



# sip



## SCIENCE IN PARLIAMENT SPECIAL STEM for Britain



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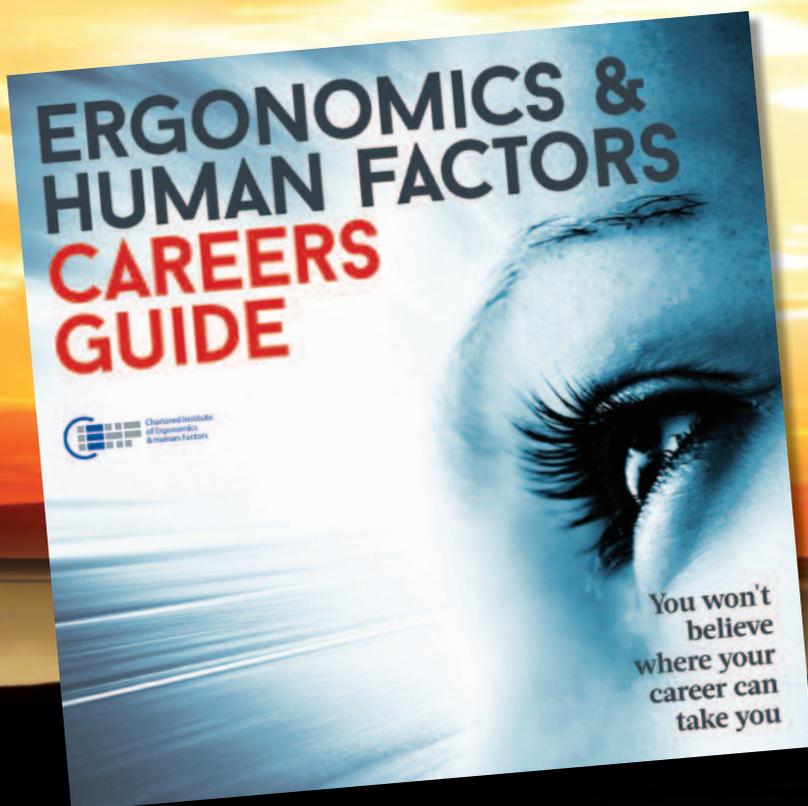
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Stephen Metcalfe MP, Chairman, Parliamentary and Scientific Committee

Science in Parliament has two main objectives:

1. to inform the scientific and industrial communities of activities within the United Kingdom Parliament of a scientific nature and of the progress of relevant legislation;
2. to keep Members of Parliament abreast of scientific affairs.

On the 12th March I was delighted to once again host STEM for Britain and welcome early career researchers from universities and research

institutions from around the country to Westminster.

This annual competition is an important date in the parliamentary calendar as it gives MPs an opportunity to speak directly to a wide range of the UK's best young researchers.

These early career engineers, mathematicians and scientists are the architects of our future and STEM for Britain is politicians' best opportunity to meet them and understand their work.

The studies were displayed as posters which were intended not only to reflect the importance of the research but also be intelligible to those with no scientific background. Entries were judged by eminent subject specialists from around the country.

As ever, the event wouldn't have been possible without the help of all the major learned societies involved in its organisation, especially the Royal Academy of Engineering, the Royal Society of Chemistry, the Institute of

Physics, the Royal Society of Biology, and the Council for the Mathematical Sciences.

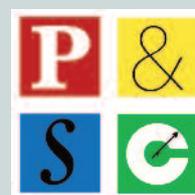
I must also thank all the organisations which have generously sponsored or supported the event including the Clay Mathematics Institute, Warwick Manufacturing Group, UK Research and Innovation, the Institute of Biomedical Science, the Heilbronn Institute for Mathematical Research, The Physiological Society, the Nutrition Society, the Comino Foundation and the Society for Chemical Industry.

Last, but by no means least, without our panels of expert judges from every discipline we would never have been able to decide who should win the Awards! This publication showcases the amazing day that was had by all.

I hope you enjoy the collection of memorable moments from STEM for Britain 2018 and hope to see you all on the 11th March 2019!



The Journal of the Parliamentary and Scientific Committee. The Parliamentary and Scientific Committee is an All-Party Parliamentary Group of members of both Houses of Parliament and British members of the European Parliament, representatives of scientific and technical institutions, industrial organisations and universities.



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# The support of a number of important organisations is vital for STEM for Britain...



"WMG is delighted to sponsor the STEM for Britain engineering awards for 2018. Britain needs an economy built on technical innovation, improved productivity and long-term investment, it is crucial therefore that we support innovative research which has the potential to change the way we live.

At WMG, we have focused on the practical applications of the highest quality scientific research for Nearly four decades, driving innovations in fields as diverse as battery technology and healthcare. In the future, the engineers presenting today can make a similar impact on our society."

**Professor Lord Bhattacharyya, Chairman, WMG**



"The Institute of Biomedical Science is proud to sponsor STEM for Britain which is an excellent opportunity for biological and biomedical scientists to showcase their research and raise awareness of their valuable work to politicians and the public.

**Alison Geddis, IBMS President**



"The inclusion of mathematics in STEM for Britain recognises the vitality and strength of the discipline in the UK and the huge part that all branches of mathematics play in underpinning science and technology."

**Professor N M J Woodhouse, President, Clay Mathematics Institute**



"As a Research Institute whose focus is on fundamental mathematics and its applications to UK national interests, and on supporting mathematical research across the country, HIMR is delighted to be associated with STEM for Britain and offers its warmest congratulations to all of the Award winners."

**Professor Jon Keating FRS, Chair Heilbronn Institute for Mathematical Research**

## UK Research and Innovation

"Early-career researchers play a vital role in the UK's world leading research and innovation base. UK Research and Innovation is pleased to be able to support STEM for Britain in its work connecting them with policy makers.

UK Research and Innovation is committed to continued support for researchers. Since our launch in April we have created a new £900m Future Leaders Fellowship Fund to develop the next generation of innovation and research leaders from the UK and across the world."

**Rebecca Endean, Director of Strategy, UK Research and Innovation**



"SCI's charitable objective is to bring together chemistry-related sciences and industry to promote applied science for the benefit of society. The current global challenges we face are significant and complex and require a multi-disciplinary, innovative approach. Supporting early-stage and early-career research scientists, engineers, and technologists is an essential part of that mission. SCI is proud to be part of STEM for Britain and to support the work of past-member, Dr Eric Wharton, who initiated SET for Britain."

**Sharon Todd, Executive Director, SCI**



"STEM for Britain is one of the highlights of the parliamentary calendar and we are proud to support it.

"The world faces great challenges in the years to come that will not be addressed by science or politics alone, but by us working together for a common purpose.

