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Every citizen a scientist? An EU project tries to change the face of research

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Would you like to help researchers understand the workings of our sun, or discover how large crowds of people can work together? While you may think such breakthroughs are the preserve of highly-specialised scientists with expensive equipment, the EU-funded project SOCIENTIZE allows you to lend your skills and time to some exciting research.

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[SOCIENTIZE](#) [2] builds on the concept of '[Citizen Science](#) [3]', which sees thousands of volunteers, teachers, researchers and developers put together their skills, time and resources to advance scientific research. Thanks to open source tools developed under the project, participants can help scientists collect data - which will then be analysed by professional researchers - or even perform tasks that require human cognition or intelligence like image classification or analysis.

Every citizen can be a scientist

The project helps usher in new advances in everything from astronomy to social science.

'One breakthrough is our increased capacity to reproduce, analyse and understand complex issues thanks to the engagement of large groups of volunteers,' says [Mr Fermin Serrano Sanz](#) [4], researcher at the [University of Zaragoza](#) [5] and Project Coordinator of SOCIENTIZE. 'And everyone can be a neuron in our digitally-enabled brain.'

But how can ordinary citizens help with such extraordinary science? The key, says Mr Serrano Sanz, is

in harnessing the efforts of thousands of volunteers to collect and classify data. 'We are already gathering huge amounts of user-generated data from the participants using their mobile phones and surrounding knowledge,' he says.

For example, the experiment '[SavingEnergy@Home](#) [6]' asks users to submit data about the temperatures in their homes and neighbourhoods in order to build up a clearer picture of temperatures in cities across the EU, while in Spain, [GripeNet.es](#) [7] asks citizens to report when they catch the flu in order to monitor outbreaks and predict possible epidemics.

Many Hands Make Light Work

But citizens can also help analyse data. Even the most advanced computers are not very good at recognising things like sun spots or cells, whereas people can tell the difference between living and dying cells very easily, given only a short training.

The SOCIENTIZE projects '[Sun4All](#) [8]' and '[Cell Spotting](#) [9]' ask volunteers to label images of solar activity and cancer cells from an [application](#) [10] on their phone or computer. With Cell Spotting, for instance, participants can observe cell cultures being studied with a microscope in order to determine their state and the effectiveness of medicines. Analysing this data would take years and cost hundreds of thousands of euros if left to a small team of scientists – but with thousands of volunteers helping the effort, researchers can make important breakthroughs quickly and more cheaply than ever before.

But in addition to bringing citizens closer to science, SOCIENTIZE also brings science closer to citizens. On 12-14 June, the project participated in the [SONAR](#) [11] festival with '[A Collective Music Experiment](#) [12]' (CME). 'Two hundred people joined professional DJs and created musical patterns using a web tool; participants shared their creations and re-used other parts in real time. The activity in the festival also included a live show of RdeRumba and Mercadal playing amateurs rhythms' Mr. Serrano Sanz explains.

The experiment – which will be presented in a mini-documentary to raise awareness about citizen science – is expected to help understand other innovation processes observed in emergent social, technological, economic or political transformations. 'This kind of event brings together a really diverse set of participants. The diversity does not only enrich the data; it improves the dialogue between professionals and volunteers. As a result, we see some new and innovative approaches to research.'

The EUR 0.7 million project brings together 6 [partners](#) [13] from 4 countries: Spain (University of Zaragoza and TECNARA), Portugal (Museu da Ciência-Coimbra, MUSC ; Universidade de Coimbra), Austria (Zentrum für Soziale Innovation) and Brazil (Universidade Federal de Campina Grande, UFCG).

SOCIENTIZE will end in October 2104 after bringing together 12000 citizens in different phases of research activities for 24 months.

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