

RESEARCH AND ENTERPRISE

2016

Sussex Impact and Research Awards

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OF SUSSEX

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WELCOME

I am delighted to welcome you, on behalf of the University, to our celebratory reception and presentation of the second Sussex Impact and Research Awards.

As you know, the UK government and other research funders increasingly require universities to demonstrate the impact of their research, and at Sussex a key part of our approach is to recognise, celebrate, and invest in outstanding impact.

This event is not only about recognising the winning entries; it gives a heightened profile to the range of impacts Sussex research creates across society, the economy, culture, technology, health, the environment, and beyond. This programme describes much of this inspiring work.

Nor do the awards solely focus on impact, but also on the research of our outstanding new and emerging researchers. This recognition demonstrates our institutional commitment to the future of the University and the broader academy as places of excellence, rigour, and innovation.

I hope that you enjoy the occasion, and will join me in congratulating not only our winners, but also all those who are engaged in excellent research and the creation of impact across our Sussex community.

PROFESSOR MICHAEL C R DAVIES FRSE
PRO-VICE-CHANCELLOR (RESEARCH) OF THE UNIVERSITY OF SUSSEX



Impact Awards

The Sussex Impact Awards recognise the effects and benefits of Sussex research beyond the academy between January 2014 and May 2016.

The criteria for entries included explaining the reach and significance of the impact, and demonstrating the link between the impact and research undertaken (wholly or primarily) at Sussex. Awards will be made in each of three categories of impact (commercial and economic; policy and practice; and public engagement).

Commercial and economic impact

Research and innovation can generate technologies, models and practices that have direct economic and commercial benefits. This award celebrates such advances, whether they have helped to grow a single business or influenced the functioning of the national or global economy.

Ranging from developing a tool to investigate neurodegeneration in Alzheimer's disease, to designing playful advertising campaigns with sensor bubbles, to building an instrument to detect and measure microwave radiation, the nominations reflect diverse research outcomes that have all made significant commercial and economic impact.

COMMERCIAL AND ECONOMIC IMPACT

Next generation space science instrumentation with commercial applicability

Dr Anna M Barnett
(Engineering and Informatics)

Barnett founded and leads the Semiconductor Materials and Devices Laboratory which covers fundamental science through to technology commercialisation. She specialises in novel space instrumentation and its scientific and commercial application. Her work has significantly advanced the state-of-the-art of semiconductor detectors for X-ray astronomy and space science.

Quantifying effects of climate-change related uncertainties on flooding and drought phenomena

Dr Omar Lakkis
(Mathematical and Physical Sciences)

Mr Philip Townsend, PhD student, Mathematics; Dr Justin Butler, Director, Ambiental Technical Solutions Ltd; Professor Martin Todd, Geography; Professor Charalambos Makridakis, Mathematics; Mr David Martin, Technical Director, Ambiental Technical Solutions Ltd.

Computer stochastic simulations play a central role in understanding, predicting and mitigating climate change effects on river flows, floods and droughts. This project derives new 'smart' algorithms which allow simulations to be done in reasonable times. The project's impact is expected to be substantial as it will allow Ambiental to perform computations for various companies and governments to understand the risks of flooding in different areas of the world.

Efficient and robust commercial software for cell migration

Dr Anotida Madzvamuse
(Mathematical and Physical Sciences)

Madzvamuse is pioneering an automated cell tracking approach that is starting to revolutionise the way moving cells are studied both in vivo and in vitro. Most commercial and open source software packages for cell migration lack the physics of migrating cells. By using mathematical physics, improved software packages have been developed which are currently being trialled with 30,000 customers in over 40 countries.

Protecting global food security

Professor Anthony L Moore
(Life Sciences)

Dr Luke Young, Dr Mary Albury, and Mr Benjamin May (Life Sciences)

Fungicides play a key role in crop disease control but increasing resistance to fungal pathogens threatens their effectiveness. Moore's research provides a breakthrough solution to prevent fungicide resistance and increase crop yield. A suite of compounds has been developed to prevent development of cereal fungal resistance towards conventional fungicides, decrease the need for repeated application, reduce environmental damage, and increase crop yield.



