

Introduction to citizen science

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Citizen Science Knowledge Center



Promote Citizen Science



Create networking opportunities



Support and advise projects



Map and innovate the citizen
science landscape

**Citizen Science Inspiration
and Networking Day**

12 September 2024
Mechelen

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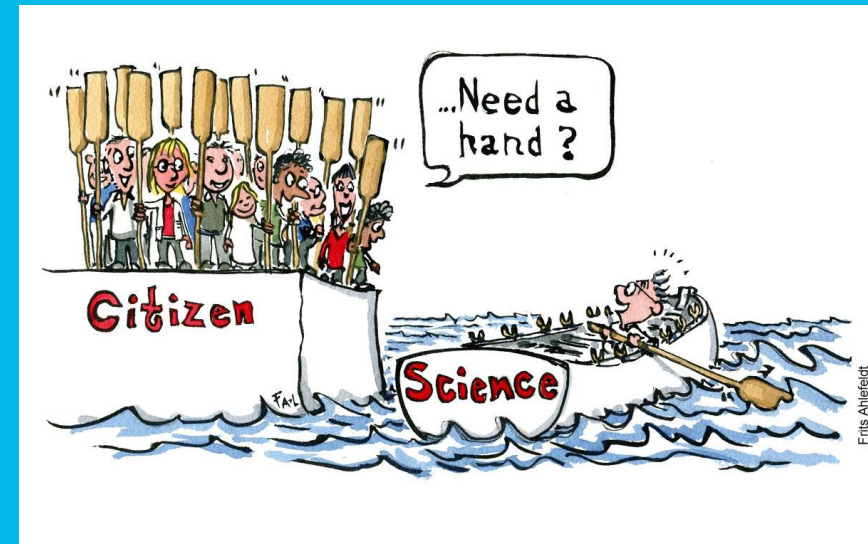
1. What is Citizen Science
2. Why consider a citizen science approach?
3. Tips&Tricks for citizen science initiatives

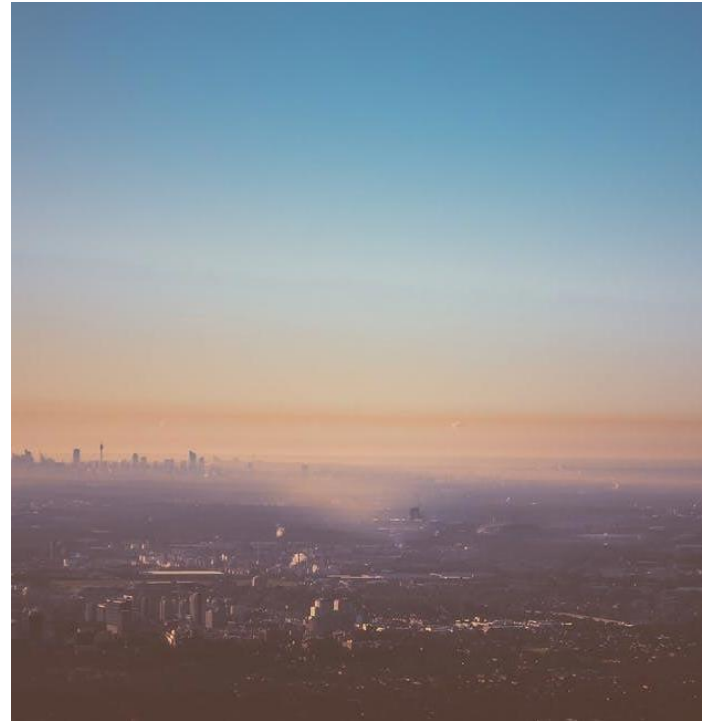
What is Citizen Science?

What is Citizen Science?

Citizen Science is **scientific research** conducted, in whole or in part, by **nonprofessional scientists** (citizens). Citizen science is **often** (but not always) conducted in collaboration with **professional** scientists.

