

SNOWMASS 2021 Letter of Interest

Public Education and Outreach

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Summary

Since 2016 we have been taking science to non-traditional venues, specifically music and culture festivals.

Starting with the WOMAD festival in the UK, with one Physics Pavilion, the programme has grown to total four European music festivals in 2019 : WOMAD (UK), Colours of Ostrava (Czech Republic), Pohoda (Slovakia) and Roskilde (Denmark). All take place in what is known as 'festival season' (summer time). 2020 had these four Pavilions on schedule until the arrival of Covid-19.

This work aims to identify a likely candidate in the USA and lay the ground work (COVID permitting) to take science to a festival in the USA.

Content

The festival programme is a unique way of reaching a public that generally has little direct contact with physics or science. We are taking science to 'where the people are', in a fixed location, often a field, and putting scientific activities on a programme alongside musical concerts, art and literature events, comedy, children's activities. As a result we are not only able to engage with people in a meaningful way (a constant presence over a 3 or 4 day period, return visitors, continuing conversation) but also bring science into the mainstream conscience thereby breaking into the all-too-frequent misconception of physics and science as only '*for the smart people*' or '*for nerds*' or quite simply '*not for me because I just don't understand it*'.

People are often in awe of the fact that they have actual scientists in front of them and are able to ask them any question. They are relaxed and happy in the festival environment. Experience has shown that the key to success is tailoring the programme to the demographic of the audience and the 'style' of the festival itself, together with having a good team of volunteer physicists of all ages on hand. Even those festival-goers who really did not like science at school, gave up on it and ever since have steered away from all things 'science', have had their curiosity piqued and begun engaging with the subject again. Many become repeat visitors.

For the younger audience the benefits are several-fold. First, parents have discovered that their child has e.g. a passion for science or computing, of which they knew nothing. Second, children have been known to say to us 'this is terrific, my parents are terrible at computers/science, and here I've been coming to all the workshops and learning so much, while they are doing other things'. The result from this can be life-changing, for example there have even been questions from parents asking what topics their child should study at school as they realise how much they love science.

Each Science Pavilion is a collaboration between CERN, the festival itself and the physics departments of institutes or universities in the local area. Responsibility for resources is shared between the three partners, as are financial costs.

The three original collaborators from the first festival, Connie Potter at CERN, physicist Roger Jones from Lancaster University (UK) and Chris Thomas of Iowa State University, the logistics manager, have joined forces under the name 'The Big Bang Collective' in efforts to expand to other countries and other types of festivals.

The basic Science Pavilion format, stretching over the entire festival (3 or more days) includes:

A curated programme of talks

Workshops (e.g. "Build Your Own Cloud Chamber")

Live Link (sometimes to CERN, sometimes NASA)

Outdoor 'hands-on, walk-up' activities

The speakers and topics provide a variety of content along three broad general themes:

CERN speakers on CERN programmes / current interest

National speakers on HEP topics / current interest

Well-known science personalities on more general science topics

Now more than ever it is essential that we reach as many members of the general public as possible. Science is being used as a political tool, and all too many of the public are doubting science and scientists. Equally, with a time of financial reckoning coming to many countries over the next years, following huge unforeseen spending due to the Covid-19 pandemic, physics will have a fight on its hands to stand any chance of maintaining funding, with medical science most likely coming at the top of any science funding lists.

The US has a very long, glorious tradition of music festivals. It also has an incredible community of sci-comm engaged physicists, from students to senior staff. The Big Bang Collective could add their experience and expertise from over a dozen events to complete a winning formula.

Is now the time for us to join forces to bring Science Pavilions to US music festivals?

Take a look, see what you think: <https://www.youtube.com/watch?v=L7UOK4nww6E>

References

WOMAD World of Physics (UK)

<https://womad.co.uk/the-world-of-physics-2019-line-up/>

Melting Pot at Colours of Ostrava Festival in the Czech Republic

<http://ipnp.cz/thebigbangstage/>

Pohoda Festival in Slovakia

<https://www.pohodafestival.sk/en/news/cern-comenius-university-and-the-big-bang-collective-present-magical-science-at-pohoda-2019>

Roskilde Festival in Denmark

<https://www.roskilde-festival.dk/en/years/2019/acts/cern-and-the-niels-bohr-institute/>