STFC B4I Chemical sector roadshow

Bridging for Innovators (B4I) Funding Now Available to Support UK Industry in Boosting Productivity- Centre for Process Innovation Limited, Wilton Centre, TS10 4RF

On Wednesday 17 October we will be hosting an event to show how STFC can help address the current challenges in the Chemical sector. This event offers companies who need to overcome challenging problems that restrict their potential productivity and competitiveness an opportunity to discuss your challenge with world leading scientists and understand how to access leading edge research infrastructure.

Why should you attend?
• Learn about funding opportunities
• Discussing your challenge with world leading scientists
• Understand how to access leading edge research infrastructure
• Hearing grand challenges and funding opportunities for the chemical sector
• Facility tour at CPI’s cutting edge laboratories
• Networking with other chemical companies

For Further information, please go here
To register please go here

There will be a total of six B4I sector specific events, one per month from October till early 2019

There will be more information with details available nearer the time.
• Agri-Food on 14 November at Harper Adam University
• Energy and battery early December at Warwick Manufacturing Group
• Pharma in late Jan in 2019

Innovations

Issue 89  September 2018
Transforming food production: £90 million to help feed the nine billion

The first funding from a £90 million fund that aims to revolutionise how food is produced and dramatically reduce its environmental impact launches later this month.

The Transforming Food Production Challenge, part of the government’s modern Industrial Strategy, will bring together the UK’s world-leading agri-food sector with robotics, satellite, data and digital technologies and artificial intelligence to make the UK a world leader in the precision farming techniques needed to make sure the planet is able to feed a population of nine billion people by 2050.

The Challenge, funded through the Government’s Industrial Strategy Challenge Fund, will help to fuel rural growth, create high-skilled jobs and open up new export opportunities while reducing pollution and minimising waste and soil erosion.

“Precision farming is the future of farming and food production. There is an enormous opportunity for the UK to lead the world in deploying smart technologies to the field, farm and factory and truly transform the entire ‘farm to fork’ supply chain. We have to grasp that opportunity now, and the industrial strategy challenge fund will help make that happen. We will be able to farm sustainably, produce healthy, nutritious and economically viable food, while preserving farmland and the wider environment for future generations,” said Professor Melanie Welham, Executive sponsor for the Transforming Food Production Challenge at UK Research and Innovation.

The UK agri-tech sector contributes £14.3 billion to UK economy, employing 500,000 people, with companies and researchers developing pioneering technologies from farming drones to 3D printing. From fundamental biology to the farm field, the UK is home to research and industries leading the world in understanding crops and livestock. The UK is a global leader in environmental management and earth observation, sensors, big data, artificial intelligence and robotics. The integration and application of these strengths can transform the agriculture industrial sector.

The ISCF is delivered by UK Research and Innovation (UKRI). UKRI brings together the UK research councils, Innovate UK and Research England into a single organisation to create the best environment for research and innovation to flourish.

The first funding competition call opens on 20 August 2018 with an investment up to £20 million. The industry-led Collaborative Research & Development call has two main themes:

- To drive productivity and improve environmental outcomes in crop and ruminant production systems
- To develop new, highly efficient, high-value food production systems that maximise productivity and improve environmental performance.
Transforming food production: £90 million to help feed the nine billion

Projects must focus on the development of enhanced decision support, precision agriculture technology solutions and systems. This includes:

• combining digital technologies and engineering solutions with biological, environmental and/or social science to drive productivity

• developing technologies and solutions that connect farms and supply chains

• transferring technology from another sector into agriculture, providing this requires innovation

For more information on the ISCF Transforming Food Production challenge competition and to apply, please visit the Biotechnology and Biological Sciences Research Council website.

The Industrial Strategy Challenge Fund, delivered by UK Research and Innovation, is designed to develop UK industries that are fit for the future, driving progress in technologies where the UK can become a world-leader in their research and commercialisation.

