

***Ingenious* grant winners 2011, by region and nation**

South West

Science Communication Unit, University of West England

Continuous Loop Project: adventures in wool n' engineering

The Continuous Loop Project is a unique creative collaboration between structural engineers and members of the yarn craft community. The natural synergies between yarn crafts, such as knitting and crochet, and structural engineering create a mutual starting point for meaningful conversations between craft-interested adults and structural engineers. A team of 20 structural engineers will deliver drop-in knitting/crochet activities at five Vintage and Steam Engine Fairs. The activities will be used to stimulate conversations between 400 craft-interested adults and 20 structural engineers about structural engineering. This drop-in festival environment can be challenging so the engineers will be supported with opportunities for developing their public engagement skills through participation in a practical training course and reflection during and after the activities. Findings from the project will be disseminated to the engineering, craft and public engagement communities.

DR HELEN FEATHERSTONE, helen2.featherstone@uwe.ac.uk

Cheltenham Festivals Limited

Engaging Engineering II – activity based public engagement training and development

Following on from the success of last year's *Ingenious* award, Cheltenham Science Festival will develop and deliver a second five-day intensive public engagement training course specifically designed for engineers, whilst addressing areas for improvement and exploring a sustainable model for the future. The target group for this activity is working qualified engineers in academic, private and public organisations. The programme offers a platform to explore effective communication with diverse groups of people in a variety of situations and combines training and practical live experience.

DR SHARON BISHOP, sharon.bishop@cheltenhamfestivals.com

Bristol Museums, Galleries and Archives

Bristol - Engineering city. Connecting the city's engineering communities, past, present and future

The project will bring together a community of engineering ambassadors from local companies and academic departments, who will be trained and supported to develop their communication skills by interpreting M Shed, Bristol's newest museum, engineering collections via live and recorded media for schools and other visitors. These activities will lead to sustainable outcomes, including a local team of engineer communicators with skills in live and mediated public education, an enthusiasm for engineering and its careers among the young people, and new interpretive resources.

MS DONNIE HOUSER, donnie.houser@bristol.gov.uk

Gallomanor Communications Limited

I'm an Engineer - get me out of here!

"I'm an Engineer, Get me out of here!" is a public engagement event where school students talk to real engineers online for two weeks. It's like X-Factor for engineers. Young people ask the questions, set the agenda and choose which engineer gets £500 to spend on further engagement work. Taking part is memorable, exciting and develops the skills and confidence of young people, engineers and teachers, promoting future engagement. Teacher packs which relate to the National Curriculum for STEM subjects ensure the learning the fun, interactive and of high quality. "I'm an Engineer" builds on the award-winning success of "I'm a Scientist, Get me out of here!"

MR SHANE MCCRACKEN, shane@gallomanor.com

Bloodhound Project Limited

Bloodhound SSC Ambassador programme

To enable maximum programme delivery to as many schools, colleges and public events as possible, a network of engineering and science Bloodhound Ambassadors will be developed, with support from *Ingenious* funding. The BLOODHOUND SSC engineering adventure is an attempt at the World Land Speed Record but with the number one aim of inspiring the next generation of scientists and engineers.

MR DAVID ROWLEY, dave.rowley@bloodhoundssc.com

South East

Medical Engineering Resource Unit (MERU)

Using photography and words to engage with engineering

This project will train the MERU engineers in taking effective, emotive photographs of our young disabled clients and the custom-made equipment we design and engineer for them, and to develop their skills in describing their work. We will then produce a MERU publication and on-line record which explores the impact our engineering work has on our clients and the communities they are part of.

MS SUSAN BRUMPTON, susan@meru.org.uk

University of Southampton, School of Electronics and Computer Science

"Blood on the floor": an engineering murder-mystery trail

This project is based on the popular 'Murder Mystery/CSI' format where members of the public, in particular girls, will be invited to 'solve' and investigate a science and engineering problem by engaging with a range of hands-on STEM-based activities in labs and other venues on the University of Southampton campus. The public experience of 'Blood on the floor' begins with a humorous reconstruction of a 'crime'. Participants then complete investigative activities to find out who committed the 'crime' using techniques and equipment from various fields of science and engineering. This might, for instance, include the use of lasers, GPS-based exploration, manipulation of complex robots, and DNA analysis. Teams of engineers (PhD students, early career researchers and/or members of staff), who are asked to 'bid' for a small amount of money will create a 'clue' closely-related to their STEM research area, and will be supported with a programme of public engagement training.

