

SDU 



CITIZEN SCIENCE

THE POWER OF MANY

Anne Kathrine Overgaard

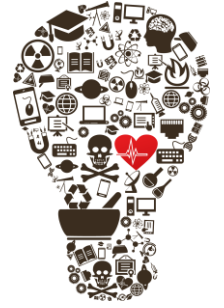
- **Head of External Projects, the Faculty of Health Science, SDU**
- **Co-creator of the SDU Citizen Science Network**
- **Project Manager of several Citizen Science projects**
- **Member of the LIBER Citizen Science Working Group**



Thomas Kaarsted

- **Deputy Library Director, SDU**
- **Co-creator of the SDU Citizen Science Network**
- **Project Manager of several CS-projects**
- **Project Manager of The Danish Research Libraries CS-project**
- **Vice-Chair of the LIBER Citizen Science Working Group**
- **Library Fellow at University College London 2020**





HOW TO ORGANIZE?

CITIZEN SCIENCE AT SDU

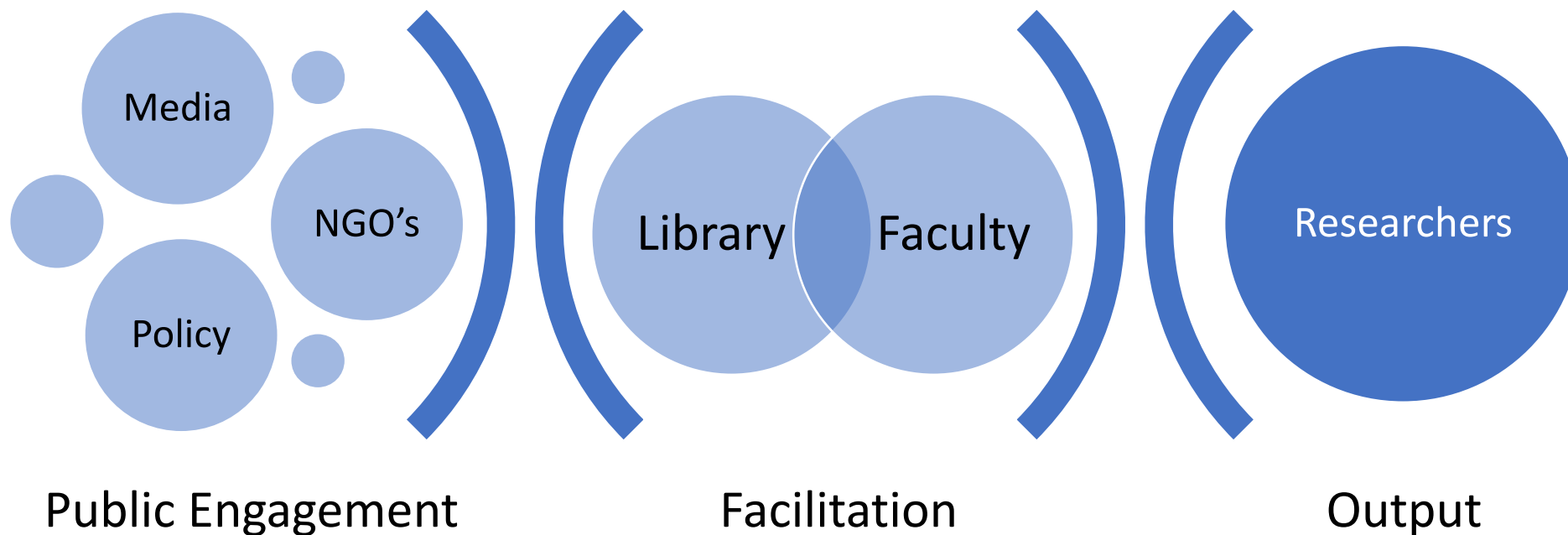
Citizen Science is often used for data collection and mapping of nature areas, but at SDU we see Citizen Science as more than that.

Citizen Science is about generating interaction and dialogue between citizens and researchers, thereby reducing the distance between them in order to encourage a debate based on knowledge and facts.

The Power of Many. The Citizen Science Network is a partnership between the faculties at SDU, Odense University Hospital, University Library of Southern Denmark and SDU RIO.