"Physiology is the science behind many of these challenges, from our ageing population to treatment of disease.

"Events like STEM for Britain are vitally important for scientists and politicians to engage with each other on these key issues."

**David Eisner, President of The Physiological Society**



2018

# PARLIAMENT SHOWCASES BRITAIN'S FUTURE

Scientists

Engineers

Technologists

Mathematicians

On Monday 12th March, 180 early career researchers from universities and research institutions throughout the country came to Westminster to take part in STEM for Britain 2018, the annual poster competition and exhibition to encourage interaction with MPs and Parliament. During the course of the day these scientists, engineers, technologists and mathematicians had the opportunity to show their posters and explain their research to some 70 Parliamentarians from both Houses.

The competition was divided into five specialist sections: Biological and Biomedical Sciences; Chemistry, Physics, Engineering and Mathematical Sciences. Gold, Silver and Bronze winners in each category received certificates and cash prizes, with medals going to the Gold winners.

At the end of the day the winners of the five Gold medals competed for the Westminster medal in memory of Dr Eric Wharton, founder of STEM for Britain. Here, with the quality of the science already ready proven with a Gold medal, the judges had to decide which of the five posters best demonstrated the presenter's skill in communicating the scientific concept.

Judging panels for each category were formed of distinguished scientists, engineers and mathematicians from the Royal Academy of Engineering, the Royal Society of Chemistry, the Institute of Physics, the Royal Society of Biology, The and the Council for the Mathematical Sciences.

The judges' initial task had been to select the 180 posters for the exhibition and final of the competition from nearly 400 high quality entries.

The event is a two-way process designed to strengthen the dialogue between Parliament and the science, technology, engineering and mathematical communities.

STEM for Britain would not be possible without the help of all the major learned societies involved in organising the event especially the Royal Academy of Engineering, the Royal Society of Chemistry, the Institute of Physics, the Royal Society of Biology, and the Council for the Mathematical Sciences.

And also all the organisations which have generously supported the event including the Clay Mathematics Institute, Warwick Manufacturing Group, UK Research & Innovation, the Institute of Biomedical Science, the Heilbronn Institute for Mathematical Research, The Physiological Society, the Nutrition Society and SCI.

However, the researchers who exhibited and displayed their work are the true 'engine room' of R&D. The success of the UK in the competitive knowledge economy of the 21st Century is going to depend crucially on their expertise.

Let's meet some of them...



# PHYSICAL SCIENCES EXHIBITION – PHYSICS

## The 2018 STEM for Britain Awards –

**Gold:** Helen Parker, from the College of Medicine and Veterinary Medicine, University of Edinburgh, who presented on ‘Multispectral imaging of lung disease’.

**Silver:** Claire Burke, from the Astrophysics Research Institute, Liverpool John Moores University – ‘Astro-ecology: applying techniques from astrophysics to revolutionise conservation economy’.

**Bronze:** Evan Sheridan, from King’s College London, on ‘Next generation materials for smart technology applications’.

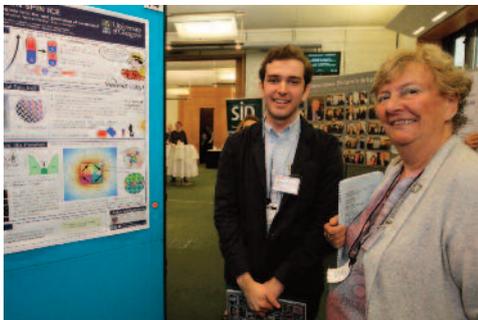
Dame Julia Higgins, President of the Institute of Physics presented the awards.



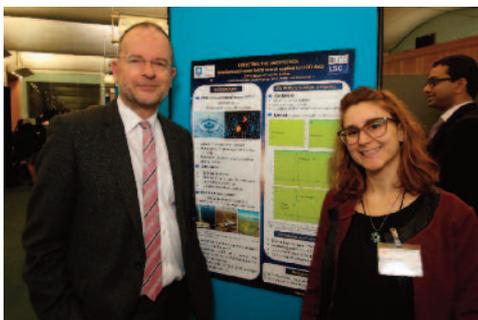
Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee); Helen Parker (Gold Award Winner); Dame Julia Higgins (President, Institute of Physics), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)



Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee); Claire Burke (Silver Award Winner); Dame Julia Higgins (President, Institute of Physics), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)



Gavin Macauley, from the University of Glasgow, with Dame Julia Higgins, President of the Institute of Physics



Elena Massera, from the University of Sheffield, with Paul Blomfield MP



Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee); Evan Sheridan (Bronze Award Winner); Dame Julia Higgins (President, Institute of Physics), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)

# PHYSICAL SCIENCES EXHIBITION – CHEMISTRY

## The 2018 STEM for Britain Awards –

**Gold:** Kim Liu, Department of Chemistry, University of Cambridge: 'Developing bicyclic peptides as  $\beta$ -quadruplex ligands'.

**Silver:** Michelle Teplensky, Department of Chemical Engineering & Biotechnology, University of Cambridge: 'Metal-organic frameworks as a tool for therapeutic delivery'.

**Bronze:** Jason Williams, Department of Chemistry, University of Strathclyde: 'Quantum cascade laser infrared spectroscopy: accelerating the development of pharmaceutical manufacturing processes in flow'.

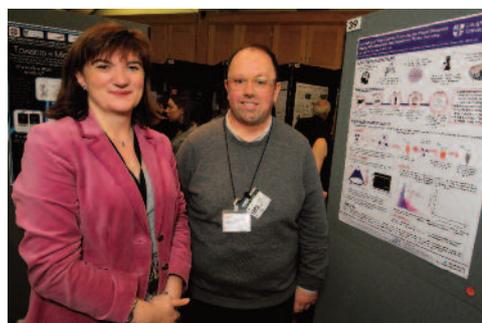
Dr Helen Pain, Deputy Chief Executive, Royal Society of Chemistry, presented the awards.



Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee), **Kim Liu** (Gold Award Winner), Dr Helen Pain (Deputy Chief Executive, Royal Society of Chemistry), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)



Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee), **Michelle Teplensky** (Silver Award Winner), Dr Helen Pain (Deputy Chief Executive, Royal Society of Chemistry), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)



Nicky Morgan MP with Matthew Healey of Loughborough University



Julia Hyslop, University of Strathclyde, with Stephen McPartland MP



Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee), **Jason Williams** (Bronze Award Winner), Dr Helen Pain (Deputy Chief Executive, Royal Society of Chemistry), Stephen Metcalfe MP (Chair, Parliamentary & Scientific Committee)

# STEM4Brit Social media report

In recent times the power of social media is becoming more and more apparent in the technological world we live in. The way data is shared and viewed around the world is changing and the way science news is consumed is evolving with it. Events like STEM4Brit are a great example of how science can be conveyed to a wider audience. The event rewards conveying the information as much as the value of the work itself, this is a big opportunity for early career researchers to publicise the outcomes of their hard work to a large diverse audience.