Citizens conducting scientific actions

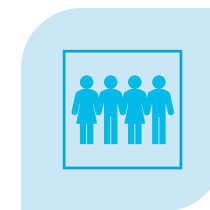




Curieuzeneuzen (2018):
20.000 citizens
measuring air quality



RESEARCH



SOCIETAL
IMPACT



LEARNING

SOS Antwerp

- Death causes in Antwerp between 1820 and 1946
- 720 citizen scientists transcribe tens of thousands of records in 10 months
- You only need a computer and internet connection

“If you would have told me five years ago that I would be working on a scientific history project with more than 700 volunteers, I would not have believed you. I was convinced that you had to have a history degree to collect historical data. **The potential of such a motivated group is huge**, often they implement **better and more accurately** than our students.” *Isabelle Devos*

“For example, we have data on both World Wars, which is very exceptional. A cause-of-death register of a major city preserved over such a long period is truly a **goldmine for scientific research.**” *Isabelle Devos*

Mijn profiel: Jef V

Speciale tekens Helpteksten Scan meebewegen Andere s

26	Januari	vrouwelijk kind	Verloven. Van Oel	24	Januari	doofgeboren	7 maanden d
		M ^{re} Leopoldine	Hofman	23	"	6 12 67	Broncho pneum
"	"	Victor Josephus	Post Poox.	23	"	31 7. 75.	Hartziekte
"	"	Rachel.	Ganss.	23	"	4 5 62.	Neoplasma v
"	"	Maria Petronella.	Dierckx.	23	"	2 11. 78.	Onderkomen
"	"	Ludovius.	Janssens.	24	"	4. 8. 72.	Hartdecompens

mer*	Datum registratie*	Voornamen*	Familienaam*	Datum overlijden*
edag*	Geboortemaand*	Geboortjaar*	Doodsoorzaak*	Begraafplaats*
isondernemer*	Dokter*	Aanmerkingen	Toelichting	

Topics

Air quality
Mobility
Biodiversity
Water quality
Noise pollution
Archaeology
Astronomy
History
Health
Arts
Sociology
Wellbeing
Bio engineering
...

Actions

Sensors
Measurements
Counting
Observations
Photography
Analysis
Annotation
Transcription
Interpretation
Story telling
Interviewing
Communication
Research question
Method design
...




Citizen science to collect large data sets




Straatvinken
 Counting traffic for one hour
 In 244 municipalities in Flanders,
 In 2100 street segments,
 700.000 cars, bikes, pedestrians, ...



Largest study on vaginal microbiome in the world!

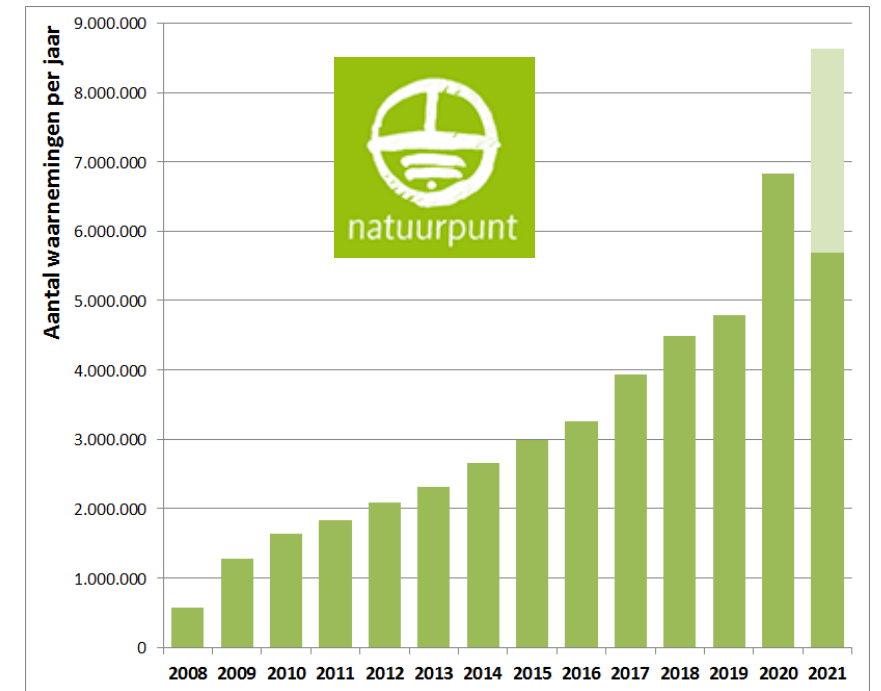


Over



6000 women participated in Isala

Isala.be – 6000 vaginal swabs crowdsourced and analysed



Waarnemingen.be – Natuurpunt: 60 million observations (2023)