A NETWORK OF PARTNERS



SDU committed in 2019 on the UN SDG's

- We want to help the world community create value by working together towards the UN Global Goals for Sustainable Development
- We will develop skills and capabilities that encourage unique, innovative solutions for the benefit of a sustainable world
- And we will contribute to moulding a sustainable future by breaking down boundaries and removing limitations

SUSTAINABLE DEVELOPMENT GOALS



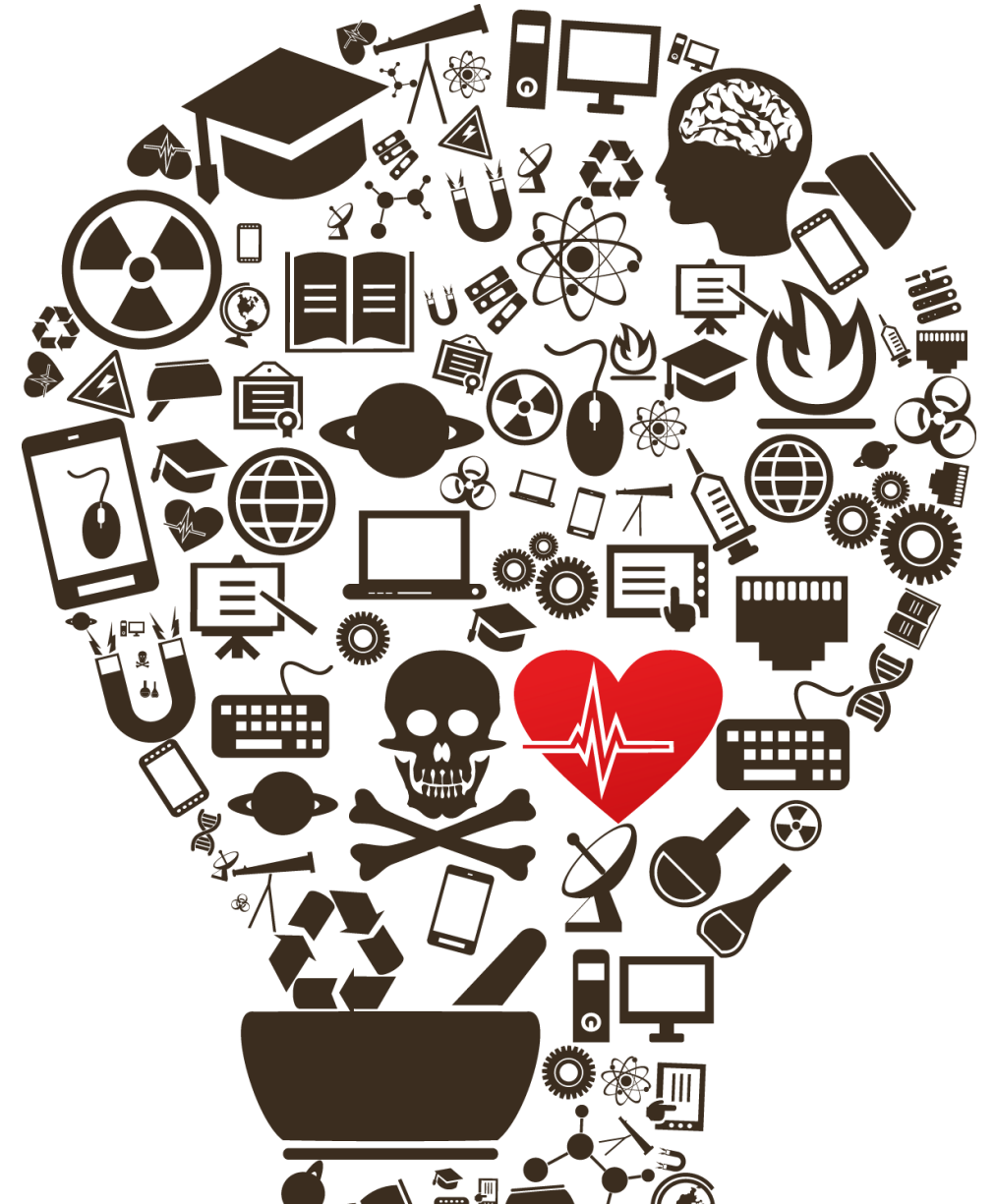
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SUSTAINABLE DEVELOPMENT GOALS




