STFC Public Engagement Large Award 2014 Successful Projects

Professor Paul Roche - Science Made Simple

‘Space Made Simple’

1st August 2015 to 31st July 2017

£60,509

The establishment of Space Made Simple (SpMS) will extend a highly successful astronomy/space outreach programme currently only funded for delivery across Wales (AstroCymru), and start to extend the project across the UK. It will also provide some essential support for the (currently unfunded) Faulkes Telescope Project (FTP), and help with the development of an education programme to support the Gaia space mission.

Central to the programme will be access to state-of-the-art facilities such as a portable 3D projection system, online simulations and educational resources, and use of research-grade, remotely-controlled telescopes around the globe (FTP). These will be used to deliver exciting and inspirational workshops, talks and shows to a variety of audiences. This combination reinforces the learning objectives of each programme, and will allow delivery of educational shows covering a broad range of STEM topics. The visual impact of high-tech delivery and the engaging subject matter ensures that it captures the attention of learners of all ages and abilities.

SpMS will include school and public events, lectures and workshops, and online resources and facilities based around astronomy and space science. It will directly reach 15,000 students/public over a 2 year period (with even more indirectly via online resources), with a particular initial focus on an expansion of the project into England, to socio-economically deprived and geographically isolated areas.

It will tap into current excitement around ESA missions such as Rosetta, Gaia and ExoMars, and NASA missions such as Dawn, Pluto Express and JWST, whilst also targeting manned space flight and the ISS (e.g. Tim Peake’s Nov. 2015 Principia flight). A range of educational resources will be produced that will be freely available to all schools across the UK, targeting ages 8-19, engaging them with e.g. the Gaia mission and carrying out follow-up observations of newly-discovered targets using robotic telescopes.

Mr Jamie Lochhead

Windfall Films Ltd

‘Einstein’s Happy Thought: An animated film marking the 100th anniversary of General Relativity’

15th April 2015 – 14th December 2016

£41,697

This project will see Oscar shortlisted animator Eoin Duffy create a striking, contemporary animation that explains the wonder of Albert Einstein’s General Relativity. The film will be launched and
distributed widely online in the week of November 25th 2015 - the 100th anniversary of Einstein's masterpiece.

Albert Einstein is the most famous figure in science. His name is synonymous with genius. Yet very few people know what he actually figured out. Einstein produced one of history's most creative and important revisions of our concepts about the universe. The theory of general relativity was not merely the interpretation of experimental data or the discovery of a more accurate set of laws. It was a whole new way of regarding reality.

Einstein showed us that space and time are linked and are malleable. Matter defines the shape of space and time - and in turn, their shape creates what we feel as gravity. It's mind-bending stuff. It involves letting go of instincts about space and time we've learned living in the everyday world around us. But it's no more difficult than looking out of the window and seeing the world as a round planet that's spinning through space. If you can do that, you'll be fine with relativity.

Einstein made his discoveries sitting at his desk, visualising physical situations. This animation will bring those thoughts to life. It will be a lively visual journey beginning in Einstein's young mind and ultimately reaching the extremes of modern cosmology. His vivid thought experiments will provide a clear, step-by-step journey through the key ideas of general relativity.

Dr Katarina Markovic
University of Portsmouth

‘Entropy: Live Astronomy Documentary Meets an Electronic Music Performance’

1st April 2015 – 31st March 2016

£20,000

Entropy is an art-science collaboration that aims to frame public talks about astronomy with a live audio-visual performance. It is as an astronomy-documentary-meets-electronic-music-concert and it will be performed at science, music, and art festivals across the UK. Alongside the main event several workshops will be organised, centred around the science and aimed at schoolchildren, where the children will be able to speak with the scientists to learn about astronomy.

For the audio-visual performance, bespoke music tracks have been produced, inspired and guided by the contents of the talks. To supplement them, visualisations will be created and projected onto special screens during performances to enhance the immersive and interactive aspects of the event.

Visual representations will be created from real astronomical data from experiments like the Sloan Digital Sky Survey and the Dark Energy Survey, as well as from computer simulations of supernova explosions and growth of the cosmic web, etc.

Videos of some of the concepts described in talks, such as the cosmic inflation at the birth of our universe, that are very difficult for the public to visualise, will be created and released into the public domain, under Creative Commons Licence.