It is part of the government's Industrial Strategy, the long-term plan to raise productivity and earning power in the UK, and is a core pillar in the government's commitment to increase funding in research and development by £4.7 billion over 4 years to strengthen UK science and business.
Developing breakthrough technologies for science and society

A new Horizon 2020 funding program call has opened. ATTRACT is being run by CERN, with the support of all European international science facilities. ATTRACT is calling for organisations to bring forward breakthrough projects on pioneering detection and imaging technologies.

This call opened on the 1st August and closes on the 31st October 2018. There is funding for around 170 projects, each of which will be given €100,000 in seed funding. The successful projects will run for around 12 months and present the results at a final assessment conference in Brussels in the autumn on 2020. Funding will start around May 2019. SMEs are particularly encouraged to bid but any firm with a relevant project and (or intending to apply for) a Participant Identification Code (PIC) can bid.

Further details can be found at:
https://attract-eu.com/attract-call/
EU project ARIES provides 50k€ funding to develop novel beam monitors between UK company D-Beam and University of Liverpool

Digital Micro-mirror Devices (DMDs) have the potential to revolutionise the world of optics with their ability to dynamically shape any incoming light source. D-Beam and the University of Liverpool can now be part of this revolution, as their innovative collaboration in adaptive optics for particle accelerators has been granted funding from the ARIES project. This support will allow D-Beam to provide breakthrough diagnostics for current and future particle accelerators.

D-Beam, who specialise in novel optical diagnostics for particle accelerators, is working to establish a commercially available diagnostic based on a device known as a DMD. A DMD is an array of individually addressable micrometre-scale mirrors, similar in size to a CCD sensor in a digital camera, the vast majority of which are used in digital projectors. The University of Liverpool have long been experts in the application of these devices to optical diagnostics in particle accelerators. By leveraging the adaptive mirrors upon the DMD a large range of masking techniques can be achieved; from simply blocking out intense light in an image, to performing interferometry.

An ongoing collaboration between D-Beam and the University of Liverpool has been awarded funding as part of the ARIES project to develop their work together to a stage where DMD-based diagnostics can be made available to the wider market. ARIES (Accelerator Research and Innovation for European Science and Society) is an ongoing Horizon 2020 project dedicated to the research, development and innovation of European particle accelerators and their related infrastructure and technology. Through this award D-Beam aims to provide Proof-of-Concept measurements for two devices, based on the existing research experience of the University of Liverpool. Both techniques have been demonstrated before without the use of a DMD by the University of Liverpool, and can provide beam size and angular measurements non-invasively.

D-Beam will introduce a DMD into these existing solutions. An improvement in speed, resolution and adaptability are all expected. This collaboration has already produced other commercially available diagnostics, and now thanks to the ARIES project the success is set to continue.

Further information can be found at: http://www.d-beam.co.uk

Credit: The Cockroft institute
Call on UK-India Agricultural data: Enhancement by integration, interpretation and reusability coming soon

STFC, the Biotechnology and Biological Sciences Research Council (BBSRC) and the Natural Environment Research Council (NERC), all parts of UK Research and Innovation (UKRI), along with the Indian Government’s Department for Biotechnology (DBT), have pre-announced a joint Newton-Bhabha Fund call for collaborative research proposals focussing on enhancement of agricultural data relevant to animal and plant health in India.

The call for joint UK-India proposals will open in late September 2018/early October 2018 and the UK funders have up to £2 million to commit to this call, with matched funding from DBT.

The joint India-UK multi-disciplinary call will aim to enhance and add value to existing animal and plant health data (both in India and the UK) in an agricultural context, through work on data and datasets to increase their accessibility and reusability. In addition, the focus will be on early stage development and provision of tools, algorithms or software that will add value to data by allowing analysis or interpretation of datasets, generation of models or predictions, or development of new insights by integrating datasets.

The purpose of the call is to build effective multi-disciplinary networks and partnerships between Indian and UK researchers and encourage end-user engagement (for example with farmers).

