Shops play an important role in this framing and translation of CSO requests to ensure that the research question suits both parts.

The case studies also show that Science Shop projects can contribute to new data opportunities, as seen in the parent group case, where the scientists' accepted being enrolled in the network due to the opportunity to gather new data about a subject researched years before. Another important aspect is publication opportunities. Publication possibilities seem to be an important factor for scientists when they decide whether to to cooperate with Science Shops and CSOs as also shown in the INTERACTS project (Jørgensen et al., 2004). The research has to be of such character that afterwards the researchers can use the produced knowledge in scientific publications, since it is on this basis universities evaluate the work of scientists.

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Killing more than two birds with one stone: Learning statistics while doing community research, an example of good practice for first year undergraduate students

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In fulfilment of the requirements for their degree, students often have to take the subject 'research methods and statistics'. However, methods and statistics is not their favourite topic, as they fail to see the added value of statistics for society, or for their future career. In order to show students how research results are put into use in the immediate region, community based research projects were introduced at the Roosevelt Academy, a small scale undergraduate college in the Netherlands. The advantages of these projects are multi-fold. First of all, it is important to transfer knowledge to the immediate region, also known as 'valorisation', thereby also obtaining regional embeddedness. Secondly, the regional science shop aims to serve as a research lab for all undergraduate students from their first to their senior year in college. After participating in a community project students value statistics better, they gain higher self-confidence and they obtain higher grades. Moreover, they see its future usefulness. The success formula was expanded to sophomore and senior projects, such as academic internships, independent research projects and honours theses.

Introduction

When entering university life, statistics is a necessary step to overcome, for it is a mandatory course for many first year undergraduate students. In general students dislike statistical topics, it frightens them to work with formulas and they do not see the added value of statistics for their future career (Smith 1998; Thompson 2009; Verhoeven 2009). One way of making statistics (and research methods) attractive is by organizing student projects (Hydorn 2007). It is a way to hit two birds with one stone: students learn to practice research methods and statistics in every day life and they learn to appreciate the added value of statistical outcomes in society. However, as will be argued in this paper, the advantage is multi-fold if a science shop is involved, as the immediate region also benefits from research results and a knowledge transfer is established. Much to the example of science shops throughout the Netherlands, Roosevelt Academy founded her Institute for Undergraduate Research (IUR) 'Eleanor' in 2010, after a pilot period of approximately 3 years. The aim was not only to facilitate student 'learning on the job' but to also to create a working relation between a knowledge-institute and provincial citizens who needed answers to their research questions (Leydesdorff & Ward 2005). IUR Eleanor carries out third-party research for (non) profit-organisations and NGO's

in the region of Zeeland, thereby the segment of community based projects is rather small. This organizational structure derives from the small scaled-ness of the college, which makes a combined project organization inevitable. Since her foundation, IUR Eleanor has carried out many research projects, using both qualitative and quantitative methods, such as in-depth interviewing, survey, secondary analysis, literature research, focus groups and observation.

Foundations of community based projects

Community research projects are problem based, and they mostly have a trans-disciplinary character. First of all, inside the research institute supervision takes place from several disciplinary angles (e.g. public health projects can be supervised by a psychologist, an epidemiologist and a statistician). Secondly, by appointing additional supervisors from the organizations under study, the collaboration between policy makers, managers, students and expert researchers offers a unique learning experience and exchange of knowledge at all levels and for all those involved. Experiencing the process of doing applied research prepares the students well for their future careers, more so because additional academic skills (e.g. communication, management) are attained. In sum, students learn research skills, they experience the added value of research results for the immediate society and they become better prepared for their future careers. Organizing student research projects from the first year on has many advantages. Firstly, group projects can deepen the students' understanding of statistics, it increases their interest in statistical topics and they learn the usefulness to making business decisions based on statistical results (Sisto 2009). The learning goals that underpin these projects are: students learn how to correctly apply statistical techniques to societal and business situations; they learn how to interpret results and develop recommendations, how to communicate the results, and how to effectively collaborate in small groups. Additionally, group projects may be based in the direct community, thereby strengthening the students' embeddedness in society. This urges students to think beyond the box and not only focus on empirical questions but also on questions as to how research results can be used beneficially for the community, i.e. knowledge transfer. The theoretical basis for this approach lies in constructivist theories (Thompson 2009), whereby active engagement of students in real-world problems provides the necessary motivation and interest, it draws on past experiences and it provides that part of 'relevance' to the outside world. With this approach students do not stay within the walls of their classroom and, in later academic life, also engage in community-based projects.

