

Faculty of Health and Life Sciences

Wellcome Trust Public Engagement Grants 2016-2017

Meet the Scientists on Tour

Klara Wanelik and Rebecca Jones, Institute of Integrative Biology

This project builds on the existing 'Meet the Scientist' brand, which is a well-established and successful public engagement activity organised by the Faculty of Health and Life Sciences.

Our primary aim is to reach an even wider public, who may not choose to go to a museum, but who have the potential to be equally engaged, by taking the existing project 'on tour' to venues other than museums, such as shopping centres, train stations and music festivals. We believe that taking science into places where it is not expected will lower barriers to engagement, through challenging perceptions of science.

Through the project, we also aim to leave a legacy by creating new, high-quality, ecology themed public engagement activities which will be re-usable in a range of different environments.

SciZines

Maria Afonso, Institute of Infection and Global Health

The project *SciZines* will make use of printed publications – zines (small-circulation not for profit, self-published work of original or appropriated texts and images) - to educate and raise scientific awareness. At the same time the project will also act as a bridge between scientific communities and artistic alternative communities and bring these two worlds together. As zines are popular with alternative, marginalized and often deprived communities we would hope to be able to engage communities that are sometimes left out of science communication efforts.

We will create three different publications:

- *"Public Engagement – a zinetroduction"* which is aimed at undergraduate and postgraduate students and will raise awareness to the importance of public engagement in modern research efforts.
- *"Rudolph the SneeZine Reindeer"* – stemming from IGH's popular Christmas lecture (Rudolph the Sneezing Reindeer) this zine is aimed at children and will feature simple information on how we get sick and what we can do to prevent getting poorly.
- *"Vaccine"* – is a zine on infectious diseases aimed at young adults that will talk about the microbial world, common diseases caused by viruses and bacteria and how vaccination works.

The zines will be distributed on campus, among the zine making and DIY communities at zine and maker festivals, and in schools.

The Personalised Renal Monitoring via Information Technology (PERMIT) Project

Jennifer Downing and Ahmed Al-Naher, Institute of Translational Medicine

We are setting up a new renal patient group in conjunction with the Liverpool Heart and Chest Hospital and their SURE patient group. The aim is for this group to work with us to contribute to and shape the work we are doing to improve renal function monitoring in patients with heart failure.

This grant will support us to work with the patient group to design a workshop and questionnaire to gather patient views on different types of monitoring devices, telehealthcare systems and care pathways, in order to inform our work and ensure that it is acceptable to patients as it develops. Such engagement work is vital to the development of good research, particularly when it is the end result of the research to have direct applicability to patients and their health.

North West Cancer Research Centre Annual Symposium 2017: Engaging with secondary school students and researchers

Sarah Coupland and Ian Prior, Institute of Translational Medicine

The North West Cancer Research Centre will be hosting its second annual Scientific Symposium in April 2017. Our aim is to address the serious health challenges present in the Liverpool-Merseyside region and promote the collaborative research alliances developed across the North West.

This grant will enable us to support 20 students from 10 local secondary schools to attend the Symposium. Alongside attending the Symposium there will also be opportunities for students to meet scientists and tour the cancer research labs. Through this activity we hope to make science, and particularly cancer research, more understandable and more exciting and further students' knowledge of the main cancer themes.

Pets, Vets and Datasets at Edinburgh International Science Festival

Alan Radford and Bethaney Heayns, Institute of Infection and Global Health

The Small Animal Veterinary Surveillance Network (SAVSNET) has been selected to run an activity at Edinburgh International Science Festival, one of Europe's largest Science Festivals.

The aim of the project is to introduce members of the public to a new area of science - Health Informatics. Health Informatics reuses electronic health records from veterinary practitioners about their patients, for research and surveillance.

We will develop a range of hands-on activities for the Festival which will show how data is collected, and what type of data is collected and will give the public the opportunity to interact with real data, and interpret it and present their results.

Engaging directly with the public is a great opportunity to understand the sensitivities and acceptability of what we as scientists do, to present some of the benefits of Big Data science, and also to explore how this data should be presented to members of the public for maximal benefit.

International Care Of the Dying Evaluation (CODE): quality of care for cancer patients as perceived by bereaved relatives.

Stephen Mason, Marie Curie Palliative Care Institute, University of Liverpool and Catriona Mayland, Royal Liverpool University Hospital

This is a European Union- Latin American study, the overall aims of which are to:

- Advance the international evidence base in the care of dying cancer patients by undertaking a survey of bereaved relatives' views about current quality of care within the hospital setting across seven participating countries
- Develop an international version of the post bereavement questionnaire 'Care Of the Dying Evaluation' (CODE)
- Use the main concerns identified from bereaved relatives of cancer patients to implement key changes in clinical care

This grant would support the first phase of research by enabling us to gather feedback from the public on the CODE questionnaire and the most sensitive method to conduct the international study, helping to ensure that the study is conducted in the best manner and that the project remains relevant to those it is trying to help.

R School

Matthew Baylis and Rob Christley, Institute of Infection and Global Health

The aim is to take R into schools – R School.