DR KLAUS-PETER ZAUNE, kpz@ecs.soton.ac.uk

London

Royal Institution of Great Britain

Engineering extracts: Short films on RiTV to promote and excite about all things engineering

Produced in conjunction with engineers who will be trained in TV presenting skills, the Ri will produce at least 10 broadcast-quality films about engineering. We will audition engineers with a variety of backgrounds and select 5 to work with the Ri team to produce five short films demonstrating an idea from their work. They will also work with a group of school children to produce another five films demonstrating a different aspect of their work. The films will then be distributed through the Ri's new online digital channel which is expected to have high global visibility.

MS OLYMPIA BROWN, obrown@ri.ac.uk

Guerrilla Science

Guerrilla Science 2011: taking engineering to music festivals

Guerrilla Science is an organisation that specialises in running science-based events at music festivals for an adult audience. We propose to work with ten to fifteen engineers on a series of events that will run at two music festivals and two London venues. Participating engineers will gain experience of working in close collaboration with science communication professionals, and communicating their work to an unusual non-specialist audience using innovative formats. Festival audiences will be given the opportunity to meet engineers and discover cutting-edge engineering projects through an experimental, entertaining and thought-provoking series of events that promote learning and dialogue around important issues in contemporary engineering.

MR LOUIS BUCKLEY, louis.buckley@gmail.com

Y Touring Theatre Company

Theatre of Debate: Tele-health

In partnership with Cranfield University, we will create, perform and publish two 45 minute Theatre of Debate® scripts for intergenerational performances in schools and community settings. Plays will be developed and initially performed by young people from two schools (provided by Creativity, Culture and

Education (CCE)) and a group of 'seniors'. The project will engage engineers, artists, young people (14-18) and seniors in an informed debate exploring the issues raised by tele-health/remote monitoring increasing their awareness of the impact of engineering in society and on our lives.

The project and the resulting scripts will engage directly with Science, Arts and Humanities syllabuses at GCSE and A level, as well as the Engineering Diploma, providing a valuable resource for teachers and STEM communicators. They will be marketed to every secondary school in the UK as well as science and engineering communication organisations, engineering institutions and other relevant bodies.

MR NIGEL TOWNSEND, n.townsend@ytouring.org.uk

New Economics Foundation

Sustained Engagement

This project will provide 60-100 engineers with practical experience of public engagement activities by staging a series of 12 public discussion events in three locations on a range of issues on the theme of engineering for sustainability. Participating engineers will present their solution to an engineering-related policy issue, allowing them to share their knowledge and reflect on the social impact of their work. The events will use a nef-designed process called Crowd Wise which encourages engineers to engage more deeply with audiences in order to seek consensus. 300-800 members of the public will discuss engineering and its impact on our daily lives. The three locations are London, Newcastle and Sheffield.

MR PERRY WALKER, perry.walker@neweconomics.org

West Midlands

Engineers WITHOUT Borders UK and Practical Action

Small is ... Festival 2011 & 2012 - family friendly events that to explore technologies that tackle global challenges

The festival will provide a space for the public to learn about technologies that offer solutions to global challenges, to develop new skills and be inspired about engineering and technology. Organised by Practical Action and Engineers Without Borders UK (www.ewb-uk.org), this weekend-long summer festival has been run successfully for the last two years and has much scope and potential to capitalise on its engagement potential.

MR ANDREW LAMB, andrew.lamb@ewb-uk.org

Energise7 Limited

EBOX - 'Engineering in a box, engineering outside of the box'

EBOX - 'Engineering in a box, Engineering outside of the box' is a project designed to give engineers the chance to help develop and then deliver a set of engineering and science experiments and activities which can be carried out within the school environment. The experiments are intended to enhance STEM learning in a practical manner whilst bringing to the forefront many of the physics and engineering concepts which are so important to the world in which we live. The engineers will have the opportunity to develop their own communication and presentation skills whilst running workshops for both the youth sector and also facilitating training for the teachers in the use of the resources created for the EBOX project.

MR MIKE RIDLER, mikeridler@energise7.co.uk

East of England

Cambridge Hands-on science (CHaOS)

Summer Roadshow 2011

The student-run CHaOS Roadshow will bring fun, interactive engineering activities to young people around the country. Hands-on experiments are demonstrated by enthusiastic engineering and science students from the University of Cambridge, who want to help spread the excitement of science to a wider audience. This month long tour will take in schools and public venues across the country. CHaOS also run a large public event in Cambridge that is open to the public as part of the Cambridge Science Festival, but are able to reach people from much further afield with their Summer Roadshow.