Straatpoezie.nl: 3325 poems



SCivil

Mijn
Tuinlab.be

Citizen science allowing research in new/private locations

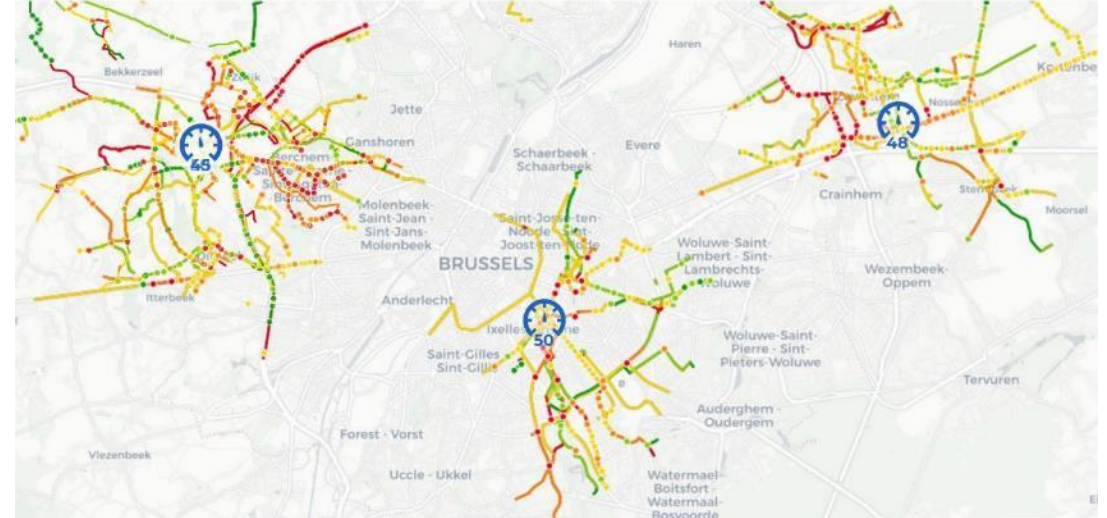


SPIDERSPOTTER
DISCOVER SPIDERS & THEIR WEBS



Citizen perspectives shaping science

Fietsbarometer (Bike barometer) (Perceived) traffic safety of young cyclists



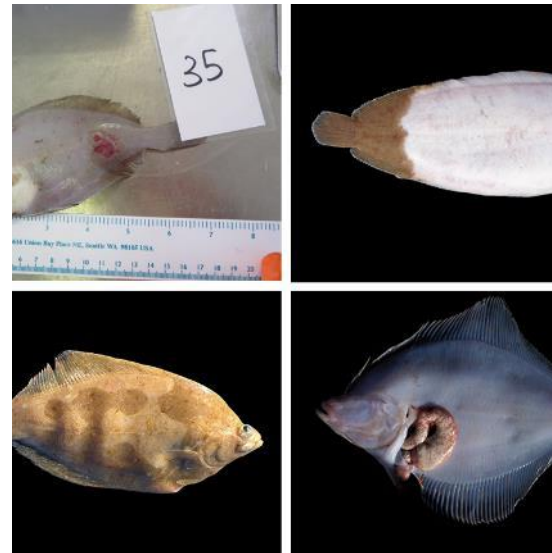
Age-friendly
Neighbourhoods
(Manchester, 2016)
Elderly Mancunians as
local livability experts
and interviewers



Citizens with unique expertise



Vores historie
(Denmark, 2022)
Interviewing family
members about lived
history



Solefish diseases
(BE, 2018)
Fishermen search for
skin diseases in their
catch



Seawatch-B
(BE, 2015 - now)
Citizens as researchers
and ambassadors of
'their' beach

Online gaming for science



Fold.it

A screenshot of the Fold.it protein folding simulation interface. The main area shows a 3D model of a protein structure with various colored segments (green, yellow, blue, orange) and red spheres. On the right, there is a "Soloist Competition" table with columns for "# Player Name", "Current", and "Best". Below the table is a chat window with messages from "shpalmina", "BletchleyPark", "Natanael", and "Natanael".