Project Procedure

During their first year of college, all students take Introduction to Methods & Statistics and that always includes a small research pro-

ject. In most cases, students think of a suitable research question that can be answered by means of a small survey or experiment. They hand in a research proposal and, under supervision of their instructor, they set up the research project. Besides, students can sign up for one of the external projects, offered by means of the undergraduate institute at the college (i.e. Science Shop).

Firstly, research questions from regional (non) profit organisations are assessed to fit to the level of first year students. This is done during an intake interview with the prospective client, in the presence of the Science Shop coordinator. The research question is then, with permission of the client, tailor-made to fit a 1st year project. A few examples of research questions are:

- In what way do citizens of Zeeland get information on good-quality health care?
- How do patients with Diabetes Mellitus evaluate the Diabetes Health care at Walcheren in 2011 and how does this compare to the evaluation results in 2009?
- What characterizes the best Bike Friendly City in Europe?
- To what extent do visitors of the website 'deltawerkenonline' like the website and what recommendations can be made for improvement or offers for online projects and materials?

Then, the projects are announced in class. Students can apply for these external projects by means of a motivation letter, and describe their special interest and / or capability to take part in the project. Based on these letters, their interest - and competency levels, students are assigned to the available project groups. The projects already start during the first few weeks of the semester, and they end with a group presentation and a research paper after 15 weeks. Supervision is provided by the statistics teacher and the content expert at the client organisation, thereby control over reliability and validity of the method is warranted. Moreover, the Science Shop coordinator keeps an eye on the logistics of the project, client satisfaction and communication. The setting up and supervision of group projects is very challenging, both for students and teacher, as the latter should not take supervision lightly. Especially when regional questions from 'real' clients are involved, besides focussing on the application of statistical techniques, the communication of the process and results needs special attention. Supervisors need to move away from traditional teaching methods to unconventional supervision and work together with students to address genuine research problems (Thompson 2009).

Evaluation of student projects

Students' satisfaction with these first year research projects was evaluated between 2006 - 2007 as part of a larger study among N=2,555 students that focussed on attitudes toward statistics. Pre-test and post-test measurements of attitudes toward statistics were taken, along with measurements on mathematics experience and –perceived competency, self-confidence and expected future use of statistics. Besides, qualitative data on students' experience with research projects were collected (from 2005 - 2010). The results revealed that students who are taking part in research projects (community research projects being a part of this) have had more prior math and stats experience, they feel more confident that they can obtain the necessary knowledge and skills, they see the added value of statistics and there attitude toward statistics is more positive. Most importantly however, students who participated in research projects get a higher grade than those who did not (see Verhoeven 2011).

Conclusion and Discussion

Overall students at all levels are enthusiastic participants in community based research projects; they believe it is exciting that they can contribute to policy decisions in (non)profit organizations in the region and they are willing to 'go the extra mile' to bring the project to a successful conclusion.

The main conclusion is that students really appreciate the fact that they can put theory into practice and exercise the acquired skills in a real life setting. Advantages for all stakeholders are multi-fold: beside knowledge transfer and a firm embeddedness in the immediate region, students 'learn on the job', and experience what it is to put research results to use. In turn, lecturers are able to liven up their research methods course and make statistics more attractive.

Looking into the future a few remarks need to be made. Students reported that they have to put in more Effort to finalize the projects compared to standard teaching and learning. For instance, extra time is spent in communicating with the client and presenting the results. This challenge needs to be addressed by the curriculum developers, by means of adding extra supervisory possibilities and -time, extending deadlines or weighing project grades higher or by extra credit for project students.

Group work needs to be closely monitored for two reasons. Firstly, free rider problems need to be addressed. Besides grading the project paper as a whole, each group member must be made responsible for a specific part of the paper in order to grade individual effort. The first signs show that free rider behaviour is kept to a minimum. Secondly, groups do not always collaborate well, due to differences of opinion, time management or communicative skills. This is especially challenging when carrying out community-based projects, where external parties are involved. Supervisors need to pay special attention to these processes, and, if necessary mediate to keep the groups together.

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SAMVERKAN - Public Engagement

The Swedish government has clearly stated that it is the duty of a university to collaborate with the surrounding society, to inform people about its research results and to work to ensure that its research is also of use to society.