The STEM4Brit event brings the finest early career researchers together to showcase the best and most innovative science happening at institutions across Britain. One of the biggest challenges facing early career researchers is conveying their extremely specialist work to people outside of their field. By using popular hashtags that the public can relate to, researchers have their work reach large amounts of people, this is demonstrated by the two most popular hashtags from this year's event being #CoralReef and #DarkMatter (both reaching over 5000 twitter users!)

## This year's stats:

This year's event saw some fantastic engagement with the wider scientific community as well as the public, tweets featuring the hashtag #STEM4Brit collected around 200,000 impressions (impressions being the amount of individual twitter accounts that saw #STEM4Brit). One of the most interesting stats from the event was the perfect male/female split of the accounts interacting on the day of the event. The STEM4Brit account also reached 6th on the 'top trending' section of twitter, this demonstrates both the increasing role of social media in science and the public's hunger for cutting edge science.

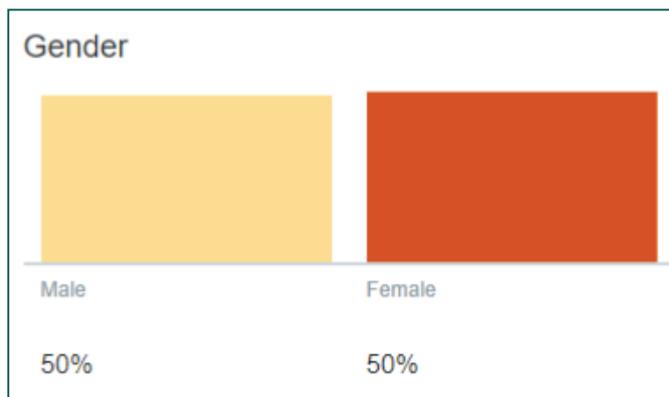
Follow along next year

Twitter: @STEM4Brit #STEM4Brit19

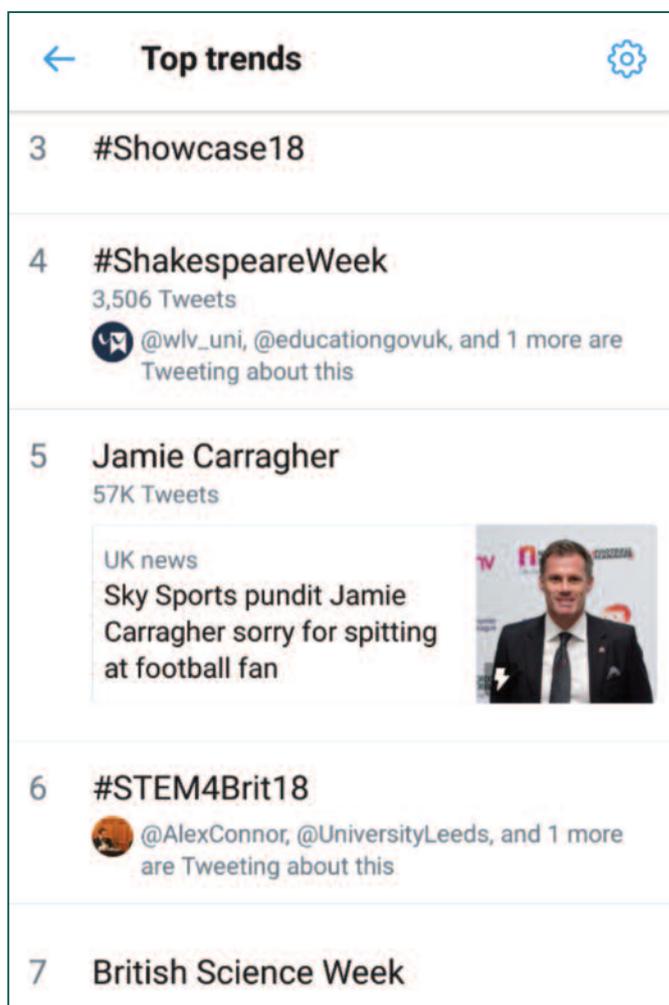
Facebook: [www.facebook.com/STEM4Brit](http://www.facebook.com/STEM4Brit)



**Charlie Owen**  
Social Media Consultant



1. Gender split of engagements on twitter



2. Top trends from the event day

# STEM for BRITAIN: A past winner's perspective



Stephen Metcalfe MP, Chair of the Parliamentary & Scientific Committee, RB Regional Medical Director, Dr. Imran Lodhi and Dr ThaoNguyen Nguyen

**It was a great pleasure to be invited back to STEM for BRITAIN 2018. As I walked around and spoke to enthusiastic poster presenters, I couldn't help but recollect fond memories from eight years ago when I was in their shoes.**

March 2010: A relatively shy PhD student originally from Vietnam, I was very excited about being selected to present my work on modified DNA & healthcare applications to MPs, Judges from the Royal Society of Chemistry and industry experts in Parliament. Little did I expect my poster presentation could win amongst the work of the best of UK early-stage researchers or that participating in this prestigious annual STEM competition could make a significant impact on my development.

Yet eight years later I can still feel the effect of winning the Chemistry section at STEM for BRITAIN (SfB) 2010 on my career. Achieving the Roscoe medal further demonstrated my credentials to funding bodies and employers, thus enabling me to work in various roles for different industries. Right after SfB, I was awarded with EPSRC funding to conduct skin cancer research. SfB award also helped make a transition for my early career from academia to industry, via the Knowledge Transfer Partnership program co-funded by Innovate UK (previously known as The Technology Strategy Board), in which I managed strategic technology transfer between the University of Bradford and RB Healthcare (UK) Ltd. Since then I have moved to more commercial roles in consultancy and currently work as a medical affairs scientist at RB UK Commercial Ltd, a role that allows me to bridge R&D, regulatory and commercial sides of healthcare.