An opportunity is now available to express interest in attending a partnership building workshop to be held in India during the week commencing 19 November 2018.

The call for proposals will be launched in late September/early October 2018 and will close in early January 2019 to allow time for both workshop participants and those who are not able to attend the workshop to develop up to 18-month project proposals in collaboration with Indian partners. Attendance at the workshop is not mandatory to apply to the call; presentations and a workshop report will be made public after the event.

Although the UK component of this call will be managed by BBSRC, it is an equal partnership with STFC and NERC (alongside DBT). We welcome diverse disciplines to consider how they might work together to address the aims of the call. You can learn more about the call here.
New materials could make batteries charge faster

UK researchers have identified a group of materials that could be used to make batteries that are both high-powered and fast-charging.

The research could be the first step to developing a safe, super-fast charging battery. Most of the gadgets we rely on every day have been getting smaller, faster and cheaper each year – with the notable exception of batteries. Apart from the obvious benefits of having a smartphone fully charged in minutes, the challenges associated with making a better battery are holding back the widespread adoption of two major clean technologies: electric cars and grid-scale storage for solar power.

The researchers, from the University of Cambridge, STFC-funded Diamond Light Source and Argonne National Laboratory in the US, used materials with a complex crystalline structure and found that lithium ions to move through them at much higher rates that far exceed those of typical electrode materials, resulting in a much faster-charging battery.

In their simplest form, batteries are made of three components: a positive electrode, a negative electrode and an electrolyte. When a battery is charging, lithium ions are extracted from the positive electrode and move through the crystal structure and electrolyte to the negative electrode, where they are stored. The faster this process occurs, the faster the battery can be charged.

The research was funded in part by the Science and Technology Facilities Council, the Engineering and Physical Sciences Research Council and the European Union.

Find out more about the techniques used on the University of Cambridge website.

The results are published in the journal Nature.
UK dataset expertise informs Google’s new dataset search

Experts from UK Research and Innovation have contributed to a search tool newly launched by Google that aims to help scientists, policy makers and other user groups more easily find the data required for their work and their stories, or simply to satisfy their intellectual curiosity.

In today’s world, scientists in many disciplines and a growing number of journalists live and breathe data. There are many thousands of data repositories on the web, providing access to millions of datasets; and local and national governments around the world publish their data as well. As part of the UK Research and Innovation commitment to easy access to data, their experts worked with Google to help develop the Dataset Search, launched on 6 September. Similar to how Google Scholar works, Dataset Search lets users find datasets wherever they’re hosted, whether it’s a publisher’s site, a digital library, or an author’s personal web page.

Google approached UK Research and Innovation’s Natural Environment Research Council (NERC) and Science and Technology Facilities Council (STFC) to help ensure their world-leading environmental datasets were included. The heritage in these organisations for managing huge complex datasets on the atmosphere, oceans, climate change, and even data about the solar system, managed by Dr Sarah Callaghan, the Data and Programme Manager at the UKRI’s national space laboratory STFC RAL Space, led to them working with Google on the project.

Dr Sarah Callaghan said: “In RAL Space we manage, archive and distribute thousands of terabytes of data to make it available to scientific researchers and other interested parties. My experience making datasets findable, usable and interoperable enabled me to advise Google on their Dataset Search and how to best display their search results. I was able to draw on my work with NERC and STFC datasets, not only in just archiving and managing data for the long term and the scientific record, but also helping users to understand if a dataset is the right one for their purposes.”

To create Dataset Search, Google developed guidelines for dataset providers to describe their data in a way that search engines can better understand the content of their pages. These guidelines include salient information about datasets: who created the dataset, when it was published, how the data was collected, what the terms are for using the data, etc. This enables search engines to collect and link this information, analyse where different versions of the same dataset might be, and find publications that may be describing or discussing the dataset. The approach is based on an open standard for describing this information (schema.org). Many STFC and NERC datasets for environmental data are already described in this way and are particularly good examples of findable, user-friendly datasets.
“Standardised ways of describing data allows us to help researchers by building tools and services to make it easier to find and use data” said Dr Callaghan, “If people don’t know what datasets exist, they won’t know how to look for what they need to solve their environmental problems. For example, an ecologist might not know where to go to find, or how to access the rainfall data needed to understand a changing habitat. Making data easier to find, will help introduce researchers from a variety of disciplines to the vast amount of data I and my colleagues manage for NERC and STFC.”

