

Workshop Research Shops

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CESI-Team

Questions of the Day

- How can we articulate and be responsive to community needs?
- How can we effectively document the impact(s) of community-engaged research?
- How can we work with students in the community-based research process?
- How can we use community-engaged work to create policy changes and/or culture shifts?
- How can we use institutional structures to manage community-university research?
- *How can we be responsible, resilient, and flexible in times of institutional and/or political change?*
- *How can we remain independent and objective in community-based research?*

Mediation Tasks



- 1 Receive/solicit clients and (new) questions
- 2 Map the problem (articulation)
- 3 Preliminary research: Refer, Refuse, Advice or Formulate (scientific) research question (Incl. funds if required)
- 4 Find a (co-) supervisor
- 5 Find a student or researcher
- 6 Maintain communication and process
- 7 Facilitate useable presentation/publication of results
- 8 Help client implement results and formulate follow up actions
- 9 Make inventory of follow-up research/themes
- 10 Evaluation



Civil Society Organisations: Intake / Partners

Dr. Henk A.J. Mulder

**Science Shop,
University of Groningen,
The Netherlands**

www.scienceshops.org

Reasons to approach Science Shop

- ❖ Policy or Practical Influence
- ❖ Evidence for alternative viewpoints
- ❖ Improvement of own operations



1. Receive/solicit clients and (new) questions

❖ Active Public → comes by itself

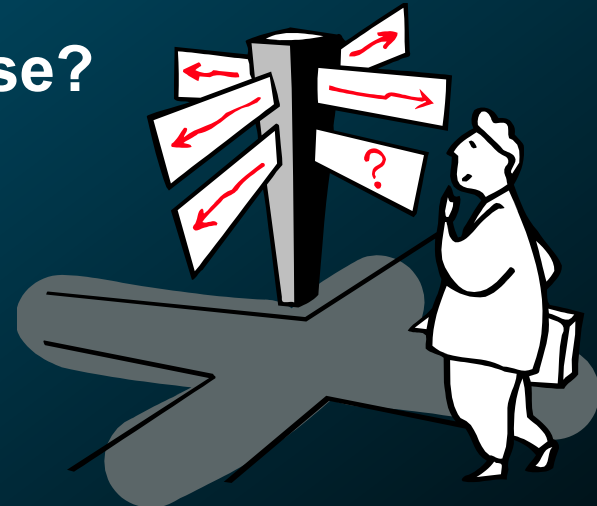
❖ Conscious Public → known / through other organisations

❖ Latent Public → targeted acquisition

❖ Passive Public → help organise?

Type of questions:

- research
- encyclopedic





Science Shop Criteria

1. Scientific/research element.
2. Public results.
3. Relevant to number of people.
4. Client is able to use results.
5. Question is not commercial.

**→ Then no financial
blockade**



Accepted Research Projects

- Research must be achievable
- Methods must be clear
- Research must be ethical
- Clear access to participants
- Organisation willing to support student
- Student and Science Shop to be recognised when report is used

Targeted acquisition

- a careful approach
- no false expectations
- first inventorize within the university research themes
- sufficient potential

Needs Survey among Civil Society Organizations Flanders & Brussels

https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Dokumente_Dateien/Toolbox/LK_D_Questionnaire_to_organisations_-_initial_registration.pdf

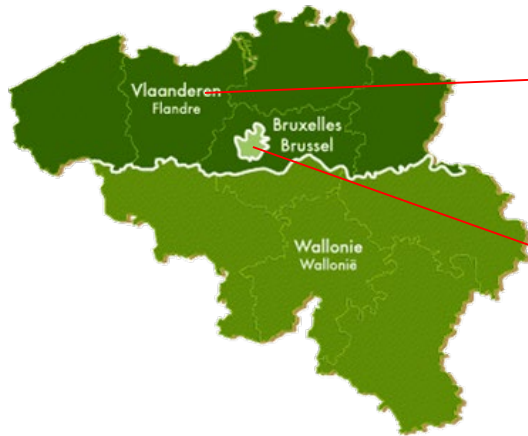


Vrije Universiteit Brussel

Aim

- Primary goal:
Do CSO's have a need for a science shop?
- Secondary goal:
Is this need sufficient enough to guarantee the succes of a science shop?
- Tertiary goal:
Promoting the science shop

Needs Survey Flanders & Brussels*



Flanders:

- 3297 organizations contacted
- 586 responses (17,77%)

Brussels:

- 2123 organizations contacted
- 140 responses (6,6%)

Large variety of organizations:

- organizations for people with a disability
- patient organizations
- sport organizations
- women organizations
- neighbourhood clubs
- environmental organizations
- ...