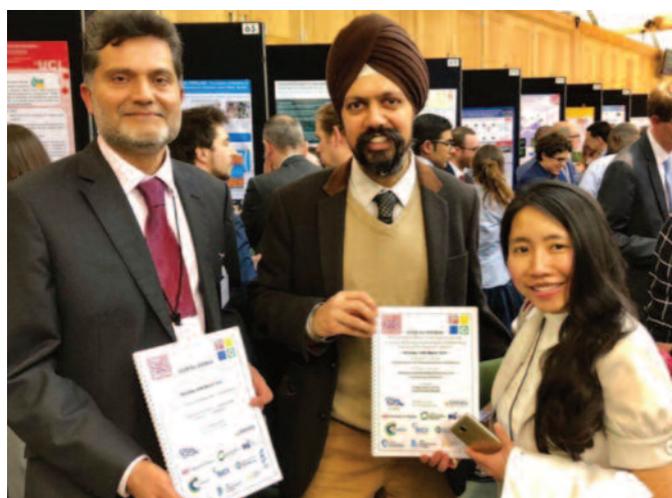
It would be an understatement to mention only the impact SfB has on my career. On a personal level, having presented my work to MPs and key opinion leaders has really boosted my confidence to present on other big stages, such as at the IUPAC (the 'United Nations' of Chemistry) World Chemistry Leadership Meeting 2013 where I represented RB Healthcare (UK) Ltd and young UK chemists to discuss with world leading academics and industry experts the importance of academia-industry partnerships in driving innovation. SfB inspired me to share the experience with the

former ambassador of Vietnam to the UK and look towards running a similar competition to support innovation and industry in Vietnam.

Having discussed with scientists from other economic powerhouses who felt disconnected from their policy makers, I feel privileged that we young scientists in the UK have STEM for BRITAIN, a unique platform to engage STEM with decision makers. This view is also shared amongst other past SfB winners, some of whom have kept in touch developing into a network of friendships giving the opportunity for cross-specialty collaboration as well as sharing career experience and advice. As a result of this I know that other past SfB winners have experienced similar impact from winning SfB on their development. **Dr. Valeska Ting**, now Associate Professor in Mechanical Engineering at Bristol University, shared her story of how winning the Engineer section at SfB 2013 inspired her to pursue other ways to engage with policy makers and she subsequently took part in the Royal Society Pairing Scheme, wrote a policy brief on hydrogen vehicles, as well as taking part in Voice of the Future. Another winner of the Engineer section from SfB 2010, **Dr. Julian Rose** who is now Technology & Research Project Manager at Dyson said participating in SfB further ignited his passion of STEM and led him to working with leading-edge companies and managing a Government funded Grand Challenge Network to tackle the grand challenges facing science over the next 5 – 50 years.

Needless to say we SfB winners highly appreciate the work done by the event organisers and sponsors (e.g. BP, AgChemAccess, GSK, WMG and the Parliamentary & Scientific Committee etc.) to provide us with a unique opportunity to showcase research to politicians and nurture our passion for STEM. A lot of SfB winners are still contributing to UK R&D and businesses through our jobs and activities, and we look forward to getting involved in STEM for BRITAIN to help drive UK innovation and support future early stage researchers.

**Dr. ThaoNguyen Nguyen**  
STEM for BRITAIN 2010 – Chemistry section Winner



Dr. Imran Lodhi RB Regional Medical Director, Tan Dhesi MP and Dr ThaoNguyen Nguyen

# MATHEMATICAL SCIENCES EXHIBITION

## The 2018 STEM for Britain Awards –

**Gold:** Dr Celine Maistret, Mathematics, University of Bristol: ‘New evidence toward the Birch and Swinnerton-Dyer conjecture’.

**Silver:** Linda Irons, School of Mathematical Sciences, University of Nottingham: ‘Mathematical modelling of asthma’.

**Bronze:** Dr Yoann Altmann, Engineering and Physical Sciences, Heriot Watt University: ‘New computational methods of low illumination imaging and sensing’.

Professor Nick Woodhouse, President, Clay Mathematics Institute, and Sir Adrian Smith, Chair of the Council of Mathematical Sciences presented the awards.



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee; Prof Nick Woodhouse, President, Clay Mathematics Institute (Gold and Silver Supporter), **Dr Celine Maistret** (Gold Award Winner); Professor Sir Adrian Smith, Chair, Council of Mathematical Sciences; Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee)



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee; Prof Nick Woodhouse, President, Clay Mathematics Institute (Gold and Silver Supporter), **Linda Irons** (Silver Award Winner); Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee)



Chris Leslie MP meets Dr Paul Knott of the University of Nottingham



Andrew Starkey, Research and Innovation, British Telecom, with Paul Sweeney MP



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee; **Dr Yoann Altmann** (Bronze Award Winner); Professor Sir Adrian Smith, Chair, Council of Mathematical Sciences; Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee

# BIOMEDICAL & BIOLOGICAL SCIENCES EXHIBITION

## The Stem for Britain 2018 Awards:

**Gold:** Maria Karabova, Faculty of Life Sciences and Medicine, King's College London: 'Early life exercise produces enduring benefits on hippocampal – dependent memory in ageing mice'.

**Silver:** Dr James Larkin, CRUK/MRC Oxford Institute, Department of Oncology, University of Oxford: 'Brain tumour diagnosis through urine metabolic analysis'.

**Bronze:** Dr Alastair Wilson, Faculty of Medicine, University of Southampton: 'Development of synthetic surfactant proteins A and D to prevent lung disease in babies'.

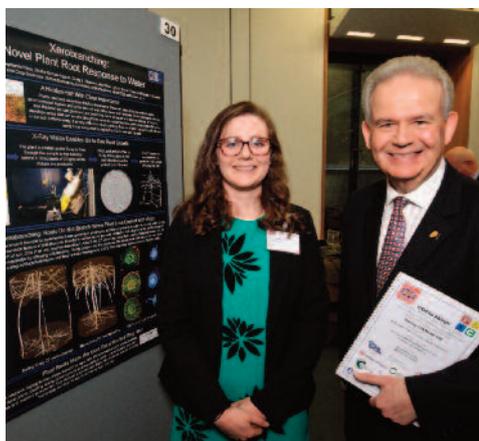
Professor Bridget Lumb, President-elect of The Physiological Society, (sponsor, Gold Award) David Wells, London Council Member, Institute of Biomedical Science (sponsor, Silver and Bronze Awards) and Dr Mark Downs, Chief Executive, Royal Society of Biology, presented and spoke at the awards ceremony.



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee; Prof Bridget Lumb, President-Elect, The Physiological Society (Gold Award Sponsor) **Maria Karabova** (Gold Award Winner) Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee, David Wells, London Council Member, Institute of Biomedical Science (Silver Award Sponsor); **Dr James Larkin** (Silver Award Winner); Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee



Emily Morris, University of Nottingham, with Dr Julian Lewis MP



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee, David Wells, London Council Member, Institute of Biomedical Science (Bronze Award Sponsor); **Dr Alastair Watson** (Bronze Award Winner); Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee

# ENGINEERING EXHIBITION

## The STEM for Britain 2018 Awards:

**Gold:** Louise Mason, School of Engineering, Glasgow University: 'Investigating the viscoelastic properties of complex materials and cells to study cancer migration'.