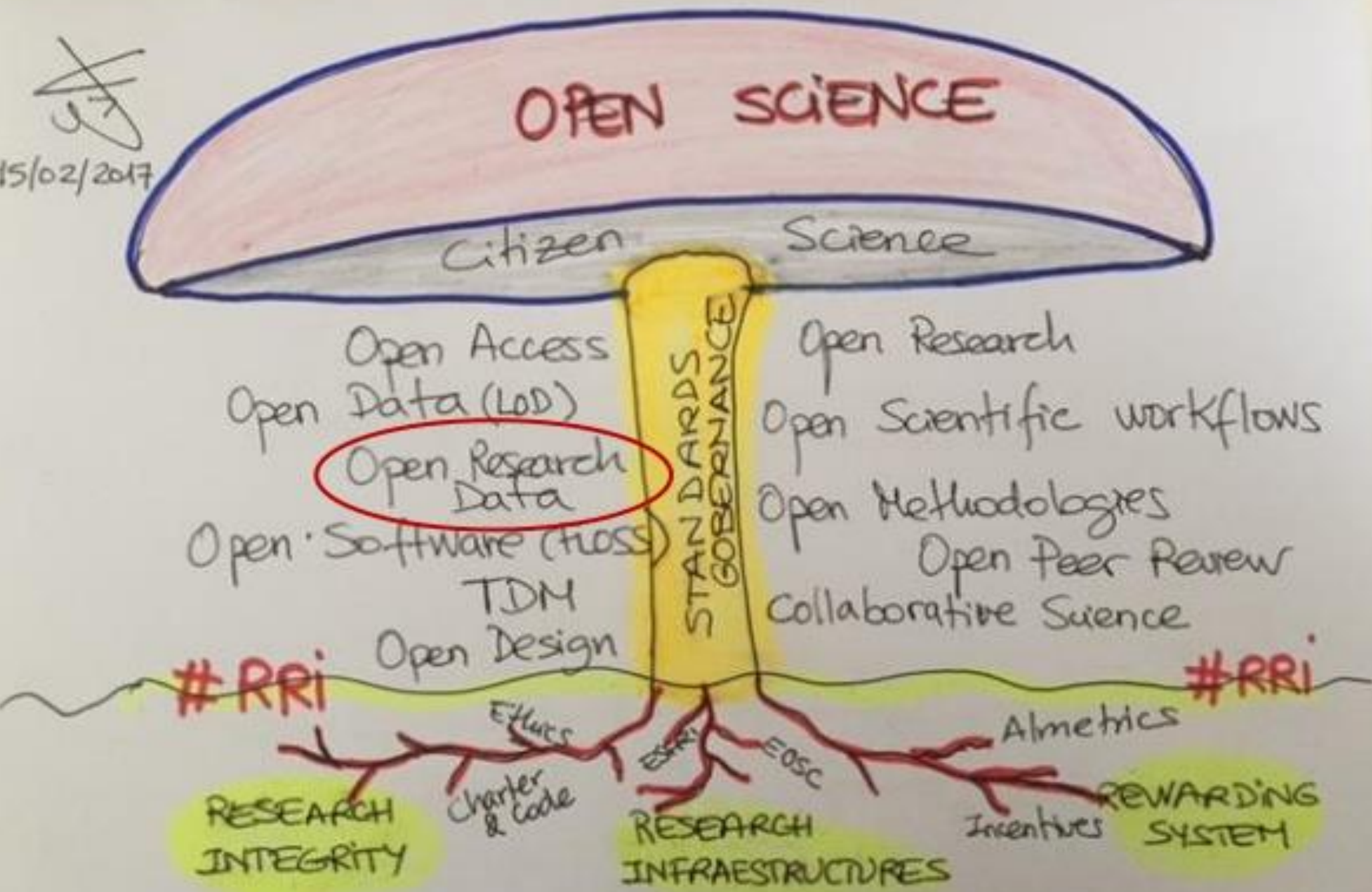
SDU runs several SDU's Challenges

E.g. on SDU Moves, Sustainable Transport Going Green, etc. Several have potential links to Citizen Science.