A playful advertising campaign engaging sight, touch and smell within seconds

Dr Diego Martinez Plasencia
(Engineering and Informatics)

Plasencia has developed the SensaBubble display. SensaBubble produces soap bubbles, filled with scented fog and projects visual content onto them. A person walking into a mall sees a floating bubble with the logo of a perfume company projected on it; when they pop the bubble, the perfume is released. This has attracted the interest of companies such as Unilever.

Changing the way we investigate neurodegeneration in Alzheimer's disease

Professor Louise Serpell
(Life Sciences)

Alzheimer's causes distress to sufferers and their families and is increasing in frequency. A protein called Amyloid-beta ($A\beta$) plays a central role in the disease progression and has been implicated in causing neurodegeneration. Recent work in the Serpell lab has invented a tool that will enable highly controlled experiments to explore the toxic action of $A\beta$.

Harnessing microwave radiation at the quantum level

Dr Jose Luis Verdu Galiana
(Mathematical and Physical Sciences)

The Sussex Geonium Chip Quantum Microwave Sensor is building a practical instrument with ultimate sensitivity in the detection and measurement of microwave radiation. This novel device has gained the support and commitment of the Defence Science and Technology Laboratory (DSTL), British Aerospace Systems (maritime) and Selex ES as industry partners.

Impact in policy and practice

Sussex has a long history of engaging in research with the potential to transform public services and enhance the lives of citizens, through national and international policy improvement. This award celebrates the diversity of Sussex influences on policy and practice across economics, innovation, education, health, and beyond.

Entries in this category range from influencing government policy on girls' body image; transforming responses to Ebola; and influencing witness rights and freedom from coercion in Georgia. The nominations demonstrate the range and scale of Sussex impact on policymakers and practitioners.

Ground-breaking research on South Africa's energy sector informs policy, industry and civil society

Dr Lucy Baker (Business, Management and Economics (SPRU))

Baker's research on renewable energy policy in South Africa has led to engagement with non-academic stakeholders in South Africa and elsewhere, including donor agencies, industry, government and civil society. Such engagement has provoked discussion over what constitutes successful policy and financing for renewable energy and how socio-economic development needs could be met.



Better foreign policy through expertise

Professor Stephen Burman (History, Art History and Philosophy)

Through working at, and with, the Foreign and Commonwealth Office (FCO) the research has affected the strategic direction of UK foreign policy. The work has contributed to increased expertise in policy making, meeting a need that was acknowledged initially by William Hague in 2010, and is now embedded in internal reforms being implemented in the FCO.

Experimental evidence that exposure to Barbie doll (and other ultra-thin ideals) is harmful to girl's body image influences new Barbie range and government policy

Dr Helga Dittmar (Psychology)

Mattel's introduction of new Barbies is 'designed to promote a healthy and realistic body image'. Dittmar's research was described as 'the most compelling evidence' that exposure to the original (ultra-thin) Barbie harms the body image of five-to-seven-year-old girls. In the global debates about the new Barbies, Dittmar's experiment was discussed in more than 180 articles worldwide. She was an invited expert at the UK government's first International Conference on Body Image whose recommendations became government policy in 2010.

Anthropology input transforms Ebola response

Professor James Fairhead (Global Studies)

This was a collaboration with Melissa Leach and Annie Wilkinson (IDS), Melissa Parker and Fred Martineau (LSHTM), Ann Kelly (Exeter), Paul Richards (Njala, Sierra Leone & UCL), Ester Mokuwa (Njala, Sierra Leone), and other members of the Ebola Response Anthropology Platform

The Ebola Response Anthropology Platform (ERAP), fed social research into the humanitarian response. It also advised on topics ranging from burials to care, clinical trials to violence against health workers. ERAP was co-opted as a social science sub-group of the UK SAGE and has been praised in three UK Parliamentary Inquiries in 2016 into the Ebola response.



Sussex research guides new Government policy making and future professional practice standards aimed at supporting parents, children and families

Professor Gordon Harold (Psychology)

Dr Ruth Sellers (Psychology), ESRC Future Leaders Research Fellow

Research conducted by Harold has led to a fundamental shift in UK Government policy aimed at improving children's long-term mental health and future 'life chances', requiring a root-and-branch revision of family and child support services, training and models of professional practice. This is encapsulated in the report 'What Works to Enhance Inter-Parental Relationships and Improve Outcomes for Children', launched by the Secretary of State for Work and Pensions.