**Silver:** Iva Burova, Mechanical Engineering, University College London: 'Mathematical modelling of static microcarrier cultures for bone tissue engineering'.

**Bronze:** – Daniela Massiceti, Department of Engineering Science, University of Oxford: 'A generative model for visual dialogue'

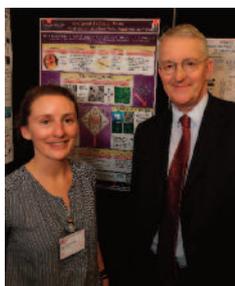
Dr David Clark, Principal Fellow at Warwick Manufacturing Group (WMG), prizes sponsor and Professor Steve McLaughlin, Chair of the Judging Panel, shared their thoughts on the future of engineering before presenting the awards to the three winners.



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee, **Louise Mason** (Gold Award Winner); Dr David Clark, Principal Fellow, Warwick Manufacturing Group (Gold, Award Sponsor); Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee

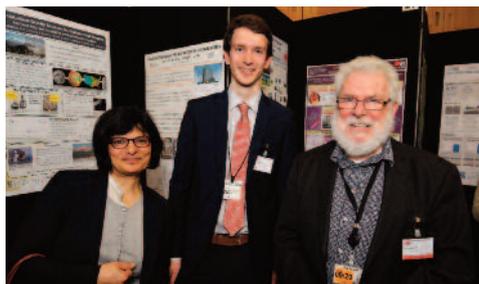


Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee, **Iva Burova** (Silver Award Winner); Dr David Clark, Principal Fellow, Warwick Manufacturing Group (Silver Award Sponsor), and Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee



Professor Steve McLaughlin, Chair, Engineering Judging Panel, remarks on the high calibre of entrants.

Heather Owston from the School of Mechanical Engineering, University of Leeds with Hilary Benn MP



Thangam Debbonaire MP, Joshua Mudie, who is reading Civil Engineering at the University of Bristol, and Dr Douglas Naysmith



Dr Stephen Benn, Vice President, Parliamentary & Scientific Committee, **Daniela Massiceti** (Bronze Award Winner); Dr David Clark, Principal Fellow, Warwick Manufacturing Group (Bronze Award Sponsor), and Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee

# THE WESTMINSTER MEDAL

The finalists...



L-R, Helen Parker, Gold – Physics, Kim Lui, Gold – Chemistry, Dr Celine Maistret, Gold – Maths, Maria Karabova, Gold – Biology, Louise Mason, Gold – Engineering.

At the end of the day the winners of the five Gold medals competed for the Westminster medal in memory of Dr Eric Wharton, founder of STEM for Britain. Here, with the quality of the science already ready proven with a Gold medal, the judges had to decide which of the five posters best demonstrated the presenter's skill in communicating the scientific concept.

And the winner was...Helen Parker!!



L-R, Sharon Todd, Executive Director, Society of Chemical Industry (Westminster Medal Sponsor); Nick Bourne, SCI London Group Committee Member (Westminster Medal Sponsor); Sue Wharton, STEM for Britain; **Ms Helen Parker** (Westminster Medal Winner); Dr Stephen Benn (Vice President, Parliamentary & Scientific Committee; Stephen Metcalfe MP, Chair, Parliamentary & Scientific Committee)

# What did the winners of STEM for Britain have to say?

"I'm extremely happy but I was surprised to have won because there is a large biological element to my work. I've always been interested in the interaction between government and science so I wanted an opportunity like this."



**Helen Parker – Gold Award and winner of the Westminster Medal**

"I think it's very important for politicians to be aware of the technologies and the research that's being done. This is a unique event and everybody makes an effort to understand one another."



**Evan Sheridan – Bronze Award**

"I was delighted to be accepted to take part in the STEM for Britain competition, as the event gave me the opportunity to present my research on cancer migration, interact with politicians and discuss my work with experts from a broad range of scientific fields."



"Winning the Gold Medal for Engineering has been a huge honour as there were many incredibly innovative engineers taking part in the competition. I would like to thank my supervisors and collaborators for all of their support and advice they have given me throughout the first year of my PhD in Biomedical Engineering."

**Louise Mason – Gold Award**

"I had a great time at the STEM for Britain event and met a number of people interested in my research and its applications. To be recognised with an award as well is a fantastic honour and I would like to thank the judges for their confidence in my work."



"In addition, I would like to thank my funders, Cancer Research UK and the Medical Research Council, for supporting this work, as well as my colleagues and collaborators, without whom none of this project would be possible."

**Dr James Larkin – Silver Award Winner**

"It's been a huge surprise to actually win gold at the competition. I'm honoured that this exposition of my work was judged interesting and accessible. Hopefully this will help enhance awareness of how beautiful and fascinating number theory is."



I enjoyed writing the abstract quite a lot but found creating the poster extremely challenging. It took me a lot of time and I ended up never being satisfied. It is really difficult to find the right balance between adjusting the level to a lay audience and keeping the maths accurate and the exposition rigorous.

I enjoyed the opportunity of looking at everyone else's work. All finalists were extremely passionate about their work leading to very interesting discussions. It's quite amazing to see the diversity of topics studied just in maths, let alone biology, engineering and physics."

**Dr Celine Maistret – Gold Award**

"It's been great, having to encapsulate your research in a different way from how you're normally used to. Having to talk about the science of things to lay people and try and get it to a level that's understandable by everyone, so it's a very different experience from what I've done before."



On winning the bronze award he said, "It's fantastic. I've just submitted my thesis a couple of weeks ago so it's a great end to my PhD. Very unexpected but fantastic."

**Jason Williams – Bronze Award**

"I am incredibly honoured to have been awarded the Silver medal in the Engineering session! All the researchers which took part are doing amazing worthwhile work, and to be selected among such competition is wonderful recognition of my work! This award would not have been possible without the support of my supervisors Prof Ivan Wall and Dr Rebecca Shipley, UCL Mechanical Engineering and my family!"



"The event itself was a great platform to meet other researchers from various fields, exchange ideas and experience with colleagues at different levels in their research careers. It was also a great opportunity to meet my local MP Dawn Butler who is a great advocate for the equality of women in all walks of life!"