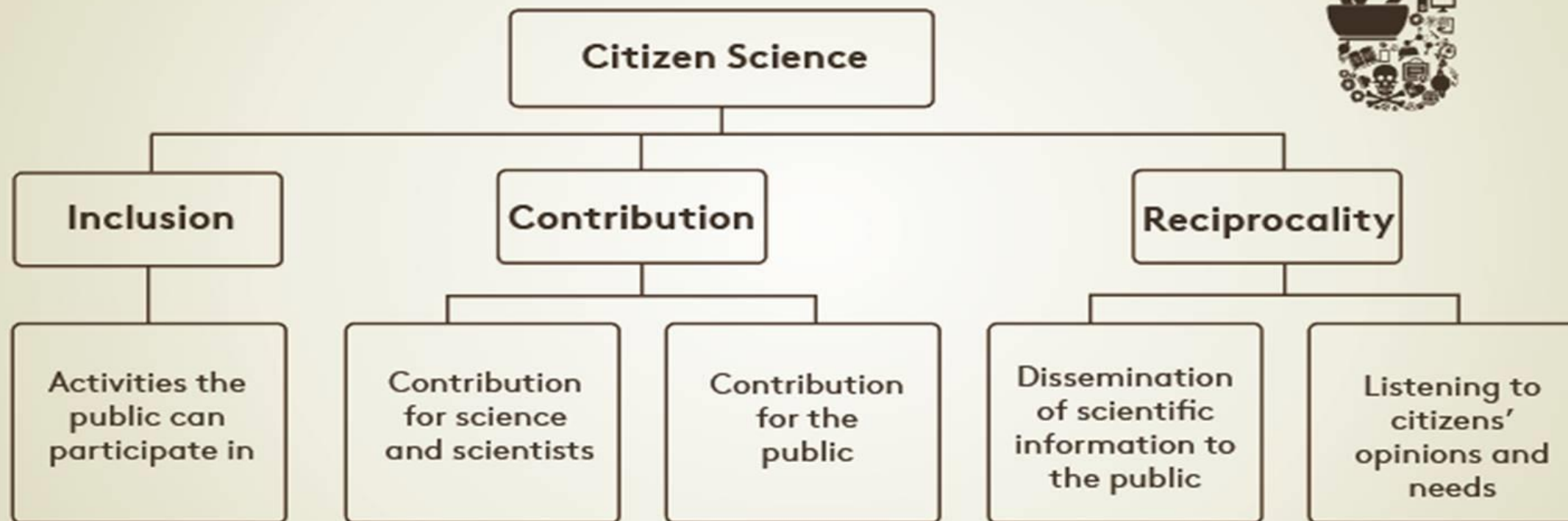


WHAT IS IT?


15/02/2017



Hvad er Citizen Science?



KOMMUNIKATION – PARTNERSKABER – TVÆRVIDENSKABELIGE FORSKNINGSPROJEKTER

(Kilde: Golumbic et al. 2017)

Participation in citizen science

Level 4 'Extreme'

- Collaborative science – problem definition, data collection and analysis

Level 3 'Participatory science'

- Participation in problem definition and data collection

Level 2 'Distributed intelligence'

- Citizens as basic interpreters

Level 1 'Crowdsourcing'

- Citizens as sensors

nature > nature sustainability > perspectives > article



nature
sustainability

Perspective | Published: 09 October 2019

Citizen science and the United Nations Sustainable Development Goals

Steffen Fritz , Linda See, [...] Sarah West

Nature Sustainability **2**, 922–930 (2019) | [Cite this article](#)