#	Player Name	Current	Best
1	BootsMcGraw	-	9628
2	vertex	-	9627
3	themarquis	-	9625
4	Mark-	-	9624
5	infjanc	-	9613
6	Mr_Jolty	-	9611
7	kevoad5	-	9604

Chat - Group auto show
Chat - Puzzle auto show

shpalmina: and so?
BletchleyPark: and left me with an unanswered question
Natanael: what's up?
BletchleyPark: what is a tab-complete ? ;)
Natanael: Have you used IRC?



Bugs 2
the
Rescue

Citizen science and education



More online citizen science

Doedat.be

The screenshot shows the Doedat.be website. At the top, there is a navigation bar with links for Home, Institutions, Projects, Tutorials, Forum, Contact us, and Log in. A search bar is also present. Below the navigation, there are several project cards. One card features a building with the sign 'ANTONIJN MEISE' and is titled 'Names of the large format collection of the Belgian Her...'. It shows progress bars for 'Specimens' and 'Botanic Garden Meise' with statistics: 0% Validated, 22% Transcribed, and 1313 Tasks. Another card shows a portrait of a man and is titled 'Crépin's Rose Herbarium (XVII)'. It shows 0% Validated, 31% Transcribed, and 924 Tasks. A third card shows a field of trees and is titled 'The flora of Kenya (02)'. It shows 0% Validated, 31% Transcribed, and 924 Tasks. On the right side, there is a 'DOEDAT STATS' section showing '1125 Volunteers' and '58766 tasks of 680089 completed'. Below that is an 'HONOUR BOARD' section listing top contributors: Day tripper (brigitte Terry, 185), Weekly wonder (brigitte Terry, 208), Monthly maestro (Myriam Engelen, 1689), DoeDat Legend (rony Wouters, 110847), and Latest Contributions (rony Wouters, 3 minutes ago, transcribed 112 tasks).



Zooniverse.org

The screenshot shows the Zooniverse.org website. At the top, there is a navigation bar with icons for ALL DISCIPLINES, ARTS, BIOLOGY, CLIMATE, HISTORY, LANGUAGE, LITERATURE, MEDICINE, and NAT. Below the navigation, there is a search bar and a dropdown menu for 'Most Recently Launched'. The main content area displays a grid of project cards. The first row includes 'INFECTION INSPECTION', 'GENOME DETECTIVES', 'EYES ON EYES', 'Node Code Breakers', and 'HMS NHS: THE NAUTICAL HEALTH SERVICE'. The second row includes 'SCIENCE SCRIBBLER: PLACENTA PROFILES', 'ETCH A CELL - VR', and 'MONKEY HEALTH EXPLORER'. The text 'SCROLL DOWN FOR EVEN MORE' is visible at the top right of the page.

The screenshot shows the VeleHanden.nl website. At the top, there is a navigation bar with the logo 'VeleHanden.nl' and links for Home, Projecten, Deelnemers, Nieuws, Over ons, and Help. There are also buttons for 'Inloggen' and 'Aanmelden'. Below the navigation, there is a large banner image showing a group of people in historical clothing. The text on the banner reads 'Ervaring is niet nodig, wel passie voor ons verleden.'

VeleHanden.nl

Leuk en verslavend!

- Kies een project
- Voer gegevens in of beschrijf foto's
- Op je eigen pc of laptop
- Waar en wanneer het jou uitkomt

Meedoen is eenvoudig

Probeer een van onze projecten

Citizen science platforms

www.iedereenwetenschapper.be

eu-citizen.science

The screenshot shows the homepage of 'iedereenwetenschapper.be'. At the top, there is a navigation bar with links like 'ZOEK EEN PROJECT', 'MISSIE', 'VOOR ONDERZOEKERS', 'MELD JE PROJECT', 'BIO'S', 'NIEUWSBRIEF', and 'AANMELDEN'. A search bar contains the text 'Zoek een project' and a 'ZOEK' button. Below the navigation, there are several project cards, each with an image, a title, a description, and a 'IK DOE MEE' button.