**Iva Burova – Silver Award**



## STEM for Britain Judges, without whom we would never have been able to decide who should win the Awards.

Professor Bashir Al-Hashimi

Professor Malcolm Bennett

Dr Guy S Bewick

Professor David Blackburn

Professor David Coates

Professor John Coggins

Dr Liz Conlon

Professor Darren Crowdy

Professor Paul M Cullis

Dr Elizabeth Cunningham

Professor Brian G Falzon

Professor Helen Fielding

Professor Colin Garner

Professor Phil Gilmartin

Dr Sarah Hall

Dr Bryan Hanley

Professor Jon Keating

Dr Celia Knight

Dr Vincent Knight

Professor Peter Knowles

Dr Julia Lodge

Professor Kevin McConway

Professor Graham McGeown

Professor Stephen McLaughlin

Dr Peter J Machin

Professor Jeff Magee

Professor Elizabeth Mansfield

Professor Elaine Martin

Professor Kevin O'Dell

Professor Demetrios Papageorgiou

Professor Tim J Pedley

Professor Albert Rodger

Dr Mark Roberts

Professor Mary Ryan

Professor Mark Sandler

Professor Paul Shearing

Professor Ravi Silver

Professor Constantinos Soutis

Dr Klaus Suhling

Dr Mark Telling

Professor Alyson Tobin

Professor Simon Van Heyningen

Dr Heather A Williams

Professor Stephen Williamson

Professor Robert J K Wood

Professor Susan Wray

# STEM for Britain is very much a team effort and would not be possible without the help of all the major Learned Societies involved...



"I'm delighted to see all the superb engineering research on display at STEM for Britain this year. From medical technology to transport systems of the future, the talented engineers bringing their work to Parliament demonstrates just how varied the world of engineering is and the many ways in which it impacts our society."

**Professor Dame Ann Dowling**  
OM DBE FREng FRS,  
President of the Royal Academy  
of Engineering



"It is wonderful to showcase the importance of the mathematical sciences to a wider audience. It is paramount to encourage early-career research scientists, engineers, technologists and mathematicians and the STEM for Britain event is a very effective way of doing this."

**Sir Adrian Smith,**  
Chair of the Council for  
the Mathematical Sciences



"Scientists and politicians both have major roles in addressing some of society's biggest challenges, from climate change to food security. STEM for Britain is a rare opportunity for politicians to meet some of our most promising early career scientists and understand their work."

"It is important that MPs make policy decisions informed by evidence, and a greater mutual understanding between MPs and scientists will improve this. The Government needs to ensure the UK continues to lead the world in biological research where we have enormous strength".

**Dr Mark Downs,**  
Chief Executive of the  
Royal Society of Biology



"STEM for Britain provides a great opportunity for some of our outstanding young scientists to present aspects of their research in Parliament, allowing Members of Parliament to find out first-hand about some of the ground breaking research taking place here in the UK."

"All the exhibitors should feel very pleased with what they have achieved and I hope that they will value sharing the excitement of their research with key politicians and policy makers."

**Professor Dame Julia Higgins**  
President of the Institute of Physics



"The Nutrition Society is pleased to have been invited to participate in STEM for Britain in 2018. The event is a unique opportunity for early career researchers, in the fast-growing field of nutritional science research, to achieve wider exposure for their exciting leading-edge research projects through interaction with Parliamentarians. The Society looks forward to continuing its support to STEM for Britain for many years to come."

**Mark Hollingsworth,**  
Chief Executive Officer



"This is the tenth year that we have supported STEM for Britain; and in many ways the event reflects our ambitions for the Royal Society of Chemistry itself."

"Each year we look forward to the competition as a fantastic chance to recognise and celebrate some of our most talented young scientists. It's also a great way for our elected representatives to hear first-hand about some of the exciting research that is happening here in the UK."

"I'd like to take this opportunity to congratulate all of our STEM for Britain finalists. We clearly have the necessary talent and inspiration to keep the UK at the forefront of global science."

**Dr Helen Pain, Deputy Chief Executive,**  
Royal Society of Chemistry



2019

## STEM for Britain 2019 will take place in the Houses of Parliament on Monday 11th March during British Science Week

Applications are invited from early-career research scientists, engineers, technologists and mathematicians who wish to exhibit posters in one of the following five areas:

- Biological and Biomedical Science
- Chemistry
- Engineering
- Mathematical Sciences
- Physics

**The closing date for applications is Monday 3 December.**

A wide range of important scientific, engineering and mathematics institutions are lending their support to this event, including the Royal Society of Biology, The Physiological Society, the Royal Society of Chemistry, the Royal Academy of Engineering, the Council for the Mathematical Sciences, the Institute of Biomedical Science, the Clay Mathematics Institute, the Nutrition Society, the Heilbronn Institute and the Institute of Physics. This reflects the importance we all attach to the encouragement of researchers at this stage in their careers.

Prizes will be awarded for the posters presented in each discipline which best communicate high level science, engineering or mathematics to a lay audience.

The Westminster Medal for the overall winner will be awarded in memory of the late Dr Eric Wharton, who did so much to establish SET for Britain as a regular event in the Parliamentary calendar.

Full details of the competition and exhibition including the application form can be found on the STEM for Britain website at: [www.stemforbritain.org.uk](http://www.stemforbritain.org.uk)

## UK Research and Innovation

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UK Research  
and Innovation



Operating across the whole of the UK with a combined budget of more than £6 billion, UK Research and Innovation brings together the seven Research Councils, Innovate UK and Research England.

We are an independent organisation with a strong voice for research and innovation, both to government and internationally, we are supported and challenged by an independent chair and board. We are principally funded through the Science Budget by the Department for Business, Energy and Industrial Strategy (BEIS).

Our mission is to be a trusted partner and to ensure research and innovation continues to flourish in the UK. We will support and help connect the best researchers and innovators with customers, users and the public. We will invest every pound of taxpayers' money wisely in a way that maximises impact for citizens, in the UK and across the world.



Arts & Humanities  
Research Council

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AHRC funds world-class, independent researchers in a wide range of subjects. Their research provides social and cultural benefits and contributes to the economic success of the UK but also to the culture and welfare of societies around the globe.

## Biotechnology and Biological Sciences Research Council



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BBSRC invests in world-class bioscience research and training. Their research is helping society to meet major challenges, including food security, green energy and healthier, longer lives and underpinning important UK economic sectors.



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ESRC is the UK's largest funder of research on the social and economic questions facing us today. Their research shapes public policy and contributes to making the economy more competitive, as well as giving people a better understanding of 21st century society.



Engineering and Physical Sciences  
Research Council

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EPSRC funds engineering and physical sciences research, covering fields from healthcare technologies to structural engineering, manufacturing to mathematics, advanced materials to chemistry.

## Innovate UK

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Innovate UK works with people, companies and partner organisations to find and drive the science and technology innovations that will grow the UK economy. They drive growth by working with companies to de-risk, enable and support innovation.



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MRC is at the forefront of scientific discovery to improve human health. Their scientists tackle some of the greatest health problems facing humanity in the 21st century, from the rising tide of chronic diseases associated with ageing to the threats posed by rapidly mutating micro-organisms.