Influencing thinking about small-scale irrigation

Dr Elizabeth Harrison (Global Studies)

The research examines how politics and moralities play a role in the development of small-scale irrigation and its effects on livelihoods. Studies in Tanzania and Malawi demonstrate that formalisation of 'schemes' conceal the significance of politics in shaping outcomes for poorer farmers. Engagement activity has resulted in contributions to policy processes in both countries.

Working with high level policymakers around the world to develop a new framework for investment-led growth driven by ‘market creating’ innovations

Professor Mariana Mazzucato (Business, Management and Economics (SPRU))

Mazzucato’s externally funded work on ‘Mission-Oriented Public Policy’ and her concept of the state’s role in the economy as ‘creating and shaping new markets’ is influencing policy-makers around the world. She has served in high level advisory roles, written reports commissioned directly to inform policy development and met with policy-makers (including ministers and Presidents) as well as fostering debate in high-level international media outlets.



Congolese adolescent girls gain recognition as capable, skilled and resilient actors in their society

Dr Lyndsay McLean (Global Studies)

The DFID project *La Pépinière* aims to empower adolescent girls in the Democratic Republic of Congo (DRC). The research component involved training and mentoring Congolese ‘girl researchers’ who had a central role in the research process and outputs including a policy-oriented research report and a short film. The girl researchers experienced personal and professional transformation and policymakers and practitioners have recognised Congolese adolescent girls as capable, skilled and resilient actors in their society.

Sussex research shapes global debates on transitions to sustainability

Professor Pete Newell (Global Studies)

In collaboration with Carbon Market Watch, a paper was submitted to the UN Green Climate Fund (GCF), based on Newell’s research. The document was signed by over 20 different organisations. Newell has also contributed to government modelling work in the Netherlands, as well as being widely cited in a recent UN report on transformations to sustainability.

Promoting reading comprehension in primary school children

Professor Jane Oakhill (Psychology)

Professor Kate Cain (Lancaster University) has contributed substantially to the research

The researchers identified core skills that are causally implicated in comprehension development and difficulties and helped develop recommendations for teaching the skills identified in the revised National Curriculum. Their research fed into professional development for the teaching of reading comprehension in the UK and North America, as well as supporting successful training programmes in the UK and South America.



Bringing the brown-headed spider monkey back from the brink of extinction – sustainable local economies to conserve tropical rainforest

Dr Mika Peck (Life Sciences)

Working to preserve the endangered brown-headed spider monkey in Ecuador, Peck has collaborated with forest communities, NGOs and academics to help establish the ‘Tesoro Escondido Spider Monkey Reserve’, to transform the development path of forest communities through the organic ‘Conservation Chocolate’ Project, and train a new generation of community-based conservationists.

Translating critical scholarship on environment, peace and conflict into public and policy impacts

Professor Jan Selby (Global Studies)

Selby’s research has had transformative policy impacts within the Israeli-Palestinian water arena. It has had impacts on Palestinian negotiation positions, on the practices of international donors, and on mechanisms of Israeli-Palestinian water cooperation. His research has also helped improve public and policy understanding of broader water and climate security issues.

Witness rights and freedom from police coercion in Georgia

Professor Richard Vogler
(Law, Politics and Sociology)

Soviet-era police forces were able to arrest anyone who they thought could give evidence about any offence, which led to arbitrary arrest and the systematic torture and intimidation of witnesses. The successful campaign to end this practice in Georgia involved research undertaken by Vogler which was presented at a high profile Tbilisi conference and in television interviews.



Influencing community-based justice practices and public policy for the prevention of hate crime

Dr Mark Walters
(Law, Politics and Sociology)

Walters' research on restorative justice (RJ) is being used by practitioners throughout Britain to help them tackle hate crime and was the catalyst for a pilot project established by Sussex Police to use RJ for hate crime in Brighton and Hove. Walters' other recent study on the effects of transphobic hate crime was also quoted in a 2016 Parliamentary report on transgender equality.