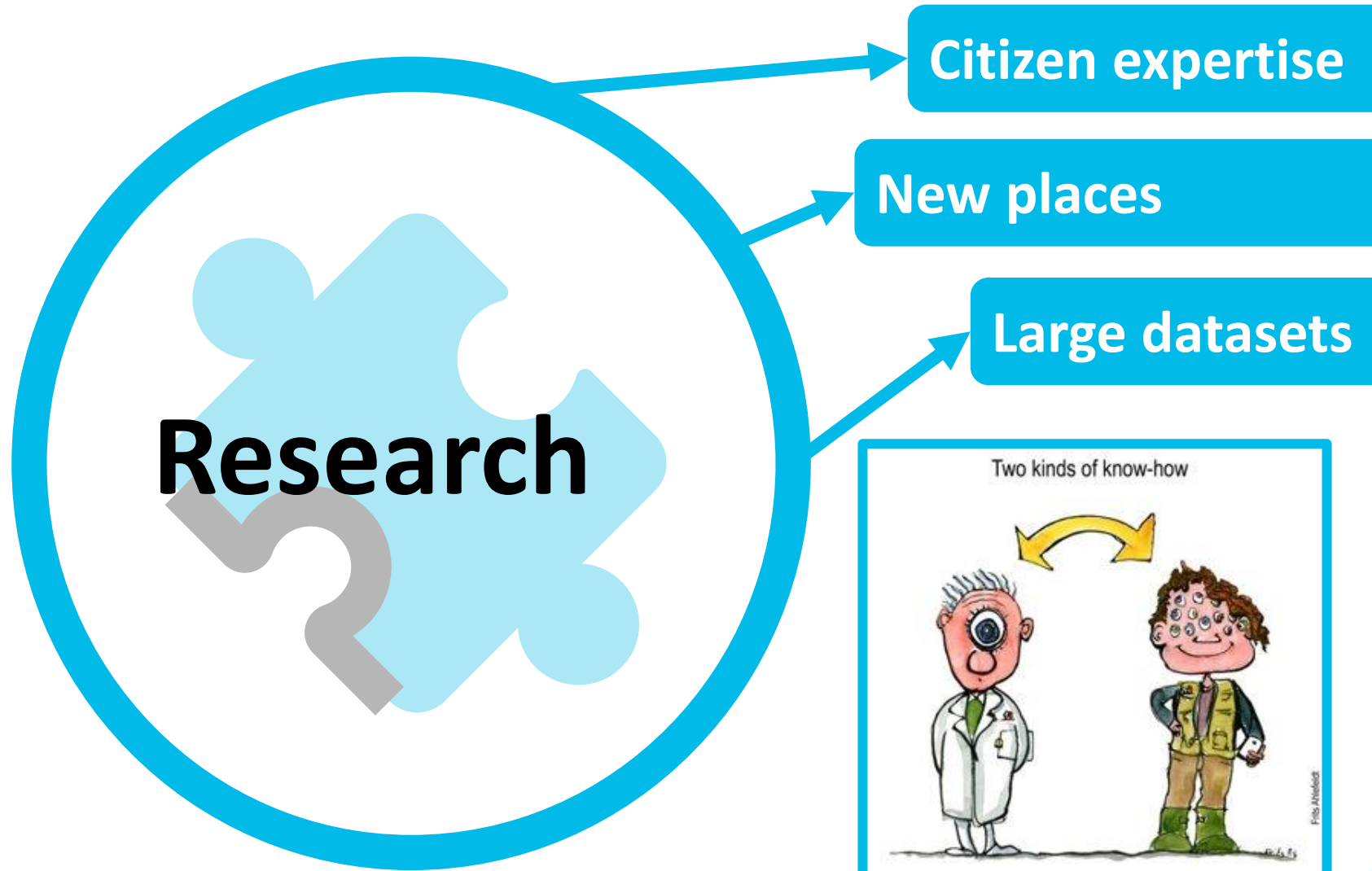
- Project 1:** Image of a classroom. Title: 'Werk mee aan een lessenpakket'. Description: 'Vergroot de weerbaarheid van Brusselse jongeren'. Button: 'IK DOE MEE'.
- Project 2:** Image of a historical map. Title: 'Een reis naar het verleden'. Description: 'Verken de geschiedenis via historische kaarten'. Button: 'IK DOE MEE'.
- Project 3:** Image of a person at a computer. Title: 'Digitaliseer slavernijregisters'. Description: 'Duik in het Nationaal Archief Suriname en Curaçao'. Button: 'IK DOE MEE'.
- Project 4:** Image of a starry sky. Title: 'Op jacht naar kosmische kwallen'. Description: 'Onderzoek sterrenstelsels'. Button: 'IK DOE MEE'.
- Project 5:** Image of a spider. Title: 'Spinnen in de stad'. Description: 'Bestudeer spinnen met je klas'. Button: 'IK DOE MEE'.
- Project 6:** Image of a child with a microscope. Title: 'Wetenschap in de klas'. Description: '"Burgerwetenschap is niet enkel voor STEM-richtingen of de middelbare school." Lees het artikel'.