## Natural Environment Research Council



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NERC is the driving force of investment in environmental science. Their leading research, skills and infrastructure help solve major issues and bring benefits to the UK, such as affordable clean energy, air pollution, and resilience of our infrastructure.



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Research England is a new council within UK Research and Innovation. Taking forward the England-only responsibilities of HEFCE in relation to research and knowledge exchange, Research England will create and sustain the conditions for a healthy and dynamic research and knowledge exchange system in English universities.



Science & Technology  
Facilities Council

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STFC is a world-leading multi-disciplinary science organisation. Their research seeks to understand the Universe from the largest astronomical scales to the tiniest constituents of matter, yet creates impact on a very tangible, human scale.

## Association of the British Pharmaceutical Industry



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The Association of the British Pharmaceutical Industry (ABPI) represents innovative research-based biopharmaceutical companies, large, medium and small, leading an exciting new era of biosciences in the UK. Our industry, a major contributor to the economy of the UK, brings life-saving and life-enhancing medicines to patients. Our members are researching and developing over two-thirds of the current medicines pipeline, ensuring that the UK remains at the forefront of helping patients prevent and overcome diseases. Topics we focus on include:

- All aspects of the research and development of medicines including clinical research and licensing
- Stratified medicine
- Vaccines, biosimilars, small and large molecules, cell therapy and regenerative medicine



Contact: Professor Richard Brook OBE FREng  
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AIRTO – Association of Innovation, Research & Technology Organisations – is the foremost membership body for the UK's innovation, research and technology sector, representing 80% of organisations in the sector.

AIRTO's members deliver vital innovation and knowledge transfer services which include applied and collaborative R&D, (frequently in conjunction with universities), consultancy, technology validation and testing, incubation of commercialisation opportunities and early stage financing. AIRTO members have a combined turnover of over £5.5bn from clients both at home and outside the UK, and employ over 47,000 scientists, technologists and engineers.

AMPS

The Association of Management and Professional Staffs.

Contact:  
Tony Harding  
07895 162 896 for all queries whether for membership or assistance.  
Branch Office Address:  
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M50 3SG.

Website: www.amps-tradeunion.com

We are a Trades Union for Management and Professional Staff working in the pharmaceutical, chemical and allied industries.

We have produced a training programme funded by the EU on diversity and helping women managers remain in the workplace after a career break. This training programme is aimed at both men and women and is intended to address the shortfall in qualified personnel in the chemical and allied industries.

We are experts in performance based and field related issues and are affiliated to our counterparts in EU Professional Management Unions.



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AWE plays a crucial role in our nation's defence by providing and maintaining warheads for the UK's nuclear deterrent and delivers advice and guidance on a 24/7 basis to UK government in the area of national security.

We are a centre of scientific, engineering and technological excellence, with some of the most advanced research, design and production facilities in the world. AWE is contracted to the Ministry of Defence (MOD) through a Government-owned-contractor-operated (GOCO) arrangement. While our sites and facilities remain in government ownership, their management, day-to-day operations and maintenance of Britain's nuclear stockpile is contracted to a private company: AWE Management Limited (AWE ML). AWE ML is a consortium comprising three partners: Jacobs Engineering Group, the Lockheed Martin Corporation and Serco Group plc.



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The Biochemical Society works to promote the molecular biosciences; facilitating the sharing of expertise, supporting the advancement of biochemistry and molecular biology and raising awareness of their importance in addressing societal grand challenges. We achieve our mission by:

- bringing together molecular bioscientists;
- supporting the next generation of biochemists;
- promoting and sharing knowledge and
- promoting the importance of our discipline.



British Antarctic Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

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British Antarctic Survey (BAS), an institute of NERC, delivers and enables world-leading interdisciplinary research in the Polar Regions. Its skilled science and support staff based in Cambridge, Antarctica and the Arctic, work together to deliver research that uses the Polar Regions to advance our understanding of Earth as a sustainable planet. Through its extensive logistic capability and know-how BAS facilitates access for the British and international science community to the UK polar research operation. Numerous national and international collaborations, combined with an excellent infrastructure help sustain a world leading position for the UK in Antarctic affairs. For more information visit www.bas.ac.uk @basnews



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The British Ecological Society is an independent, authoritative learned society, and the voice of the UK's ecological community. Working with our members we gather and communicate the best available ecological evidence to inform decision making. We offer a source of unbiased, objective ecological knowledge, and promote an evidence-informed approach to finding the right solutions to environmental questions.

## British In Vitro Diagnostics Association (BIVDA)



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BIVDA is the UK industry association representing companies who manufacture and/or distribute the diagnostics tests and equipment to diagnose, monitor and manage disease largely through the NHS pathology services. Increasingly diagnostics are used outside the laboratory in community settings and also to identify those patients who would benefit from specific drug treatment particularly for cancer.



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The British Nutrition Foundation (BNF), a registered charity, delivers impartial, authoritative and evidence-based information on food and nutrition. Its core purpose is to make nutrition science accessible to all, working with an extensive network of contacts across academia, education and the food chain, and through BNF work programmes focussing on education in schools and nutrition science communication.



## BRITISH PHARMACOLOGICAL SOCIETY

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The British Pharmacological Society is a charity with a mission to promote and advance the whole spectrum of pharmacology. It is the primary UK learned society concerned with drugs and the way they work, and leads the way in the research and application of pharmacology around the world.

Founded in 1931, the Society champions pharmacology in all its forms, across academia, industry, regulatory agencies and the health service. With over 3,500 members from over 60 countries worldwide, the Society is a friendly and collaborative community. Enquiries about the discovery, development and application of drugs are welcome.



## BRITISH SOCIETY OF SOIL SCIENCE

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The British Society of Soil Science (BSSS) or "BS cubed" as it is fondly known was founded in 1947 by a number of eminent British soil scientists. It was formed with the aims: to advance the study of soil; to be open to membership from all those with an interest in the study and uses of soil; and to issue an annual publication.



## Chartered Institute of Ergonomics & Human Factors

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Ergonomics, also called Human Factors, sometimes abbreviated 'E/HF' is a science-based discipline about 'designing for people'. E/HF takes into account the physical and mental capabilities, aptitudes and abilities of people acting individually (a pilot, a surgeon or nurse, train driver) or collectively, with or without equipment (a theatre team, air traffic control) in the design of workplaces, equipment and ways of working to deliver the least harmful, safest, most efficient, most elegant possible outcomes'. E/HF uses science to improve the places in which we work, live and relax and the ways in which we interact with people, equipment and systems.