Is this your future vehicle?

Dr William Wang
(Engineering and Informatics)

Sussex research has built a range-extended hybrid car which is equipped with a power generator to charge the battery in an emergency, or simply to charge while you are driving for a distance as long as the fuel tank can last. The car embodies renewable and clean energy application policies.

Making global trade fair for all

Professor Rorden Wilkinson
(Global Studies)

Wilkinson's research on the World Trade Organisation (WTO) has had an impact on the development of trade policy, wider understandings of trade policy issues, and in reframing debate about reform of the global trading system. The research has shaped the development of policy in key states (including the UK), in intergovernmental institutions (including UNCTAD and the Commonwealth) and in non-governmental organisations.

Managing the sound environment for public safety and for improving the city environment

Dr Harry Witchel (Brighton and Sussex Medical School); **Ms Lisa Lavia**, Managing Director of the Noise Abatement Society (NAS); **Mr Matt Easteal**, Leader of Special Projects (Brighton and Hove City Council)

Applied soundscape utilises soundscape theories in the urban environment, for example by adding sounds to a public space to make the local environment safer. Witchel has worked extensively with the Noise Abatement Society (a national charity based in Hove). A project with Brighton and Hove City Council that applies the research has resulted in opening a pedestrianised tunnel 24/7.



Impact through public engagement

This award recognises the many different ways in which Sussex is reaching out and working with different organisations, groups, communities, and the general public, to ensure that our research is helping to tackle the challenges faced by the world in which we live.

The entries demonstrate the sharing of research and knowledge with a diverse range of audiences, including transforming the lives of podocniosis patients, developing a particle physics outreach programme for students and teachers, and inspiring a local authority initiative to enhance children's vocabulary and love of books.

IMPACT THROUGH PUBLIC ENGAGEMENT

Podoconiosis research: transforming patients' lives

Prof Gail Davey
(Brighton and Sussex Medical School)

Prof Melanie Newport (Wellcome Trust Brighton and Sussex Centre for Global Health Research, Brighton and Sussex Medical School); and Mr Michael Edmonds, Development and Alumni Relations Office, University of Sussex

The Podoconiosis Research Hub disseminates world-class research on this neglected tropical condition. Since January 2014, 270 health workers in Cameroon, Uganda and Ethiopia have received training on patient care; and at least 35,000 people have been educated on the causes and treatment of the condition. The Research Hub has also secured funding to support implementation projects in Ethiopia and produced an animated video.



The wonders of the Universe are for everyone; being science ambassadors

Prof Antonella De Santo
(Mathematical and Physical Sciences)

Dr Fabrizio Salvatore
(Mathematical and Physical Sciences)

The applicants established the Sussex Particle Physics Master Classes, which engage hundreds of GCSE and A-level participants each year, in hands-on activities linked to Large Hadron Collider research. The Sussex SUSY Softies, designed for the 2014 Royal Society Summer Science Exhibition, are used to explain the search for Supersymmetry. The Softies have enabled collaboration with partners engaged in female participation in STEM subjects within developing countries.

Take 7 – sharing solar stories for greater engagement and impact

Dr Nicolette Fox (Business, Management and Economics (SPRU))

The study, Take 7, explores what happens when seven families, with pre-payment meters, are given solar panels. The research led to information leaflets being produced with three councils for hundreds of social housing tenants with solar. It was also turned into a YouTube film for a public fuel poverty event. Additionally, the research has been used by a water company, council and a national consumer organisation to help shape a project on engaging households around high water use.

Reading stories again and again enhances young children's vocabulary and love of books

Dr Jessica Horst (Psychology)

The research inspired a local authority-led initiative to encourage repeatedly reading the same stories to pre-school children. The Again! Project provides books and training to staff across 71 pre-school settings in Durham. After participating in the project, many parents report their children spend more time talking about books and are more interested in reading books – a key predictor in later academic achievement.



Asthma care: from one size fits all to one size fits one

Professor Somnath Mukhopadhyay
(Brighton and Sussex Medical School)

The group has made key discoveries underpinning a programme of public engagement that is driving change within the public, including health professionals, towards more personalised care in the area of asthma and allergy. This change in public awareness is likely to be a key force for introducing personalised healthcare to chronic disease management.