R is a programming language that is becoming the industry standard in science for data analysis and visualisation. Many universities encourage undergraduates undertaking science courses to learn to use R, however, it is often the undergraduates' first experience of a command-line programme and, as there is a steep learning curve in its use, it is not always popular.

Through this project we will trial the teaching of R in secondary schools to A-level students. We will run weekly, after-school sessions with the objective of helping students to overcome the initial hurdles, manipulate data, produce high quality graphs and even, for those studying maths, do some basic statistical analysis.

These skills will be useful for the students producing their project reports in their school, will support other research opportunities like Nuffield scholarships; and will provide the students with basic programming skills.

We will also train our Early Career Researchers to run the courses, enhancing their programming skills and giving them experience of working with young people.

Patient derived core outcome measures for a clinical trial in childhood Henoch Schonlein Purpura nephritis

Louise Oni, Institute of Translational Medicine

Henoch Schönlein Purpura (HSP) is a childhood vasculitis with 20 cases/100,000 children. The evidence base for the management of HSPN is extremely limited and as such there is no consensus standard management. As part of the paediatric nephrology NIHR Clinical studies group (CSG) there is a commitment towards designing a clinical trial for children with HSPN. A key component for the success of a proposed trial is to establish meaningful core outcome measures.

The aim of this project is to explore and discuss patient derived core outcome measures that are important and relevant to children (and their families) with HSPN. We will do this by distributing a patient questionnaire and holding a focus group with children who have been affected by HSPN.

This project aims to take into account patient's preferences and experience in living with this condition. It will empower patients to directly influence study design and provide meaningful outcome measures in a future trial.

Sun tan lotion application; How effective is your protection?

Kevin Hamill, Institute of Ageing and Chronic Disease and Austin McCormack, NHS Aintree

While the general public are generally aware of the damage uncontrolled sun exposure does to their skin, skin cancer rates are consistently rising year on year. Additionally, specific regions of sun exposed skin are consistently ineffectively covered by lotion e.g. eyelids, hairline.

The aims of this engagement event are to demonstrate to the public the efficacy of sun lotion (and SPF containing makeup) in protecting exposed skin; to help the volunteers identify areas where they might fail to cover; to stimulate discussion on UV induced DNA damage and cancer progression.

We will run an activity at Meet the Scientists which utilises a DSLR camera modified to be sensitive to UV light, to image volunteers from the general public. Images from this camera of untreated skin will reveal sun damaged area as dark spots. Upon sun lotion application, anywhere with coverage will appear black. Participants will be invited to have their images taken before and after applying sun tan lotion and compare the results and can also take the images home with them.

Developing patient/public involvement with the Liverpool Cancer Inequalities Research Network

Sue Povall, Institute of Psychology, Health and Society

The project aims to develop public involvement with the Liverpool Cancer Inequalities Research Network (LCIRN).

LCIRN was formed in April 2015 and held its inaugural symposium on 2nd November 2016. We have had no formal engagement with members of the public in the development of LCIRN to date, however we recognise the importance of including public voices, especially as we work to set our research priorities.

This funding will be used to bring interested members of the public together to design the best approach to public engagement with LCIRN. We will consider options ranging from attendance at meetings, holding independent public reference groups, workshops and email/social media.

This project will lead to a formal public engagement process for LCIRN, which will enrich the Network and ensure that the research undertaken by the Network has relevance for the people of Liverpool and the surrounding region. We hope that those members of the public will act as gatekeepers for engaging local residents more broadly with LCIRN and to help identify members of the public who would want to be engaged with the research projects we undertake.

Roald Dahl's Marvellous Medicine Children's Show

Tom Solomon, Institute of Infection and Global Health

The overarching aim of this project is to develop an interactive children's science show, based around my recently published popular science book - Roald Dahl's Marvellous Medicine. The book is part biography, part memoir (I was Dahl's doctor) and part popular science. The idea was to use Dahl's interest in medicine, and his fascinating medical encounters, to introduce some medical science to people who might not normally look at a popular science book. This includes areas of active research by the Liverpool Brain Infections group, such as encephalitis, infections of neurosurgical devices, and strokes.

The grant will support me to develop and run the show, and to work in collaboration with the Roald Dahl Museum and Story Centre in Great Missenden and the World Museum Liverpool, to hold workshops with children who will input in to the development process.

The final Marvellous Medicines show will be taken to Edinburgh International Science Festival and a video of the event will be made.

Seeing is Believing: Introduction to live imaging using a microscope

Violaine See, Institute of Integrative Biology

The grant will be used to purchase a small stereomicroscope, specifically designed for outreach activities. The primary objective is to use it for a school project with year 6 children at Mossfits Lane Primary School, Liverpool, but ultimately this microscope will also be used for open days, school visits in the Centre for Cell Imaging (CCI) and Meet the Scientists events at the World Museum, Liverpool.

The activity planned with the school children will be around the travel of light in a microscope and scales in biology, and students will have the opportunity to prepare and image samples ranging from cells to small organisms. Through this we hope to enthuse children about science and encourage them to consider scientific careers in the future.