The screenshot shows the 'project search' page on 'eu-citizen.science'. It features a search bar, navigation links (Projects, Resources, Training, Organisations, Platforms, Users), and a filter section with options like 'Most Recent Updated', 'Country', 'Status', 'Tag', 'Difficulty Level', 'Topic', and 'Participation Task'. Below the filters, there is a grid of project cards, each with an image, title, description, and engagement metrics.

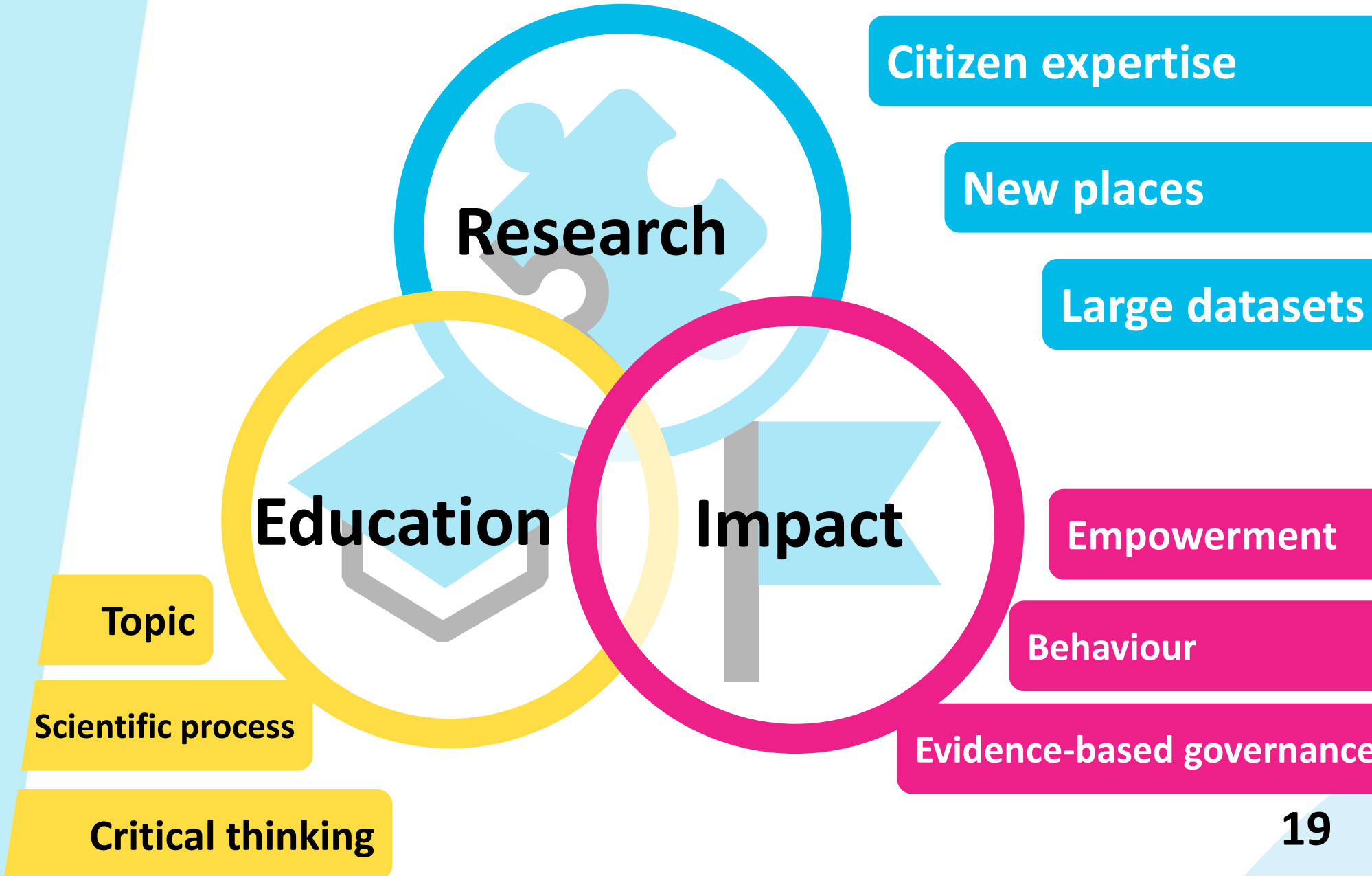
- Radio Meteor Zoo:** Featured project. Description: 'The Radio Meteor Zoo uses images provided by GRAMS, the Belgian Radio Meteor Stations network which uses reflection of radio waves on meteor ionized trails to detect and study the ...'. Engagement: 54.
- Observers App:** Featured project. Description: 'Earth is facing a global biodiversity and climate crisis, and now more than ever we need to monitor marine megafauna. Marine megafauna species are indicators of ecosystem health, if we ...'. Engagement: 221.
- SIREN project:** Featured project. Description: 'In Italy, hydro-meteorological data collection has been managed at the national level by the National Hydrological and Mareographic Service (Servizio Idrografico e Mareografico Nazionale, SIMN) since the early 1900s. The ...'. Engagement: 183.
- OpenLitterMap:** Description: 'Due to the urgency of plastic pollution, including an estimated average of about 900 tonnes of plastic entering the oceans every hour, new and improved forms of open data are ...'. Engagement: 198.
- PLAST-EXPERIMENTET:** Project card with an image of a plastic bottle and a funnel.
- BioRegisto:** Project card with an image of people and a globe.