Bridging science, design, and technology to create emotionally engaging and memorable art experiences

**Dr Marianna Obrist
(Engineering and Informatics)**

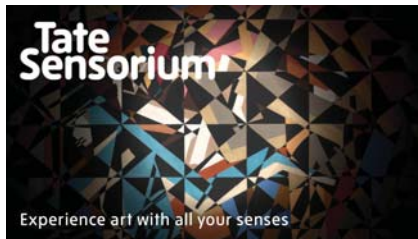
Obrist's work on how emotions can be mediated through mid-air touch supports public engagement in the investigation of touch, taste, and smell for interactive technologies. This research also caught the attention of Flying Object, a London-based company, resulting in a collaboration for a multisensory art exhibition at Tate Britain.



States of Mind: tracing the edges of consciousness

Professor Anil Seth (Psychology)

States of Mind is a major year-long Wellcome Collection exhibition, developed in collaboration with the Sackler Centre for Consciousness Science. It is designed to maximise public engagement in the science of consciousness, while also showcasing research from the University of Sussex. As of March 2016, over 33,000 visitors have visited the exhibition.



Based directly on public curiosity, Astroquizzical has answered questions about outer space for nearly half a million readers.

**Dr Jillian Scudder
(Mathematical and Physical Sciences)**

Astroquizzical is a blog dedicated to answering questions from the general public about outer space, from whether black holes are real, to why NASA's space suits are so unwieldy. Each question is given a careful response, not just answering the question, but explaining why we know, and accompanied by images. Astroquizzical has reached over 440,000 curious readers.

Engaging the public with STEM

Dr Stephen Wilkins (Mathematical and Physical Sciences)

Wilkins has worked extensively to encourage the participation of young people in STEM (Science, Technology, Engineering, and Mathematics) subjects including by becoming director of the Lewes STEM Festival. In the first event of the festival 600 visitors from across Sussex were engaged with a variety of STEM activities, producing positive feedback.

Emerging researcher

This award recognises the achievement of research of the highest calibre from individuals in the early stages of their academic career. Awards will be presented to researchers who have made exceptional contributions to their research field as a whole.

Entries include preventing and treating social disability amongst young people; engaging youth in cultural heritage; and guiding future EU and UK investment in redistributed manufacturing for healthcare.

The judges will be looking for a research finding or discovery of significance at Sussex. Individuals were invited to describe their role in a major research project or to demonstrate a strong portfolio of research outputs.

EMERGING RESEARCHER

Antibiotic resistance in global health

Dr Leena Al-Hassan (Global Studies)

During her PhD, Al-Hassan discovered novel pathways that led to antibiotic resistance (ABR) causing serious infections in children with cancer. Since joining BSMS in 2014 Al-Hassan has expanded the research to low income countries where many ABR originate. She leads the global ABR research initiative at BSMS and co-ordinates the Wellcome Trust Centre for Global Health Research.

Improved spacecraft guidance, navigation and control through the understanding of light

Dr Anna M Barnett (Engineering and Informatics)

To operate correctly, spacecraft use attitude determination systems to measure their orientation (attitude) relative to some other object (often the Sun). A revolutionary attitude determination system (called MicroADS) has been invented which offers improved measurement accuracy and field-of-view whilst also being considerably smaller and lighter than existing systems.

Preventing, identifying and treating social disability amongst young people with mental health problems

Dr Clio Berry (Psychology)

Berry is the Trial Manager for the PRODIGY trial led by Chief Investigator Professor David Fowler (Sussex). Funded by the National Institute for Health Research, PRODIGY will test whether a novel psychological therapy can facilitate social and mental health recovery for young people with emerging complex mental health problems and social disability.