•Edith Donders . *Wetenschapswinkels worden opgestart in Vlaanderen. Hebben Vlaamse non-profit organisaties behoefte aan Wetenschapswinkels en garandeert een dergelijke behoefte het welslagen van een wetenschapswinkel project?* , Licentieverhandeling 2002-2003.
•Edith Donders. *Hebben Brusselse maatschappelijke non-profit Organisaties behoefte aan een wetenschapswinkel?* Oktober 2003.

Research results I

Definition of a science shop: "Science Shops are organizations, connected to a university, making knowledge available to civil society organizations that don't have the means to perform research themselves".

1. Organizations confronted with (social) problems/questions ?
 - Flanders: 44%
 - Brussels: 71%
2. What kind of questions/problems?
 - Health issues
 - communication
 - culture
 - education
 - environmental
 - legislation

Research results II

3. Which actions are taken to solve these problems?

- None: only 5,1%
- reading literature
- contacting experts
- organising questionnaires
- contacting the actor which caused the problems
- taking soil samples
- contacting research institutes

4. Which actions are you planning to take?

- organising discussion
- organising press conferences
- reading literature
- contacting experts
- contacting research institutes
- organising manifestation

Research results III

5. Actions planned/wished for related to research?

- 50% of those organisations that do have issues want to take actions related to scientific research:
 - assigning a research institute to perform research
 - organising questionnaire themselves
 - making measurements themselves
 - taking soil samples

Research results IV

6. Reasons why not yet undertaken?

- no financial means to assign research: >70%
- no financial means to perform research: > 60%
- no expertise to perform research: > 50%

7. Participation

- through collaboration > 75%
- through financial means < 40%
- through internship > 50%