Based on country studies, expert inter-views and a literature review Vetenskap & Allmänhet, Sweden, developed several SAM-VERKAN indicators that could be used for resource allocation to universities or within universities. Although rewarding SAMVER-KAN activities by budget enlargement or constraints is one way to promote SAM-VERKAN it is a rather top-down approach. Applying the indicators does not necessar-ily mean that the researchers and university administrations are intrinsically convinced of the importance of SAMVERKAN. The incentive for researchers to engage in SAMVERKAN may remain low because a fundamental cultural change is lacking. Therefore bottom-up approaches for pro-moting public engagement of universities and triggering a cultural standard toward SAMVERKAN are also recommended. Download pdf-report at http://v-a.se/downloads/varapport2011_2.pdf.

Sozialwissenschaftsladen in Berlin

In June 2011 started the Sozialwissen-schaftsladen (Social Science Shop), a non-profit-organisation based in Berlin, Germany. It tries to strengthen commu-nity oriented research and education at Universities and to disseminate interest-ing societal topics by offering seminars and workshops, writing papers and evaluations, conceptualising own projects and realizing them in cooperation with different partners. The interdiscipli-nary team (political science, sociology, economy, pedagogy and cultural science) is focussed on the topics: participative research methods, empirical research methods, social, political and cultural change related to the European Union, ethnicity and migration and education, employment and labour market. Contact: Sabine Schwirner: schwirner@sozialwissenschaftsladen.de; Serttas Dündar: duendar@sozialwissenschaftsladen.de, www.sozialwissenschaftsladen.de

"Big Tent III": Consultative Development of a 3rd Global Dialogue Communiqué at 5th LK Conference

On September 23, 2010, a group of international networks working on the strengthening the Community-University Research and Engagement movement released the first Global Communiqué on the "Enhancement of North-South Cooperation in Community University Engagement".
http://communityresearchcanada.ca/download.php?id=3254

On October 8, 2011, the Big Tent Group* released the second global dialogue com-muniqué on "A Scenario for Community-University Engagement in 2030". Each of these communiqués is open source and 'belongs' to all who participate with the rights to re-distribute and share within all networks.
www.livingknowledge.org/livingknowl-edge/wp-content/uploads/2011/11/GlobalCommunique.pdf

Theme of Big Tent III: Sustainability
According to many, the technological potential for a transformation towards a sustainable society is available. Business and financing models for the transition exist, and the political instruments needed for a climate-friendly transformation are known. In the interest of moving the for-ward, we need more interaction between politics, society, science and the economy. Can we move from the slow lane to the fast lane?

1. How can Community University Re-search and Engagement Partnerships contribute to environmentally sustain-able economic and social development in the transformation of our societies?

2. How can knowledge and education be drivers of the transformation process? Wider participation through a web-based interactive platform

Timing: Focus on May 8-12 , 2012
The release of Big Tent III will be linked to the 5th International Conference of the Living Knowledge Network in Bonn, Germany May 10-12. *The discussion opens on April 24*, an intensive consultation will take place between May 8-11, with the draft final communiqué to be read aloud at the final closing session of the Living Knowledge Network meeting on May 12. A final text version will be formatted and distributed through the Big Tent networks and other social media.

The Big Tent group wishes to widen and deepen the participation in the formula-tion of Big Tent III by moving to an asyn-chronous interactive web-site platform. It is expected that interested participants will join the intensive consultation.

How to Participate
Go to PERARES Debate (http://www.liv-ingknowledge.org/discussion/diskutiere/). Click on 'all debates' and find "Big Tent Discussion on Sustainability, Knowledge and Democracy".

The Communiqué and its Purposes
The Big Tent III statement will follow in-ternational norms for policy and advocacy declarations and agreements. With Rio + 20 in the air on the United Nations front and all regional political structures dealing with issues of sustainability, our communi-qué will find many policy targets including of course our own networks and institu-tions. Past communiqués have had very wide distribution throughout the Big Tent group which represents about 5,000 higher education and civil society groups and other key global higher education spaces.

Please stay connected via the Living Knowledge conference website or the Liv-ing Knowledge Discussion list.

* **This 'Big Tent' group** comprises the following international networks: Pascal International Observatory, Global Alliance of Community Engaged Research, Asia Pacific University Community Engagement Network, Association of Common-wealth Universities Extension and Engagement Network, CEBEM (Bolivia), Global Universities Network for Innovation, Living Knowledge Network, Participatory Research in Asia, and the Talloires Network.