5525 Accesses | **1** Citations | **290** Altmetric | [Metrics](#)

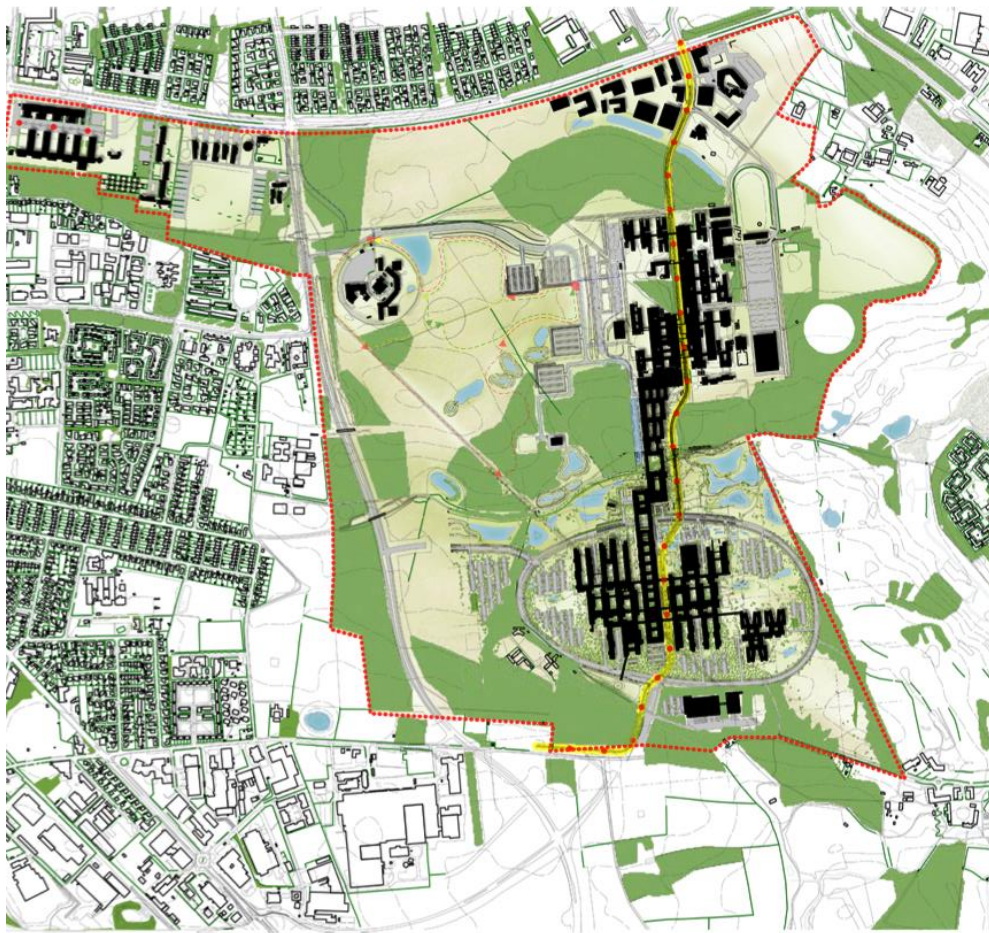
 An [Author Correction](#) to this article was published on 18 October 2019

A FEW CASES

A HEALTHIER SOUTHERN DENMARK

	2017	2018	2019
Total Reach	272.725	192.889	487.452
Facebook (videos viewed)	134.279	130.552	159.939
Web (articles viewed)	44.003	51.518	74.682
Votes	11.895	6.985	17.990