Economics of crime: 'The effects of stolen goods markets on crime: pawnshops, property thefts, and the gold rush of the 2000s'

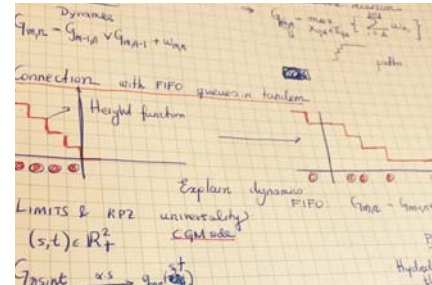
Dr Rocco d'Este (Business, Management and Economics)

d'Este's work investigates the effects of stolen goods markets on crime, focussing on pawnshops in the USA. The research reveals that the effects of rising gold prices on burglaries are increased by the prevalence of pawnshops. This is the first economic analysis indicating that burglars respond more to changes in the expected benefits of crime, in areas with a larger number of markets for stolen property.

Enabling disadvantaged students to fulfil their potential

Dr Matthew Easterbrook (Psychology)

Easterbrook's research furthers our understanding of the forces that impede disadvantaged students from achieving their potential in education, and provides the knowledge and tools necessary to intervene. Sussex's Widening Participation Team are active partners in his work, and have used the findings to inform how they engage with disadvantaged students.



Cutting-edge research activity towards the universal behaviour of percolation processes

Dr Nicos Georgiou (Mathematical and Physical Sciences)

Georgiou's research is dedicated to the study of random interface growth models arising in mathematical physics. Examples include final shapes of stains and waiting times for a system of tandem queues, like one-lane highway traffic. The long-standing prediction is that interface growth processes exhibit a 'universal behaviour'. His research is focused on establishing this prediction with rigorous mathematical tools.

Shaping energy systems: exploring the role of nuclear in sustainable transitions

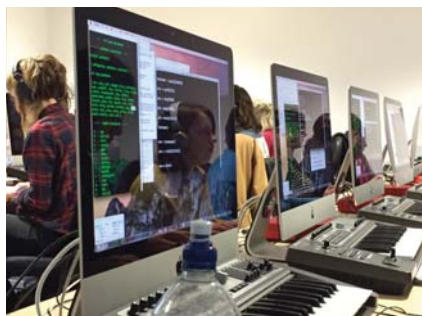
Dr Phil Johnstone (Business, Management and Economics (SPRU))

Johnstone has brought new issues and a novel understanding of energy transitions to the attention of other academics, the public, government and industry actors through five academic publications and a range of dissemination and engagement activities. The conceptual and empirical findings of Johnstone's research has resulted in the on-going construction of an EU-funded nuclear research network.

Teaching the young and the old the art of programming computers through live coding music technologies

Dr Thor Magnusson
(Media, Film and Music)

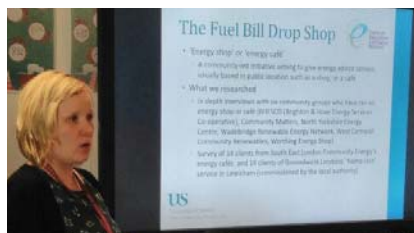
Live coding is a new method of programming computers where the software runs whilst being developed. This has become a bespoke art form with live performances and streaming via online channels. Magnusson has created and disseminated three live coding systems. He regularly performs, and has spent a decade organising international workshops for people of all ages on live coding.



Pharmaceutical formulations and particle/process engineering

Dr Mohammed Maniruzzaman
(Life Sciences (Chemistry))

Maniruzzaman was awarded a PhD in 2013 with two accompanying awards, and continues to make progress in the area of translational pharmaceutical research. He has 25 journal publications in both pharmaceutical and engineering/chemistry journals, three UK pending patents, two books and an edited special issue.



‘The Fuel Bill Drop Shop’: an investigation into community action on fuel poverty

Dr Mari Martiskainen (Business, Management and Economics (SPRU))

Since completing her PhD, Martiskainen has partnered with South East London Community Energy, to research community action on fuel poverty and organised a public debate on fuel poverty. This is the first academic research to examine community-led ‘energy cafes’ that provide energy advice. Martiskainen has engaged with stakeholders, including presenting to the Secretary of State for Energy and Climate Change.

De-institutionalising ‘children’s participation’ and rendering visible practices of connection and solidarity in ordinary children’s and families’ everyday urban lives

Dr Sevasti-Melissa Nolas
(Education and Social Work)

Nolas’s research revitalises our thinking on democratic participation in the overlooked demographic of younger children (age five and up) and their families. The research is an important corrective to research bias, which equates social and political participation with the teenage years and early adulthood. The research is innovative in moving the focus from children’s institutional participation to children’s participation in everyday life.