The new Google Dataset Search offers references to most datasets in environmental and social sciences, as well as data from other disciplines including government data and data provided by news organisations.

Professor Tim Wheeler, Director of Research and Innovation at NERC, said: “NERC is constantly working to raise awareness of the wealth of environmental information held within its Data Centres, and to improve access to it. This new tool will make it easier than ever for the public, business and science professionals to find and access the data that they’re looking for. We want to get as many people as possible interested in and able to benefit from data collected by the environmental science that we fund.”

Dr Chris Mutlow, Director of STFC RAL Space said, “This work builds on RAL Space experience in data management and commitment to making it easily accessible. The expertise that Sarah and our other data scientists have in this area is becoming an ever more important global resource to call upon. The data centres we manage for NERC and STFC play an important role in scientific research and are a facility available to all.”
Celebrating the 60th start-up company to graduate from the ESA BIC UK

On 1 August, at Harwell Campus, STFC celebrated the 60th start-up company to graduate from the successful European Space Agency Business Incubation Centre (ESA BIC UK).

Managed and co-funded by STFC, since 2011 the ESA BIC UK has supported 67 start-ups who are using space and satellite technology to develop new products and services, with an impressive survival rate of 94%, and collectively raising over £40 million in investment to date.1

Space technology company, Ridersmate, is the 60th company to graduate from the ESA BIC UK, where it has been using satellite technology in combination with a bespoke coding system to develop a new generation of wearable tracker for use at sea, called eCall Marine, that will help emergency responders save lives, resources and money.

eCall Marine is activated either by pressing the emergency button or automatically when it comes into contact with water, and will directly notify the emergency services of an incident at sea and provide an immediate and reliable two-way voice conversation with the caller from anywhere in the world. This enables the emergency services to gain information on the severity of the emergency and the number and condition of victims, enabling them to respond appropriately with the appropriate resources. The device also provides constant updates on the exact coordinates of the incident, along with the temperature, direction and speed of the current which enables them to pinpoint exactly not only where the victim was, but where he will be at point of rescue, eliminating the need for endless hours of search.

Using satellite communications eliminates the worry and risk of relying on lesser communications through mobile networks which do not work should they be more than just a couple of kilometres offshore.

STFC’s Dr Sue O’Hare, Operations Manager for the ESA BIC UK, said: “Turning a brilliant idea into a viable commercial offering is a huge challenge and the ESA BIC UK provides the right environment and support to do this. Ridersmate is a perfect example of how space and satellite technology can be applied to develop a product and service that will not only save lives but will also save costs and the resources of our UK emergency services. I’m thrilled to be celebrating our 60 alumni milestone with Ridersmate and am looking forward to hearing about their future successes.”

David Coleman Director and Founder of Ridersmate said: “When we first pitched the idea of eCall Marine, we were told it couldn’t be done. However, thanks to the opportunity we have had to be part of the ESA BIC UK, we have proved our concept, carried out successful trials and are gearing up to launch. The costs involved in bringing a product to market from scratch are high and very time consuming, and for this reason ideas often go no further than the ‘garden shed’. Financial support has been a huge element, but the support we’ve had has been so much more than that. Office space, a start-up environment and funding advice combined with business and patent support have been invaluable. Thank you ESA BIC UK for supporting our idea and helping us bring it out of the garden shed!”
Contracts worth £19 million have been awarded for the first of the major facilities for the National Satellite Test Facility (NSTF) which is to be built and operated by STFC’s RAL Space on behalf of the UK government.