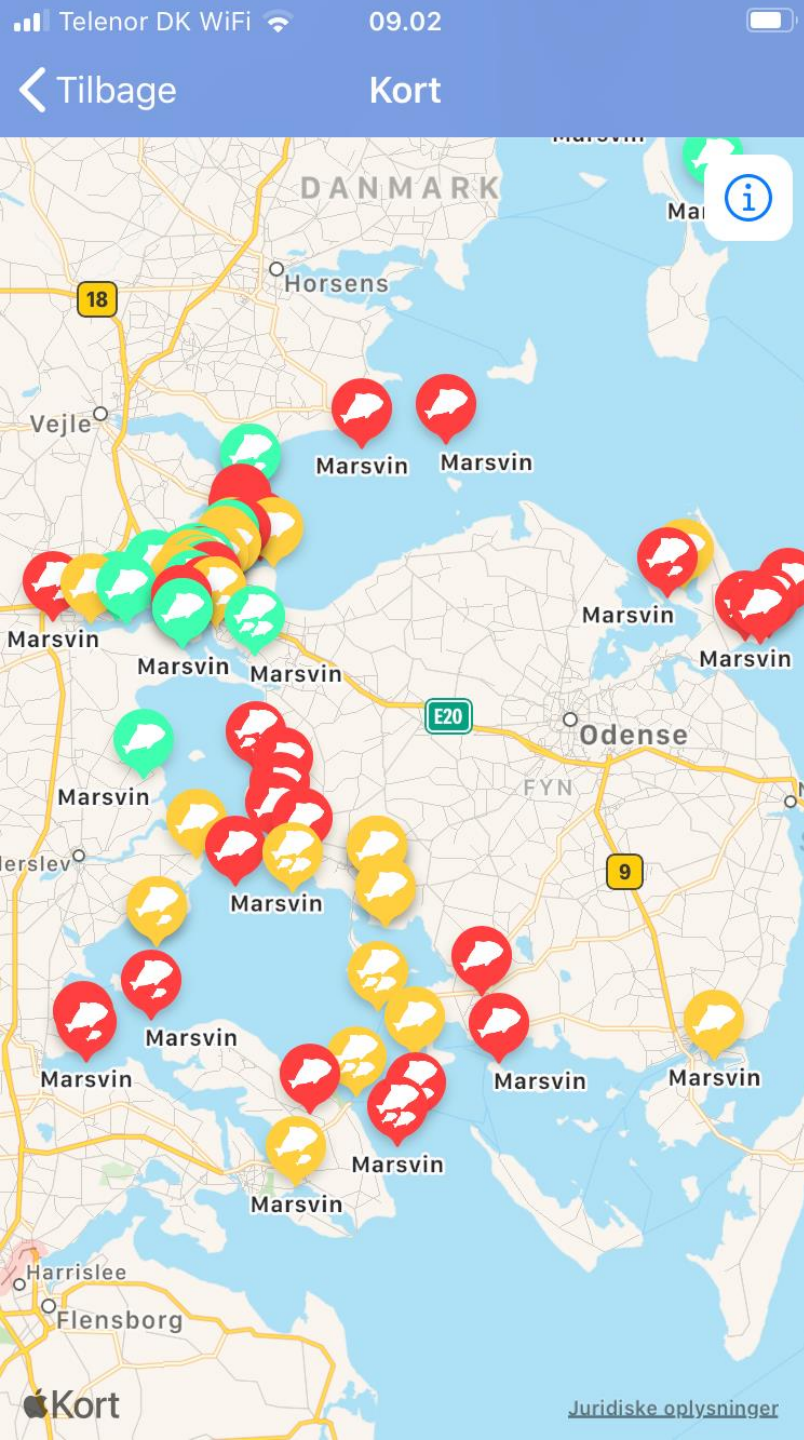
Campus Odense Active Living

Aim: To include the city of Odense in an outdoor living lab on 80 HA land around the university.

Mediapartner: Fyens Stiftstidende
Collaborative proces.

More than 1.000 input from citizens, employees, students and civil society.





MARINE TRACKER

Since 2019

+5.000 sightings

+2.500 participants

Data on motivation:

Environment

Interest in marine life

Local community



TV 2/FYN OG SDU GI'R DIG
FRIT LEJDE



<https://www.tv2fyn.dk/frit-lejde-elskrot/se-mini-dokumentar-om-elskrot-sadan-satte-sdu-professor-alt-pa-et-braet>

26. januar 2013

FIND A LAKE





OUR HISTORY

THE FUTURE?

BESPOC
SCIENCE LITERACY

KNOWLEDGE CENTER

BESPOC (Ayrís & Ignat 2020)

PARTNERSHIP: INTERNAL AND EXTERNAL PARTNERS

SINGLE POINT OF CONTACT

RESEARCH SUPPORT

PUBLIC ENGAGEMENT

SCIENTIFIC LITERACY

PROJECT MANAGEMENT

ADCOACACY

FAIR DATA

DISSIMINATION OF SCIENTIFIC INFORMATION TO THE PUBLIC

FUNDING

BESPOC: STAKEHOLDERS IN CITIZEN SCIENCE?

CIVIL SOCIETY

Associations
Churches
Clubs
Girls and Boys Scouts
NGO's

PUBLIC SECTOR

Libraries
Agencies
Government – local, national, global
Municipalities
Media partners

EDUCATION

University students
High schools
Public schools

PRIVATE SECTOR

Media partners
Industri
Businesses
Public Private Partnerships

SCIENCE LITERACY

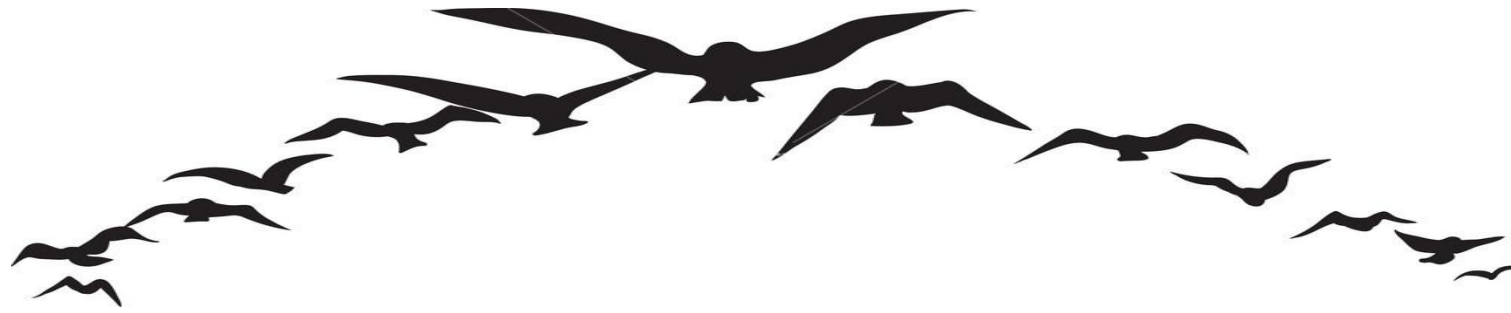
Working with public schools and high schools in a Citizen Science setting in order to achieve inclusion, contribution and reciprocity (Golombic et. al. 2017) and Scientific Literacy Skills:

1. Understand methods of inquiry that lead to scientific knowledge

- a. Identify a valid scientific argument*
- b. Evaluate the validity of sources*
- c. Evaluate the use and misuse of scientific information*
- d. Understand elements of research design and its scientific findings*

2. Organize, analyze, and interpret quantitative data and scientific information

- a. Create graphical representations of data*
- b. Read and interpret graphical representations of data*
- c. Solve problems using quantitative skills, including probability and statistics*
- d. Understand and interpret basic statistics*
- e. Justify inferences, predictions, and conclusions based on quantitative data*



SCIENTIFIC LITERACIES

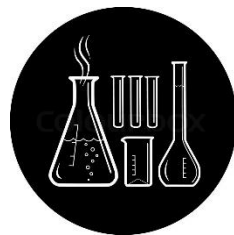
Media literacy (digital dannelse) (Potter 2010)

News literacy*

Environmental literacy (Merenlander 2016; Hsu 2018)

Health literacy**

Computational thinking (Denning et al. 2019)



* <https://www.schooljournalism.org/news-literacy-overview/>

** <https://www.sst.dk/~media/18DDC88AE81F46C7815E28218443B311.ashx>

REFERENCES

Ballard, H.L., Dixon, C.G.H. and E.M. Harris (2017). “Youth-focused citizen science: Examining the role of environmental science learning and agency for conservation”. *Biological Conservation*. Volume 208, April 2017, Pages 65-75.

<https://doi.org/10.1016/j.biocon.2016.05.024>

Bonney, R.; Cooper, C.B.; Dickinson, J.; Kelling, S.; Phillips, T.; Rosenberg, K.V.; Shirk, J. (2009) “Citizen science: A developing tool for expanding science knowledge and scientific literacy”. *BioScience* 59, 977–984.

Chia-Hsuan Hsu, Te-En Lin, Wei-Ta Fang and Chi-Chang Liu 1 (2018). “Taiwan Roadkill Observation Network: An Example of a Community of Practice Contributing to Taiwanese Environmental Literacy for Sustainability”. *MDPI Sustainability* 2018, 10, 3610.

<https://doi.org/10.3390/su10103610>

Denning, P.J. and Tedre, M. Computational Thinking. The MIT Press, 2019.

Golumbic, Y. et al. (2020). “Science literacy in action: understanding scientific data presented in a citizen science platform by non-expert adults.” *International Journal of Science Education, Part B*

Communication and Public Engagement. <https://doi.org/10.1080/21548455.2020.1769877>

Gormally, Cara; Peggy Brickman, and Mary Lutz (2012) Developing a Test of Scientific Literacy Skills (TOSLS): Measuring Undergraduates’ Evaluation of Scientific Information and Arguments. *CBE—Life Sciences. Education* Vol. 11, 364–377, Winter 2012. DOI: 10.1187/cbe.12-03-0026

Ignat, Tiberius, and Paul Ayris. 2020. “Built to Last! Embedding Open Science Principles and Practice into European Universities”. *Insights* 33 (1): 9. DOI: <http://doi.org/10.1629/uksg.501>

Merenlender, A.M.; Crall, A.W.; Drill, S.; Prysby, M.; Ballard, H. (2016) “Evaluating environmental education, citizen science, and stewardship through naturalist programs”. *Conserv. Biol.* 30, 1255–1265.

Potter, W. James (2010-11-30). "The State of Media Literacy". *Journal of Broadcasting & Electronic Media*. 54 (4): 675–696.

THANK YOU!

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