

## The Future of Citizen Science – Truly Participatory?

By the editors\*

*Doing It Together Science (DITOs) will implement many innovative participatory event formats across Europe focusing on the active involvement of citizens in two critical areas: the cutting edge topic of biodesign and the pressing area of environmental monitoring. The project will advance the EU Responsible Research and Innovation agenda by moving beyond more traditional approaches into direct engagement that builds upon DIY, grassroots, and frugal innovation initiatives so that in the short and medium term we sustain localized capacity building and in the long term, the effects of these grassroots efforts channel into policy action at different levels.*



The consortium includes a pan-European network (European Citizen Science Association ECSA<sup>1</sup>, linking practitioners, scientists, and supporting policy makers), Small Medium Size Enterprises (Tekiu<sup>2</sup>; Eutema<sup>3</sup>), universities (UCL; Université Paris Descartes - CRI; Université de Geneve), science galleries, museums and arts organizations (Kapelica Gallery<sup>4</sup> / Kersnikova; Medialab-Prado<sup>5</sup>; RBINS<sup>6</sup>) and NGOs (Meritum Association<sup>7</sup>; Waag Society<sup>8</sup>). These organizations cross multiple countries and languages, enabling coverage of much of Europe in its native languages.

Dr. Katrin Vohland (Naturkundemuseum, Berlin), vice-chair of the European Citizen Science Association added: "DITOs provides a great opportunity not only to experiment with different pathways for different persons and communities to engage at different intensities but to enhance mutual learning for lasting effects at the interface of science and society."

### Inclusion of bottom-up, grassroots citizen science groups

1 <sup>1</sup><http://ecsa.citizen-science.net/>

2 <sup>2</sup><http://www.tekiu.com/>

3 <sup>3</sup><https://www.eutema.com/>

4 <sup>4</sup>[http://www.kapelica.org/index\\_en.html](http://www.kapelica.org/index_en.html)

5 <sup>5</sup><http://medialab-prado.es/>

6 <sup>6</sup><https://www.naturalsciences.be/>

7 <sup>7</sup><http://www.annalindhoundation.org/members/society-non-formal-education-meritum>

8 <sup>8</sup><https://www.waag.org/en>

Within DITO, two organizations have strong ties and reputation in grassroots citizen science projects: the Waag society in Amsterdam and the artist from Kapelica Gallery in Ljubljana. The profiles of other participants in DITO are closer to research institutes that foster a more traditional perspective on citizen science with the idea that citizens constitute an amplifying force in data-gathering for the advancement of science. This highlights an interesting tension between grassroots and top down citizen science.

The bottom-up, grassroots perspective emphasizes that “Responsible Research” means to include everyone in the research process who wants to be included, by doing citizen science and allowing citizens to play an important part on communicating research methods and results to an audience as clearly as possible. This vision builds on “Open Science,” which insists 1) that all the process of science (not just the results) needs to be shared to the public, allowing other people to build upon what has been shared; 2) that science can and should be conducted outside the walls of academia through Citizen Science and DIYSience. Here, both “traditional science” and “open” and “participatory science” hopefully converge towards the same goals: contribute to knowledge gaining, solve major problems improve the scientific understanding of the public and push the boundaries of science.



*KiiCS project - Installation at the Kapelica Gallery (Ljubljana, Slovenia). Philip Ross: “Juniors’ Returns”, 2006. © Miha Fras / Kapelica Gallery archive*

### Grassroots citizen science practitioners’ needs

Some critics have raised concerns about unpaid work citizens are asked to do when taking part in Citizen Science and Responsible Research and Innovation (RRI). They have highlighted how often tax paying citizen scientist spend years of work developing concepts and ideas that are often re-used by someone who win a grant to understand citizen science, largely ignoring what citizen scientist represents. In terms of policy support, grassroots citizen science practitioners and their communities have specific needs such as:

- a) A way to connect their community to academic science in a more substantial way (not only PhD students in their limited spare time), advocating to support hackspaces, DIY bio labs, or science shops inside universities or scientific/cultural institutions that encourage collaboration between university/institution researchers at all career levels together with groups and communities from outside those universities/institutions. Good examples are the Imperial College Advanced Hackspace in London and the Manchester metropolitan digital innovation space.



Both provide support to mixed internal/external communities. Taking full advantages of these kinds of collaboration would make everyone feel like their time was well spent.

- b) Funded positions for community managers (this work time is time-consuming and usually undervalued), either through grants or as staff positions, perhaps at the kind of hackerspaces mentioning above.
- c) Instead of only funding new initiatives, offer sustainability funding for preexisting successful volunteer-run projects that might otherwise die out – rather than funding basic infrastructure for DIY science communities (funding space, personnel, some basics overheads) –this gives such communities the chance to professionalize and start applying for further funding.
- d) Maker communities bridge the line between citizen science and knowledge transfer – perhaps it makes sense for the two strands to sometimes join forces in terms of policy-making and funding.
- e) Similarly, DIY science/maker communities have a lot more to offer science than just the development of DIY data collection. But here is an open question - is citizen science only about novel empirical research, or does it also includes scientific knowledge transfer?
- f) To ensure that DIY science (typically volunteer-run project/communities, without the resources of capacity to afford conference registration fees or to attend weekday meetings) can expect the same level of representation and support as any other stakeholder in the citizen science movement, if it is claimed that they are part of a movement.

## Lessons learned for Synenergene:

Public policies on citizen science should take into account the needs and potential of grassroots communities and should address them adequately. This means grassroots Citizens Scientists need to be able to influence how EU taxpayer money will be spent. This move towards transparency of citizen science funding and inclusion of bottom-up, grassroots citizen science groups is necessary to keep the “Responsible Research and Innovation” concept all its weight and importance.

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\* This article was inspired by comments made by a number of members of the DIYbio community who attended the Do It Together (DITO) Science EU Program stakeholder roundtable in Berlin on November 8<sup>th</sup>, 2016.