The contracts are the first steps in meeting the UK space industry’s need for a set of co-located world-class facilities for environmental testing of space payloads and satellites. The three successful contractors will supply the large space test chamber, vibration facility and the combined electromagnetic compatibility (EMC) and antenna measurement system.

Satellite test facilities at this scale, in one location do not currently exist in the UK. Once operational in 2021, the NSTF will provide the space sector across the UK with all the major testing facilities they need under one roof, without incurring expensive international shipping costs.

The NSTF will expand and complement the existing RAL Space facilities at the heart of the Harwell Space Cluster. This major national infrastructure will support the UK’s space sector as it seeks to capitalise on the estimated 3,500-10,000 satellites that are due to be launched by 2025.

Sean Stewart, NSTF Project Manager, RAL Space said, “Alongside the existing RAL Space assembly, integration and validation facilities, the NSTF will put all the test equipment needed by industry and academia in one place and accessible to everyone. Awarding these contracts is one of the early and hugely significant milestones towards building the NSTF.”

The large space test chamber will be built by Angelantoni Test Technologies and delivered in 6 large loads to be assembled on site at the NSTF. With an internal, usable size of 7m diameter by 12m long, the chamber will be the largest of its kind in the UK and amongst the giants of Europe. It has a temperature range of 95K to 400K, providing the conditions needed to test a variety of complex science missions as well as commercial satellites for Earth orbit.

The combined electromagnetic compatibility and antenna measurement system will be provided by a consortium led by NSI-MI Technologies LLC. This facility will provide an electrically clean environment so that a satellite’s electromagnetic emissions can be accurately measured. It will also contain a planar near-field scanner to measure the performance of antennas used for communications between the satellite and ground stations.

Team Corporation will build the vibration facility, capable of testing satellites up to 7 tonnes using two electro-dynamic shakers. To realistically simulate the mechanical loads experienced during a rocket launch, one shaker will operate in the vertical plane (Z axis), while the other will operate horizontally (X and Y axes). Each shaker is capable of developing 222 kN (50,000 lbs. force) of thrust.

These major facilities will be joined by capabilities for testing for centre of gravity and moments of inertia, pyro-shock and acoustic testing.

The UK government is investing £99 million to build the NSTF as part of the Industrial Strategy Challenge Fund to support UK businesses and academia as they bid for more national and international contracts to build bigger and more technologically advanced satellites.

The main contractor for the construction of NSTF is Mace Group. Construction of the actual building is due to start in November 2018 and the build programme will run through to the spring of 2020.
First design project for world’s largest telescope completed

The first design project for what will soon be the world’s largest and most sensitive radio telescope – the Square Kilometre Array (SKA) – has been completed.

After four and a half years, the international Telescope Manager (TM) consortium has formally concluded its work on the architectural design of a fundamental part of the software for the Square Kilometre Array: the nervous system of the Observatory, which is called the Telescope Manager.

Formed in November 2013, the consortium was tasked with designing the crucial software that will control, monitor and operate the SKA telescopes. STFC’s UK Astronomy Technology Centre (UKATC), the UK’s national centre for astronomical technology, has been leading one of the critical elements of the Telescope Manager activity.

“STFC has been leading the observation management part of the software,” STFC’s Alan Bridger, who is leading the team at UKATC explains. “Observation management is a really critical part because it is what makes the science work in the SKA system. It takes the scientific goals and turns them into something that the SKA system can work with and then takes data which can be used and analysed by scientific users and staff at SKA.”

Mark Nicol, STFC software engineer who is also working on the project added, “The easy analogy is to compare it to the brains of the telescope, but it’s maybe better to think of it as a football coach: it prepares all the elements of the telescope before the observation starts, makes sure they have all the information they need and then whilst the observations are being taken the telescope manager is sitting there passing on information, dealing with any problems that come up and handling any substitutions.”