Bringing the Science and art of Knowledge Mobilization practice together

19-20 June 2012, Ottawa, Canada

Knowledge Mobilization has seen a significant growth over the past decade with more organizations engaged in active knowledge mobilization efforts and more people with knowledge mobilization as their profession. Research efforts to understand and optimize knowledge mobilization practice also have accelerated The Canadian Knowledge Mobilization Forum will provide access to some of the best minds and most creative practitioners in the field.

www.knowledgemobilization.net/ckmbf2012

The 2012 AUCEA Next Steps Conference

9-11 July, Brisbane, Australia

The theme for the conference will be Next Steps: Community Engaged Learning and look at this from student, academic, industry/business and community perspectives. The spectrum of Community Engaged Learning encompasses a diverse array of activities that enhance the community, the university, and the student experience.

www.auceaconference.org.au

Connected Knowing

23-25 September 2012, Baltimore, USA

The theme for the 12th annual conference of the International Association for Research on Service-Learning and Community Engagement (IARSLCE) is the generative power of connections and relationships in research on service-learning and community engagement. A distinguishing characteristic of both the design of engaged research and the pedagogy of service-learning is its intended reciprocity and mutuality.

www.researchslce.org/conferences/

CUExpo 2013,

12-15 June 2013, Newfoundland, Canada

Grenfell Campus, Memorial University of Newfoundland and the City of Corner Brook will be the official hosts of CU Expo 2013, a Canadian led conference showcasing community-university (CU) partnerships worldwide.

Participedia – Strengthening democracy through shared knowledge

Participedia is an open global knowledge community for researchers and practitioners in the field of democratic innovation and public engagement. The platform harnesses the power of collaboration to respond to a recent global phenomenon: the rapid development of experiments in new forms of participatory politics and governance around the world. Citizens of most countries are asking for greater involvement in collective decisions. Many governments, nongovernmental organizations, and even some corporations are responding by experimenting with ways to increase public participation. Participedia responds to these developments by providing a low-cost, easy way for hundreds of researchers and practitioners from across the globe to catalogue and compare the performance of participatory political processes. A searchable database of cases, methods, and organizations, including knowledge about how well processes have worked for similar problems, under similar conditions is available for social scientists, policy analysts, democratic theorists, and other scholars. Users are encouraged to contribute information on case studies, methods and organizations.

World in Transition – A Social Contract for Sustainability - Flagship Report 2011

A contribution to the Rio+20 conference 2012

The German Advisory Council on Global Change (WBGU) in its latest report explains the reasons for the desperate need for a post-fossil economic strategy, yet it also concludes that the transition to sustainability is achievable, and presents ten concrete packages of measures to accelerate the imperative restructuring. If the transformation really is to succeed, we have to enter into a social contract for innovation, in the form of a new kind of discourse between governments and citizens, both within and beyond boundaries of the nation state.

Download Full text (5.1 MB, 400 pages) at www.wbgu. de/fileadmin/templates/dateien/veroeffentlichungen/

What is a Science Shop?

A „Science Shop" provides independent, participatory research support in response to concerns experienced by civil society. Science Shops use the term „science" in its broadest sense, incorporating the social and human sciences, as well as natural, physical, engineering and technological sciences.

There is not one dominant organisational structure defining a Science Shop. Over the last few years international interest in the Science Shop model has developed, and similar organisations have been established in a wide range of countries. How Science Shops are organised and operate is highly dependent on their context. Through their contacts, Science Shops provide a unique antenna function for society's current and future demands on science.
Organisations that provide civil society with knowledge and skills through research and education on an affordable basis are welcome to share their experience in the Living Knowledge Network. There are forums for all parties interested and involved in Science Shops and other forms for community based research. They can give input to but also get in-formation from the Living Knowledge discussion list, the quarterly newsletter or this magazine, which provide users with resources and tools related to community-based research.

Living Knowledge Website:
www.livingknowledge.org
International Science Shop Office
livingknowledge@wilabonn.de

If you want subscribe or unsubscribe to the magazine or the newsletter please send a message to livingknowledge@wila-bonn.de or visit our website at www.livingknowledge.org and select 'Discussion list and Newsletter'

EC Services

The EC published a brochure: 'Science Shops - Knowledge for the Community'. This brochure focuses on different target groups, universities, students, citizens groups and local authorities.

The brochure can be downloaded from http://ec.europa. eu/research/science-society/pdf/science_shop_en.pdf

The Science and Society portal of the European Commission is open to all news and organisations related to Science and Society.

http://ec.europa.eu/research/science-society/index.cfm