Conclusion

Quantity of organizations willing to take action to solve their problems

+

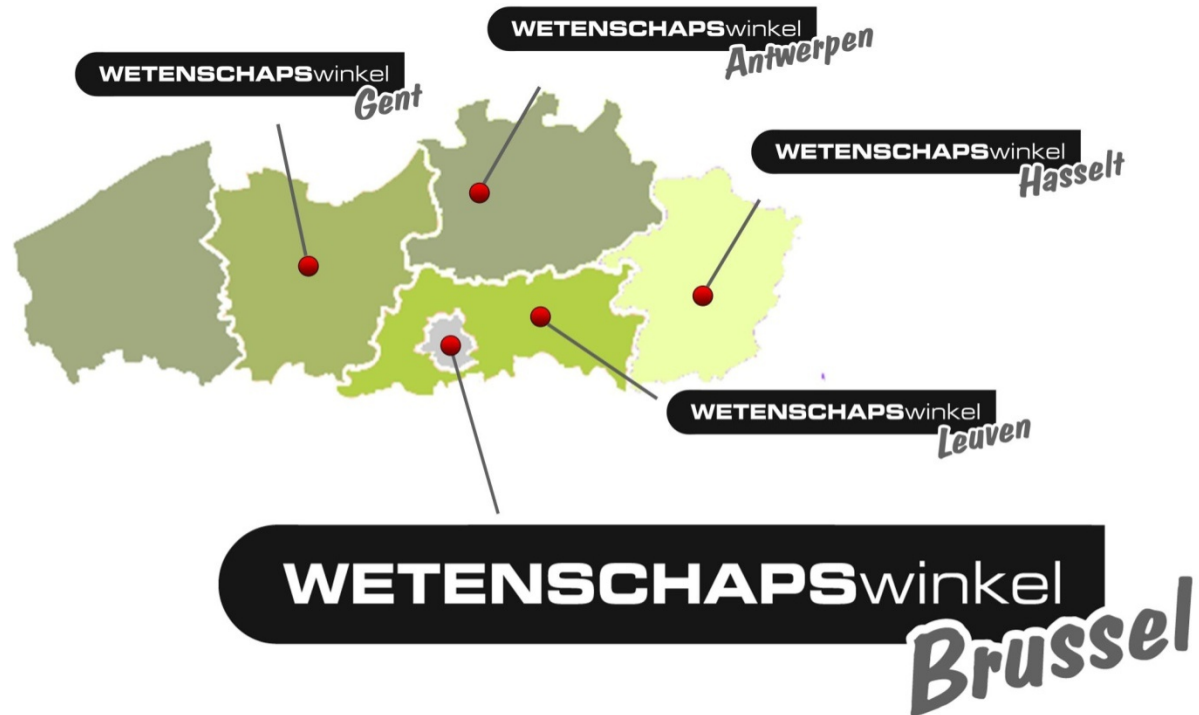
Reasons why didn't take action yet

=

Need for a science shop as a bridge between civil society organizations and research institutes

Flemish Science Shops

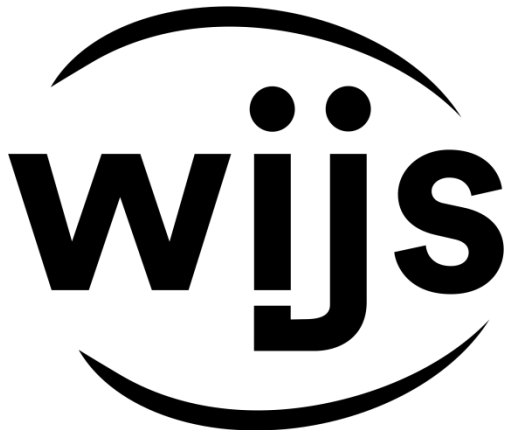
wetenschapswinkel.be



Other matching options

Newspapers, talk of the town (new science shops pilots)

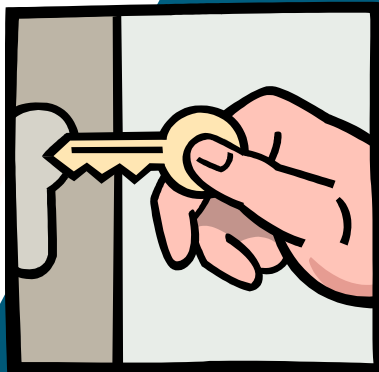
Speeddates, markets



Neighbourhood Efforts Students
and Young People (~WISE)
Hanze University of Applied
Sciences and Municipality of
Groningen

- **Use Interns of Vocational Schools to check for potential issues / projects**
- **Contacts with social service providers**

2. Map the real problem



- ❖ Intake
- ❖ Problem analyses
 - *cause-effect*
 - *problem enlarging / mitigating factors*
- ❖ Objectivity (tone of voice)
- ❖ Test Underlying Assumptions (eg chelates and MS)
- ❖ Research needed / of use?
 - ❖ Stakeholders analyses



Client: NGO giving advice on non-regular therapies for MS

- > **Original request:** Can you do research into effectiveness and mechanism of means to remove heavy metals from MS patients (such as Detoxamin, DMPS)
- > **Research question:** First test underlying presumption that there is a relation between heavy metals and MS, Then investigate what is know about mechanism and effectiveness of chelating therapy. End with research into effectiveness for MS patients and potential risks of chelating therapy (especially for MS patients)
- > **Reformulation action:** Step back, test underlying assumption before continuing; Operationalize

3. Formulate a (scientific) research question

❖ Preliminary research

- *literature, databases, web, contacts*
- *refuse, refer, short advice*



❖ Draft Research Plan

- *research question*
- *required expertise*
- *time frame*

Exercise Home-Care: Mapping the Real Problem

An organisation of disabled people who still live on their own calls you: “The nurses who have to help us get out of our beds are coming later and later. Can you help us?”