SKA will consist of thousands of dishes and literally millions of linked radio wave receptors located in Australia and in Southern Africa and their combined signals will create a telescope with a collecting area equivalent to a dish of about one square kilometre. It will revolutionise our understanding of the Universe by detecting radio waves with unprecedented sensitivity and image fidelity, helping answer key questions in astrophysics and astronomy, such as the role of dark energy and dark matter in our Universe, and possibly even one of mankind’s biggest questions: are we alone?

STFC provides funding for the UK’s involvement in the project’s detailed design phase, enabling UK institutes, laboratories and industry to participate in the international work collaborations needed to progress SKA to construction readiness. STFC also provides funding to support operation of the SKA Project Headquarters.
First design project for world’s largest telescope completed

Scientists and engineers from the UK and around the world, together with industry partners, are participating in the SKA project which is driving technology development in antennas, data transport, software and computing, and power. The influence of the SKA project extends beyond radio astronomy. The designs, construction and operation of the SKA have the potential to impact skills development, employment and economic growth in science, engineering and associated industries, not only in the host countries but in all partner countries.

Background
During 2013 the SKA Organisation, which manages the global project from its offices at Jodrell Bank Observatory, near Manchester, invited proposals from research organisations and industry partners for the design stage. As with other global research projects of this magnitude, such as the development of the Large Hadron Collider, the SKA was broken down into various modules called ‘work packages’. Each of these are managed by a consortium of international experts. The work packages range from developing the new dishes and other antennas for the telescope, through the immense computing and software systems, to the basic infrastructure needed to operate what will be one of the largest science facilities ever constructed.

The UK and SKA
The SKA will be the next generation radio telescope array, with a transformational impact. It was originally conceived as a “Hydrogen Pulsar” telescope, but it will provide a sea change in most areas of astronomy. Early science is scheduled to begin in 2020. The UK is contributing £100 million, representing about 18-19% of the project, to the construction of the instrument and STFC represents the UK as part of the SKA consortium.

STFC is working with BEIS, Innovate UK, KTN and UKTI to develop and execute the industry strategy and support UK Industry being involved in the SKA project. STFC provide a single point contact for Industry to engage with the SKA. This support is there to nurture new spin offs, open new markets for UK Industry to SKA Member countries and allow companies to tender for SKA construction contracts.

About the SKA
The SKA is not a single telescope, but a collection of telescopes or instruments, called an array, to be spread over long distances. The SKA is to be constructed in two phases: Phase 1 (called SKA1) in South Africa and Australia; Phase 2 (called SKA2) expanding into other African countries, with the component in Australia also being expanded.

Already supported by 12 member countries – Australia, Canada, China, France, India, Italy, the Netherlands, New Zealand, South Africa, Spain, Sweden and the United Kingdom – SKA Organisation has brought together some of the world’s finest scientists, engineers and policy makers and more than 100 companies and research institutions across 20 countries in the design and development of the telescope.
A model of future European space mission Sentinel-5 has successfully completed thermal testing in our world-class space test facility in Oxfordshire. This is an essential step that will allow the Earth Observation project to progress to the next stages of testing in preparation for the instrument to eventually go into orbit in space.

The model is built to test the mechanical and thermal design under the same conditions the instrument will encounter in orbit. STFC’s RAL Space provided the test services to Airbus Defence and Space for this very important stage of instrument development at our thermal vacuum chamber facility.

Sentinel-5 is dedicated to monitoring air pollution in order to study our planet’s climate and atmosphere in greater detail than ever before. Once in orbit it will work alongside other instruments on board to collect data that will ultimately help improve weather forecasts and to better understand our changing climate.

STFC has been involved in many of the Sentinel missions, from providing necessary calibration of instruments to providing the huge computer data storage needed for such projects through our supercomputer and data store, JASMIN.
**ALPHA experiment takes antimatter to a new level**

In a paper published in the journal *Nature*, the ALPHA collaboration at CERN, home of the Large Hadron Collider, reports that it has literally taken antimatter to a new level by observing the Lyman-alpha electronic transition in the antihydrogen atom, the antimatter counterpart of hydrogen, for the first time.