Vocal communication and bioacoustics (H2020 European Union Project title: ‘Faking it: the production, perception, and function of social voice modulation’)

Dr Katarzyna Pisanski (Psychology)

Pisanski studies vocal communication in humans – from how we produce speech, to how we use non-verbal voice signals to influence how others perceive us. Having completed her PhD in 2014, she has published over twenty peer-reviewed research articles in high-impact journals, has presented in over 30 invited talks and conferences, and was principal investigator on two major research grants.

Functional characterisation of developing hearts in embryos using Sussex patented sensors

Dr Elizabeth Rendon-Morales
(Engineering and Informatics)

Rendon-Morales’s research achievements rely on the design and testing of highly sensitive sensors to map the electrical activity of developing hearts in living embryos. She has successfully monitored in vivo functional activity from the zebrafish heart during its embryonic development. This research is the first step towards understanding how heart abnormalities, such as congenital cardiac arrhythmias, develop.

EMERGING RESEARCHER

Academic and industry collaboration that will guide future EU and UK government investment in re-distributed manufacturing for the healthcare sector

Dr Samuel Roscoe (Business, Management and Economics)

Roscoe was awarded a grant from the EPSRC to investigate how new manufacturing technologies, such as additive manufacturing (3D Printing), will change global pharma supply chains in favour of local manufacturing for local markets. The project findings will inform a UK government White Paper on the application of re-distributed manufacturing in healthcare and have supported the formation of a West Sussex life sciences cluster.



Shaping effective energy efficiency policy

Dr Jan Rosenow (Business, Management and Economics (SPRU))

Rosenow's research has made significant contributions to the development of effective energy efficiency policy at a national level. This includes contributions on how to finance energy efficiency; how to design obligations on energy companies to save energy; how to design an effective policy mix; and the role of EU energy efficiency policy.



Media and communication/urban histories – ‘You can’t move history. You can secure the future’: engaging youth in cultural heritage

Dr Pollyanna Ruiz (Media, Film and Music)

In 2014 Ruiz secured funding from the AHRC to develop and lead a multidisciplinary team that investigated the strategies and tactics used by activists to communicate with the broader public. This involved collaborating with stakeholders involved in the Long Live South Bank campaign in order to map the dialogue between campaigners, the general public and the site developers.

A radically new approach to quantum computing

Dr Sebastian Weidt (Mathematical and Physical Sciences)

Together with a strong team Weidt has developed a completely new approach to quantum computing which replaces the previously required millions of ultra-stable laser beams with a handful of simple-to-generate microwave fields. This puts the development of a quantum computer within reach of current technology. Weidt is now working on building a quantum computer demonstrator device here at Sussex.

Exploring the distant universe

Dr Stephen Wilkins (Mathematical and Physical Sciences)

Wilkins research focusses on understanding the formation and evolution of galaxies, particularly in the early Universe. He achieves this by both analysing observations from the Hubble Space Telescope and running super-computer simulations in which he produces ‘synthetic Universes’ to test understanding of the physical processes important in shaping our Universe.

Mathematical biology and scientific computing: track the moving and fathom the living

Dr FengWei Yang (Mathematical and Physical Sciences)

Yang's research brings maths and biology together to explore why and how cells move. Using advanced computational techniques, he is able to collaborate with biologists for fruitful results. His research is a gap-closer and through his industrial partners, it has the potential to improve the quality of the work for their 30,000 customers over 40 countries worldwide.

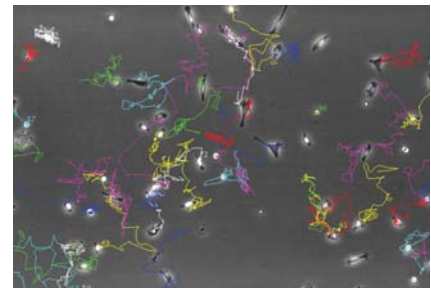


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Rorden Wilkson

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RESEARCH AND ENTERPRISE

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rqi@sussex.ac.uk

Read more about the impact of Sussex research at:
www.sussex.ac.uk/research/impact



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