- Articulate the real problem by simulating asking questions in this phone conversation. Make a list of questions to ask and possible answers that you could get, and for each different ‘real problem’ write down which discipline would you ask to do research
- (if the answer (or real problem) is then I would turn to discipline with the goal to by answering the research question through the method of)

Other examples (Wageningen)

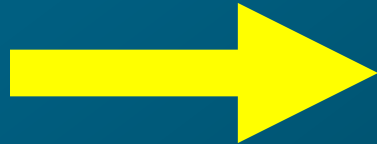
- Direct impact:
 - Strengthening existing research lines
 - Local ferries → barriers country side

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Supply



Research done by
science shop staff
students <ul style="list-style-type: none">- voluntary- course/diploma- internship
researchers <ul style="list-style-type: none">- voluntary- paid



Projects in curriculum

- ❖ In existing (or new) courses / practical periods
 - ❖ First year physics practical (Gron.)
 - ❖ “Communication & Presentation” (Gron.)
 - ❖ “Science & Society” (Bacau)
- ❖ Novel optional “course”
 - ❖ “Science shop project” (Gron.)
- ❖ As B / M thesis (General)
- ❖ As PhD thesis
 - ❖ Skills Portfolio
 - ❖ Honours Programs



Make project fit

❖ Split

❖ *Disciplines (Chemistry, Medicin, Communication; Economics)*

❖ *Multi-disciplinary teams*



Q: How about a local energy plan for your city?
(eg household energy use, traffic, recycling)

Households Energy Use

Program	Department	Stud	Year	Reason
DoMUS	Environmental quality control	3	last	Diploma Project
DoMUS	Installation Eng.	1	last	Volunteer
ASE 2.1	Environmental quality control	15	last	Practical Placement
ASE 2.1	Automotive Eng	2	last	Master Program
ASE 2.1	Civil Eng.	2	last	Diploma Project

Sustainable Cities and Traffic

Program	Department	Stud	Year	Reason
ToolSust*	Sociology	2	first	Volunteer
ToolSust*	Physics/ Chemistry	1	last	Volunteer
OmniTrans*	Automotive Eng.	1	Ph.D.	Professional Interest

* More students, or volunteers from outside the university, may work on the project in the near future.

Make project fit



Split

- ❖ *Disciplines (Chemistry, Medicine, Communication; Economics)*
- ❖ *Multi-disciplinary teams → multi-disciplinary course units (Academic Consultancy – Wageningen; Minor Future Planet Innovation Groningen, ...)*

❖ Enlarge

- ❖ *Case + theory (thesis)*

❖ Timing

- ❖ *Fit client's scheme & students availability*



Student Internships

- Experience Interchange Liverpool
- Deliver:
 - Report for client (product)
 - Reflective report for university
 - How the research was done
 - The student's learning experience
- Remember (General):
 - Fit assignment & supervision to student's level !
 - Students need safe learning environment !

Problem-based learning Skills for Students



- 1 Project planning
- 2 Writing
- 3 Social competences
- 4 Social and Political Awareness
- 5 Apply/develop knowledge in context
- 6 Learning by doing

Dublin Descriptors

Cycle

Knowledge and understanding:

- 1 (B) supported by advanced text books
- 2 (M) basis for originality in developing or applying ideas often in a research* context
- 3 (PhD) systematic understanding of their field of study and mastery of the methods of research*

Applying knowledge and understanding:

- 1 (B) devising and sustaining arguments
- 2 (M) **problem solving abilities [applied] in new or unfamiliar environments within broader (or multidisciplinary) contexts**
- 3 (PhD) ability to conceive, design, implement and adapt a substantial process of research* scholarly

Making judgements:

- 1 (B) gathering and interpreting relevant data
- 2 (M) the ability to integrate knowledge and handle complexity, formulate judgements with incomplete data
- 3 (PhD) capable of critical analysis, evaluation and synthesis of new and complex ideas

Communication

- 1 (B) [of] information, ideas, problems and solutions
- 2 (M) [of] their conclusions and the underpinning knowledge and rationale (restricted scope) to specialist and **non-specialist audiences** (monologue)
- 3 (PhD) with their peers, the larger scholarly community and with **society in general (dialogue)** about their areas of expertise (broad scope)

Learning skills

- 1 (B) have developed those skills needed to study further with a high level of autonomy
- 2 (M) study in a manner that may be **largely self-directed or autonomous**
- 3 (PfD) able to promote, within academic and professional contexts, technological, social or cultural advancement

Student's opinion about science shop projects

„This project [*International project - EMS in factories in Romania and The Netherlands*] . . .