MR PHILIP GARSED, contact@chaossience.org.uk

Scotland

University of Glasgow

How big can we go, how small can we go

This project will develop a show that will take public audiences through a guided tour of atomic dimensions, developed by an early-career engineer who took part in the *Ingenious*-funded training course at last year's Cheltenham Science Festival. The show will aim to develop an informative and entertaining presentation on the theme "So just how big can we go? And how small can we go?" and answer the question, What can we see with extraordinary feats of engineering? The show will take the latest technology to new worlds that go unnoticed every day as we look at what and who make this possible.

JAMIE GALLAGHER, j.gallagher.4@research.gla.ac.uk

Glasgow Science Centre

All Roads

All Roads examines a controversial and timely project of major road building just as the M74 extension in Glasgow nears completion, finishing off a circle of motorways started in the 1960s which have entirely changed the face of Glasgow City. Bringing the public, from primary school to adults, together with engineers to discuss how the work of road building impacts on our daily lives. We will link with experts in other fields to explore the impact of major engineering works, including archaeologists, biodiversity experts, geographers and artist performers. To reach all ages Glasgow Science Centre and the Institution of Civil Engineers will run a year of tailored hands on events, encouraging interaction and discussion between public and engineers, trained in communication techniques.

MS TARA GIBSON, tara.gibson@glasgowsciencecentre.org

Engineers Against Poverty

An Engineer's toolkit for a developing world - Now is the time!

This project will develop and deliver a series of interactive workshops to create awareness, build capacity, and understand the realities re: the the UN Millennium Development Goals and the engineering challenges. The objectives of the project are as follows:

- 1 To increase awareness - within schools, communities, universities and employers - of the role of engineering and infrastructure in meeting the UN Millennium Development Goals and of the Engineers Toolkit.
- 2 To engage with these various audiences to create active debate on the social, environmental, ethical and cultural impacts of engineering. impacts of engineering
- 3 To develop the knowledge transfer and communication skills of the Project Team, enabling young practicing engineers to develop their public engagement skills through experiential learning, providing training workshops to students, peers and the public.
- 4 To provide a stimulus for school students to want to study engineering, a stimulus for university students to apply their skills to international development.

PROFESSOR PAUL JOWITT, p.w.jowitt@hw.ac.uk

Wales

Techniquet Glyndwr

Switched on to Engineering

This project will bring together engineers from the Department of Aeronautical and Mechanical Engineering, Glyndwr University, those working in local and regional engineering companies, and Techniquet Glyndwr, the Science Discovery Centre in North Wales, to raise young people's awareness of the nature and diversity of engineering, and to show them the variety of opportunities available in engineering.

At the same time it will train young engineers in public engagement and provide them with a forum in which to demonstrate their passion for engineering as they showcase their work. The activities will include a competition to design planes that will be tested in the University flight simulator as well as a STEM Fair

with a focus on engineering that will be held on the University campus at which engineers from the University and from external companies who have participated in the training will showcase their areas of engineering.

MR ANDY JONES, a.jones@glyndwr.ac.uk

Northern Ireland

Bombardier Aerospace

High Flyers of the Future

Using flight as an overarching theme, the High Flyers programme aims to be a journey of discovery and excitement and will offer pupils a wide variety of interactive challenges to interact with engineering, understand the science and art of flight and to highlight the job opportunities available in aerospace.

MR TONY MONAGHAN, tony.monaghan@aero.bombardier.com

FELLOWSHIP AWARDS

Yorkshire and Humberside

University of York

Is Recording Engineering? Skills and knowledge in the audio industry

This fellowship looks to illuminate such questions by understanding and challenging perceptions of the work of 'recording engineers' and by communicating these findings to a wide audience so as to contribute to public and industry understandings of engineering in its broadest sense. The Fellow will become a champion of the connections between sound recording practice and engineering skills, illustrating their commonalities and explaining their differences, exploring how engineering contributes to the trans-discipline of music technology. The term recording engineer suggests an individual who records sound by applying engineering principles, but to what extent is this the case? Is 'engineer' (as used in many countries) the correct term or is 'master of sound' (Tonmeister, German) more appropriate? To what extent can the 'recording engineer', a role perceived by some as a glamorous one, illuminate the process and discipline of engineering? Can the recording engineer protect their often precarious and ad-hoc employment by a realisation of the extent to which they are an engineer (via their transferable skills, for example)? Or are they technicians, acousticians and/or musicians for whom the term 'engineer' is entirely inappropriate? To what extent should engineering feature in Music Technology syllabi?

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