Why consider a citizen science approach?

Why?



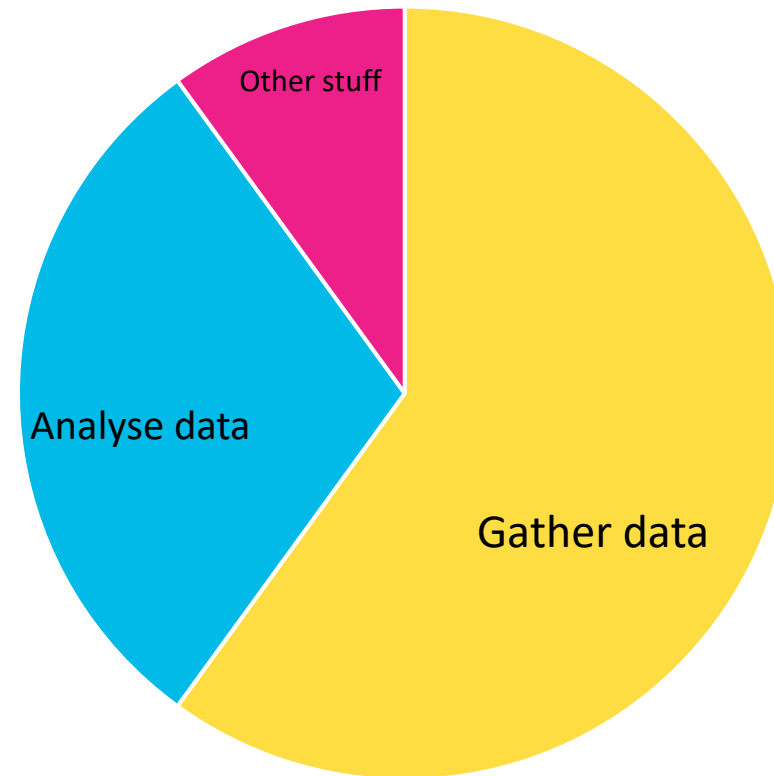
Why?