... **encouraged me** more in taking initiatives and responsibilities within a group,

... **represented** a good opportunity to apply my existent knowledge for identifying the emissions and wastes produced in different technological processes, and

... **helped me** improve my team work, computer and communication skills, absolutely necessary to obtain the information needed from the companies or EPA, in Romania and in The Netherlands”



*interviews
for the
INTERACTS
project*

Increasing Impact

❖ Examples in other regular courses:

Environmental chemistry
Product and Process Engineering
Nature & Environmental Policy
Science, Communication & Society
Nano-technology
etc.



❖ Methodological courses:

“Research for Society” / “The scientist as adviser”

❖ Renewal of Masterprograms:

Communication track / Societal track

5. Find a student or researcher

Choice:

❖ Advertisements, web, teacher, contacts, thesis-market, speed date

❖ Science Shop Advisory Board

❖ Student: credit-points; “out-of-the-box” thinking, eye openers

❖ Researcher: content, finance

❖ Criteria: Funds, quality, time-pressure

❖ Client: participation



How to find suitable courses?

Course Catalogue: Project / Practical / Problem-based / Internship / Communication / Skills / Ethics / Multidisciplinary / Case / Interdisciplinary / Transdisciplinary / Applied / Research / Thesis / Colloquium / Participatory / Community / Social / Society / Public / Optional / Voluntary / Student selected / Environment / Sustainability / Energy / Health / ... and any other field you need supply in

- ❖ **Approach Coordinators: Options/Criteria, Deadlines (first ideas, full proposals; start; finish)**



Students

- Are allowed to make mistakes
- Need safe learning environment
- Grading? Reflection?
- Certificates / Volunteering
- Honours Degrees?
- Skills Portfolio

What's in it for the supervisor

- Supervision = Teaching (or: Tenure Criteria...)
- Content, Fun
- Network, Partners, New Angles, Access to Data
- Access to Funds (sometimes)
- Use, Testing (extended peer-review) → Robust Knowledge (Scary: at the edge of knowledge)
- Media Attention, Ambassador Role
- “Societal Impact”, “Outreach”

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Strategy

- https://www.livingknowledge.org/fileadmin/Dokumente/Dateien-Living-Knowledge/Dokumente/Dateien/Toolbox/LK_C_Practical-guide-developing-policy-and-strategy.pdf

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Conflict with client

- > Alternatives to dry-cleaning with chlorinated chemicals
- > Chemistry Shop: supercritical CO₂
- > Environmental Organization: water-based!



Commissioning party/customer (3)

- > 'Hijacks' your results in a misleading way
 - Environmental organization (again)



Conflict with client and industry

- > Alternatives to dry-cleaning with chlorinated chemicals
- > Chemistry Shop: supercritical CO₂
- > Environmental Organization: water-based!
- > Industry: neither one of both!



Conflict with client and industry

- > Alternatives to dry-cleaning with chlorinated chemicals
- > Chemistry Shop: supercritical CO₂
- > Environmental Organization: water-based!
- > Industry: neither one of both!
- > Dean's support based on independence (impartiality) and scientific quality

Support:



Living Knowledge
The International Science Shop Network

Living Knowledge = Cooperation

The purpose of the Living Knowledge Network - with its persons or organisations involved - is to **promote the community oriented cooperation** between civil society and those involved in learning and teaching, research and innovation in fostering social and technological development that incorporates views, wishes, demands and knowledge of civil society and its organisations in the research and innovation process and/or curricula.

Living Knowledge = Open

- Connect to ECSA/ECSITE/EUSEA and global networks
- Languages
- Thematical
- New actors



InSPIRES

SciShops 

Living Knowledge = Sharing

- Mail-list: Partner search, Funding Opportunities; Training/Twinning Offer/ Request; Drafts for comment
- Contribute to News Letter
- Webinars
- Web site: Translations/Tools/Papers/ Case Studies/Links to national science shops
- Crowd Funding
- <https://www.livingknowledge.org/>



Living Knowledge

The International Science Shop Network

20 Year Anniversary !!!!!!!

9th living knowledge
conference Groningen 2020

Welcome to Groningen!

Theme: Synergies

Dates: 24-26 June 2020 (+pre-conference 22-23 June 2020)

<https://livingknowledge.org/lk9/>