The finding demonstrates that ALPHA is quickly and steadily paving the way for precision experiments that could uncover as yet unseen differences between the behaviour of matter and antimatter.

The Lyman-alpha (or 1S-2P) transition is a special transition and in antimatter studies it could enable precision measurements of how antihydrogen responds to light and gravity. Finding any slight difference between the behaviour of antimatter and matter would rock the foundations of the *Standard Model of particle physics* and perhaps cast light on why the universe is made up almost entirely of matter, even though equal amounts of antimatter should have been produced in the Big Bang.

The ALPHA team makes antihydrogen atoms by taking antiprotons from CERN’s Antiproton Decelerator (AD) and binding them with positrons from a sodium-22 source. It then confines the resulting antihydrogen atoms in a magnetic trap, which prevents them from coming into contact with matter and annihilating. Laser light is then shone onto the trapped atoms to measure their spectral response. The measurement involves using a range of laser frequencies and counting the number of atoms that drop out of the trap as a result of interactions between the laser and the trapped atoms.

Professor Niels Madsen, from the Physics Department at Swansea University plays a leading role in the ALPHA experiment and said that “I think this result really demonstrates how ALPHA has succeeded in maturing the field of spectroscopy on antihydrogen.”

Professor Madsen is also one of the two UK Deputy Spokespeople for ALPHA, along with Dr Will Bertsche from the University of Manchester and added that “It’s amazingly satisfying to see how the pace of discovery has been accelerating in our experiment, from the first trapping in 2010, to now a second major result only a few months since the last one. This result is very promising and will likely pave the way for laser-cooling of antihydrogen that will allow even more precise measurements of all aspects of antihydrogen.”

The UK has contributed to the ALPHA experiment through both physics and technical leadership with both Deputy Spokespersons coming from the UK, as well as positron accumulation and delivery, charged particle trapping, magnet design, experimental design and operation (EPSRC supported) and through the support of STFC for CERN membership.

You can [read more about these results here](#)

[More images here](#)

[CERN website](#)

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Innovations Newsletter
New Leadership Fellows will inspire and empower engagement

Three new STFC Leadership Fellows in Public Engagement have been awarded to help inspirational researchers to champion public engagement across their academic communities.

As part of their responsibilities our new Leadership Fellows will highlight the achievements of STFC science and technology, demonstrating the excitement of research and the value of STEM to the UK.

Derek Gillespie, STFC Head of Skills and Engagement, said “The Leadership Fellows in Public Engagement are our most prestigious public engagement awards. We recognise our Leadership Fellows not only as excellent practitioners of high quality engagement, but as inspiring role models. We know that our Leadership Fellows will make a real difference to the people they work with: inspiring their audiences and mentoring their colleagues with their experience and enthusiasm.”

Our three new champions of science and technology are:

Dr Helen Mason OBE, University of Cambridge: SunSpaceArt
Helen leads a team of visual artists and scientists to bring learning about the Sun to life in UK schools. Helen plans to build on the great success of her previous project, ‘Sun|trek: here comes the Sun’, extending the project to reach more schools in new locations with some exciting new initiatives. The focus of ‘SunSpaceArt’ will continue to be on the Sun and solar system,
Innovations Newsletter

New Leadership Fellows will inspire and empower engagement

but will also include some of the latest space research projects, such as ESA’s Solar Orbiter. It will also include Space Science (human space travel) and Polar Sciences (climate change, space weather).

On receiving the award Dr Helen Mason OBE, from the University of Cambridge, said “We are thrilled at the continued support and encouragement which STFC has offered the SunSpaceArt project. Our thanks are best expressed in the words of a child at a primary school in Barking ‘Today I loved this lesson because the science and art inspired me.”

Helen was also awarded the Annie Maunder Medal by the Royal Astronomical Society earlier this year for bringing the excitement of solar physics to the wider public.