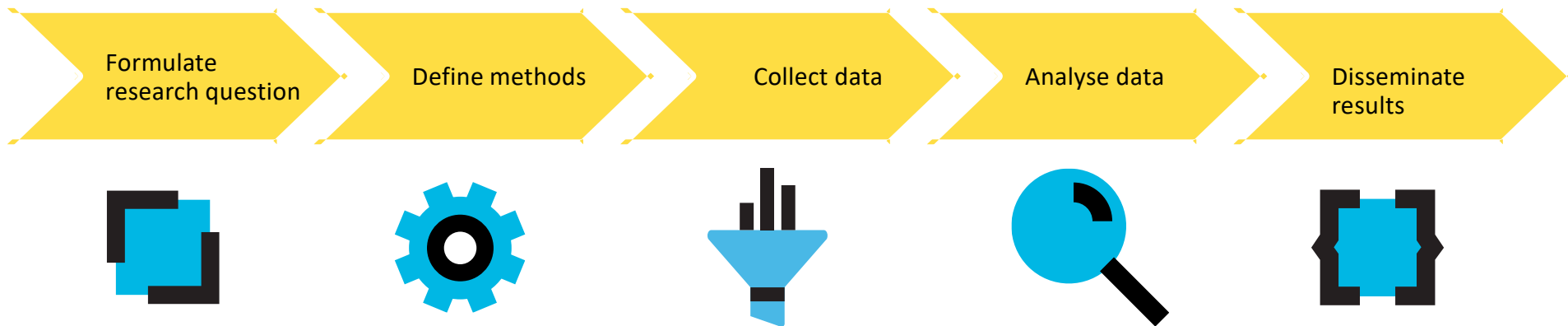
How?

What do citizen scientists do?

(chart by no means based on empirical data)



Citizens can contribute to any step of the scientific process



Who?



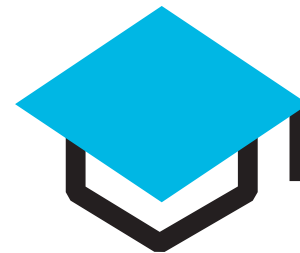
**(professional)
Researchers**



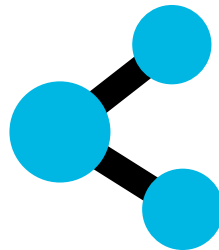
Government



Citizens



Educators



Companies



NGO's



Tips & Tricks for citizen science initiatives

Citizen science is a lot of communication!



What motivates your target audience?

Use existing networks to recruit participants

Create a communication plan

Anticipate dropout

There is no one size fits all

Number of participants



Many citizen scientists
Crowdsourcing

Few citizen scientists
Cocreation

Data protocol & learning opportunities



Strict protocols
Homogeneous data

Autonome participants
Heterogeneous data

Authenticity

Is citizen science really what you need?

Does it fit your goals?

Sustainability

You don't have to do it all by yourself!

Citizen Science Inspiration and Networking Day

Info and registration:
www.scivil.be

- **When?** 12 September 2024
- **Where?** Lamot Mechelen
- **For whom?** The citizen science community
- **What?**
 - Dutch and English sessions on various citizen science themes
 - Poster session
 - Interactive workshops
 - Networking lunch and reception



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onze diensten projecten gidsen en handleidingen succesverhalen over scivil

Wat is Citizen Science?

Citizen science is wetenschappelijk onderzoek dat door niet-professionele wetenschappers (citizen scientists of burgerwetenschappers) wordt uitgevoerd. Vaak werken de citizen scientists hierin samen met of onder begeleiding van professionele wetenschappers. Citizen science is een erg waardevolle methode om aan wetenschappelijk onderzoek te doen omdat ze niet alleen nieuwe wetenschappelijke kennis genereert, maar ook spectaculaire resultaten kan boeken op vlak van gemeenschapsvorming en wetenschapseducatie.



Come talk to us!



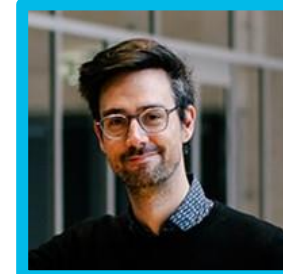
Annelies
General
coordinator



Sanne
Communication
advisor



Charlotte
Citizen science
advisor



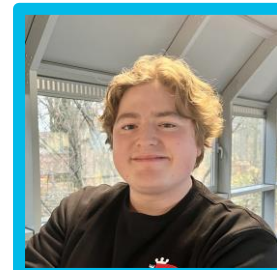
Jef
Citizen science
advisor



Karen
Project
coordinator



Sven
Amai!
Communication
advisor



Isaak
Amai!
Educational advisor



Questions?

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Citizen Science
Vlaanderen