The Brain Buskers Project: taking science to the streets

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Brain Buskers is an initiative developed by the University of Coimbra in Portugal. The project aims to join science with the daily and cultural life of the city in order to engage local communities. Its informal nature promotes the understanding of biochemistry in everyday life, demystifying the image of scientists and increasing scientific literacy. The project has also helped to inspire scientists with the skills and confidence to hold and inspire a passing audience with science.

Busking for informal learning

The rapid progress of science and technology has had a huge impact on society, with biomedical sciences being one of the fastest growing research areas with a direct influence on human health and well-being. However, it is clear that there is still a gap between science and society, which hampers the full exercise of citizenship. In order to address this issue, the knowledge produced by scientific research must be disseminated to all audiences, both scientists and non-scientists. Science communication is a powerful tool to overcome the barrier between science and society, as it promotes the involvement of different groups in the social implications of scientific research and also contributes to increasing scientific culture and citizenship.

In this context, we also believe that informal education can be a great tool to teach science and promote curiosity towards scientific content. This type of experience usually takes place outside educational establishments, and often occurs in a spontaneous and creative way for learners, through daily life interactions and shared relationships among members of society. The selection of public and informal environments can be crucial in engaging society in science-related issues: discovering science at an informal venue produces awareness and excitement, and can help people to feel more confident in asking questions and expressing their views.

In this regard, and inspired by buskers' street performances, the project 'Brain Buskers' was born,

Figure 1. Brain Buskers events at different public spaces.

Type of Activity	Objectives	Target Audiences
Neuron model construction	Understand the biology of neurons and how they communicate with each other	Children, teenagers and young adults
Human–human interface kit	Explore the concept of electrophysiology and synapses	Children, teenagers, young adults and adults
Secret messages	Explore the concept of pH	Children and teenagers
Visual brain teasers	Encourage critical thinking	Teenagers, young adults and adults
Speed dating with scientists	Build a solid trust between scientists and society	Young adults and adults

Table 1: Examples of hands-on activities and games performed during the Brain Buskers events.

aiming to capture the attention of the public to unveil and explore biochemical phenomena in an informal environment, taking advantage of the scientific expertise of the researchers of the Center for Neuroscience and Cell Biology (CNC) from the University of Coimbra. The researchers left their laboratories and embraced the challenge to take science to the city's daily life and communicate with the society in public spaces, such as streets, parks, beaches and pubs, among others (Figure 1). With this project, we aimed to bring science close to the public by creating meeting places between scientists and citizens, building informal and unexpected conversations about scientific contents, with the main focus on CNC target research fields: neuroscience and disease, metabolism and active ageing, and biotechnology.

The Brain Buskers events, organized during the last year, transformed different public areas into an arena for public learning and scientific debate. The researchers talked about scientific curiosities, processes and findings, and performed hands-on activities, games and brain teasers in order to engage the local community, inserted in the local agenda and the daily life of the citizens. Table 1 exemplifies some activities that were performed during the project.

The events were held in different public spaces with different environments and designed to attract different publics. Table 2 provides some examples of the events organized, the target audience and the estimated number of people engaged.

By analyzing the results, we observed that the most the most successful events (in terms of numbers of people reached) were at were at Queima das Fitas and on city buses, which reinforces the idea that science communication initiatives can work well when inserted both into existing entertainment events with large audiences or appearing spontaneously in people's daily routine. The events which fell short of our expectations were at Figueira da Foz beach and Expofacic. In the first one, we can reasonably say that the unusual weather conditions for the time of the year kept people away from the venue. At Expofacic, the activities occurred during dinner time, which may explain the low number of children and families who would have engaged in the activities. This observation will be taken into account in planning future initiatives during this festival.

The Brain Buskers initiative was promoted on the CNC social media networks, Facebook and Instagram,

Table 2: A selection of Brain Buskers events and estimated audience engagement

Date	Time schedule	Place	Description	Audience	People engaged	Researchers involved
Tues. 29 May	21:30 – 22:30	Teatro Académico Gil Vicente	Gil Vicente Academic Theatre, following the performance of a marionette company	Young adults and adults	30	4
Fri. 1 June	15:00 – 17:00	Academia Futebol Lordemão	Lordemão Football Academy	Children	15	7
Fri. 31 Aug	15:00 – 18:00	Barra beach, Aveiro city	Scientific activities at the beach	Children, teenagers, young adults & adults	75	3
Fri. 21 Sept	18:00 – 20:00	Casa das Artes Bissaya Barreto	During the matinée event inserted in the programme of the venue	Children and young adults	35	3

to let people know about the different events that would take part at different locations. Furthermore, by revealing the locations of these events, we did not lose the non-generic aspect, yet, we stimulated the search by audiences already engaged with our events.

On Facebook, the different episodes of Brain Buskers were divulged as both Events and Posts, by sharing the event's outreach poster on the official CNC Instagram and Facebook page. By talking with the public during the events, we learned that promotion on social media particularly encourages parents to take their children to the events held in public spaces suitable for families. During the events, we also posted photos and videos on the InstaStories tool and Facebook photo album, which encouraged people to repost, share and come to future events.

Furthermore, by promoting the different Brain Buskers events in our CNC social media accounts, we have encouraged people's curiosity to know more about the institution itself and we have built the public trust towards to science and researchers.

In summary, we can conclude that the Brain Buskers project has had success in bringing science to citizens. In total, we had around 764 people participating in our activities throughout the 16 events. Social media proved to be a useful tool to promote events suitable for families, and also to foment institutional recognition, which in turn has led to a snowball effect towards our scientific research and science communication initiatives. Regarding the feedback we received at different events, people became more conscious about several biomedical concepts and aware of the ongoing research at our center thanks to the unexpected and informal nature of the initiative. We realized that to attract and engage a larger number of people, the events inserted in the daily life routine or associated with local culture agenda are the most successful.

Moreover, this project has been inspiring and engaging for CNC researchers (volunteers) in science communication initiatives, giving them tools to improve their public speaking and better interact with the public. Furthermore, this initiative constitutes an additional motivation for scientists to conduct their research for the benefit of society. Additionally, the project has been supporting the establishment of improved communication strategies and team spirit inside the research centre.

Lastly, the activities allowed us to validate our science communication approaches in order to improve and understand the best practices to engage the community in science and scientific themes. During the project we were able to reach different sections of the public, with more incidence in children and families. In future events, we intend to reach a different section of the public, promoting new activities in places frequented by not only families, but especially by adults and young adults. Future events will take advantage of new activities developed according to the necessities observed during past events and also new activities developed during other science communication projects. ■