Dr Christian Diget, University of York: Binding Blocks
Christian aims to introduce school students to cutting-edge Nuclear Physics in an interactive, inquiry-based approach using Lego. Binding Blocks centres around an interactive construction of a seven metre nuclear chart of isotopes made of more than 26,000 Lego bricks. Through engaging with the chart, participants get a hands-on experience of key areas of nuclear science, astrophysics and energy.

Dr Anne-Marie Weijmans, University of St Andrews: Shine in a Box
‘Shine’ brings together art, music and science to encourage people to think about light, explore its properties, and to find out how modern astronomical research uses light to discover more about stars and galaxies in the Universe. Shine will use art, music and science demonstrations at various locations including festivals, theatres, museums and prisons. The project will engage primary school children with light and spectra in the class room using a ‘Shine in a Box’, while undergraduate and graduate students in physics and astronomy will develop their skills and knowledge about the important role that public engagement plays in a scientific environment.

Dr Weijmans said “Shine has been an amazing journey, where we explore the boundaries between science, art and music. I’m very excited that with the support of this STFC fellowship we can now expand our program, and start working with teachers and primary school children to come up with new art and music inspired by light, stars and galaxies.”

Our Leadership Fellows in Public Engagement support passionate academics and STFC facility users to undertake their own engagement and to actively increase the skill and confidence of their colleagues when it comes to engaging others with their research. This broader effort at spreading skills and confidence is designed to enhance engagement between the public and the wider science and technology community.

The STFC community has a long track record of delivering high quality engagement and outreach, and our existing Public Engagement Fellows have proved highly successful in strengthening relations with public audiences.

Find out more about Leadership Fellows in Public Engagement
Daresbury Laboratory's 'Talking Science' - celebrating 20 years and coming to a venue near you!

The Science and Technology Facilities Council (STFC) at Daresbury Laboratory is celebrating 20 years of bringing inspirational science talks to the general public. This year it is bringing its exciting new ‘Talking Science’ lecture programme out of the laboratory to locations across the region, including Liverpool, Warrington, Widnes and Runcorn.

From our deepest oceans to the origins of the universe, and from the parasites in our bodies to the science behind the thrills of the circus – the programme is jam-packed with fascinating, age-appropriate talks for anyone who wants to know more about the amazing science and research that is happening all around us right now, and its positive impact on our daily lives.

Professor Anthony Ryan from the University of Sheffield was the first ever speaker for Talking Science in 1998, and in its 20th year it is only fitting to invite him back. His latest talk will convey how scientists from the University of Sheffield have been working with the UNHCR and refugees from the Za`atari refugee camp in Jordan, to co-create solutions to the daily struggles of living in the camps.

Wendy Cotterill, Senior Public Engagement Officer at STFC’s Daresbury Laboratory, and organiser of the Talking Science programme, said: “We are thrilled to be celebrating 20 years of Talking Science and to be bringing our monthly public lectures out to venues across the region for this year’s programme. The Daresbury Laboratory lecture theatre is also due for refurbishment, so we saw this as a perfect opportunity take the talks off-campus, and what better way to celebrate our twentieth year than to bring Talking Science out to the public.”

Booking is essential and will open six weeks in advance of each lecture date with confirmation of the venue location and travel information. Please see the STFC Talking Science webpage for more details.

If you have any queries, email dltalkingscience@stfc.ac.uk, or call 01925 603040 (24 hour answerphone).

Bookings are already open (book here) for the first event that will take place at The Heath Conference Centre in Runcorn on 19 September at 7pm.

Click here to see the full version of the programme
External Innovations and Innovations Club

The External Innovations team manages the activities that aim to realise the impacts and benefits that flow from STFC’s investments in science and technology towards commercialisation through one to one brokering, events and a range of funding schemes.

If you wish to contact the teams for more information please see the following contacts and email addresses.

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External Innovations – 21st Century Challenges

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The Innovations Club newsletter contains a selection of articles drawn from our partner organisations that we think you will find interesting. We welcome your comments
innovationsclub@stfc.ac.uk

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