## The British Society for Antimicrobial Chemotherapy

Mrs Tracey Guise  
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www.bsac.org.uk | www.antibiotic-action.com  
www.e-opat.com | www.nas-pps.com  
lwww.appg-on-antibiotics.com  
www.bsacsurv.org

The BSAC is an inter-professional organisation with over forty years of experience and achievement in antibiotic education, research and leadership. The Society has an active international membership and:

- Is dedicated to saving lives through the effective use and development of antibiotics, now and in the future.
- Communicates effectively about antibiotics and antibiotic usage via workshops, professional guidelines and its own high impact international journal, the Journal of Antimicrobial Chemotherapy.
- Is home to the UK-led global initiative Antibiotic Action
- Serves as secretariat to the All Party Parliamentary Group on Antibiotics



## Brunel University London

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Brunel University London is an international research active university with 3 leading research institutes:

**Institute of Energy Futures:** Led by Professor Savvas Tassou, the main themes of the Institute are *Advanced Engines and Biofuels, Energy Efficient and Sustainable Technologies, Smart Power Networks, and Resource Efficient Future Cities.*

**Institute of Materials and Manufacturing:** The main themes of research are *Design for Sustainable Manufacturing, Liquid Metal Engineering, Materials Characterisation and Processing, Micro-Nano Manufacturing, and Structural Integrity.* The Institute is led by Professor Luiz Wrobel.

**Institute of Environment, Health and Societies:** Professor Susan Jobling leads this pioneering research institute whose themes are *Health and Environment, Healthy Ageing, Health Economics Synthetic Biology, Biomedical Engineering and Healthcare Technologies, and Social Sciences and Health.*

Brunel University London offers a wide range of expertise and knowledge, and prides itself on having academic excellence at the core of its offer, and was ranked in the recent REF as 33rd in the UK for Research Power (average quality rating by number of submissions) and described by The Times Higher Education as one of the real winners of the REF 2014.

## The Cosmetic Toiletry & Perfumery Association



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www.thefactsabout.co.uk

CTPA is the UK trade association representing manufacturers of cosmetic products and suppliers to the cosmetic products industry. 'Cosmetic products' are legally defined and subject to stringent EU safety laws. CTPA is the authoritative public voice of a vibrant and responsible UK industry trusted to act for the consumer; ensuring the science behind cosmetics is fully understood.

## British Society for immunology

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The BSI is one of the oldest, largest and most active immunology societies in the world. We have over 5,000 members who work in all areas of immunology, including research and clinical practice.

The BSI runs major scientific meetings, education programmes and events for all ages. We disseminate top quality scientific research through our journals and meetings and we are committed to bringing the wonders and achievements of immunology to as many audiences as possible.

## Cavendish Laboratory



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The Cavendish Laboratory houses the Department of Physics of the University of Cambridge.

The research programme covers the breadth of contemporary physics

**Extreme Universe:** Astrophysics, cosmology and high energy physics

**Quantum Universe:** Cold atoms, condensed matter theory, scientific computing, quantum matter and semiconductor physics

**Materials Universe:** Optoelectronics, nanophotonics, detector physics, thin film magnetism, surface physics and the Winton programme for the physics of sustainability

**Biological Universe:** Physics of medicine, biological systems and soft matter

The Laboratory has world-wide collaborations with other universities and industry

## CLIFTON SCIENTIFIC Trust

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### Science for Citizenship and Employability, Science for Life, Science for Real

We build grass-roots partnerships between school and the wider world of professional science and its applications

- for young people of all ages and abilities
- experiencing science as a creative, questioning, human activity
- bringing school science added meaning and motivation, from primary to post-16
- locally, nationally, internationally (currently between Britain and Japan; also the Ukraine)

Clifton Scientific Trust Ltd is registered charity 1086933



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The Council for the Mathematical Sciences is an authoritative and objective body that works to develop, influence and respond to UK policy issues affecting mathematical sciences in higher education and research, and therefore the UK economy and society by:

- providing expert advice;
- engaging with government, funding agencies and other decision makers;
- raising public awareness; and
- facilitating communication between the mathematical sciences community and other stakeholders



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Founded in 1992 in memory of the UK's first female Professor of Physics, the Trust is the UK's leading charity dedicated to realising the potential of scientists and engineers returning to research after career breaks for family, caring and health reasons. Our Fellowship programme, working in partnership with universities, research councils, charities, learned societies and industry, enables individuals to undertake part-time research in universities and research institutes. Fellowships comprise a research project alongside an individually tailored retraining programme, with additional mentoring and support, enabling recipients to re-establish scientific credentials, update skills and redevelop confidence, in a suitably supportive environment.



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The Energy Institute (EI) is the chartered professional body for the energy sector, supporting over 22,000 individuals and 200 companies worldwide. The EI provides learning and networking opportunities, professional recognition and technical and scientific knowledge resources on energy in all its forms and applications.

The EI's purpose is to develop and disseminate knowledge, skills and good practice towards a safe, secure and sustainable energy system. It addresses the depth and breadth of the energy sector and informs policy by providing a platform for debate and scientifically-sound information.

A registered charity, the EI serves society with independence, professionalism and a wealth of expertise in all energy matters.



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EngineeringUK is an independent organisation that promotes the vital role of engineers, engineering and technology in our society. EngineeringUK partners business and industry, Government and the wider science and technology community: producing evidence on the state of engineering; sharing knowledge within engineering, and inspiring young people to choose a career in engineering, matching employers' demand for skills.



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Fera provides expert analytical and professional services to governments, agricultural companies, food retailers, manufacturers and farmers to facilitate safety, productivity and quality across the agrifood supply chain in a sustainable and environmentally compatible way.

Fera uses its world leading scientific expertise to provide robust evidence, rigorous analysis and professional advice to governments, international bodies and companies worldwide. Our food integrity, plant health, agri-tech and agri-informatics services ensure that our customers have access to leading edge science, technology and expertise.



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FirstGroup are the leading transport operator in the UK and North America and each day, every one of our 110,000 employees works hard to deliver vitally important services for our passengers. During the last year around 2.2 billion passengers relied on us to get to work, to school or college, to visit family and friends, and much more.

**GAMBICA  
Association Ltd**



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GAMBICA Association is the UK trade association for instrumentation, control, automation and laboratory technology. The association seeks to promote the successful development of the industry and assist its member companies through a broad range of services, including technical policy and standards, commercial issues, market data and export services.



*servicing science, profession & society*

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The Geological Society is the national learned and professional body for Earth sciences, with 12,000 Fellows (members) worldwide. The Fellowship encompasses those working in industry, academia and government, with a wide range of perspectives and views on policy-relevant science, and the Society is a leading communicator of this science to government bodies and other non-technical audiences.



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**Advancing knowledge and setting standards in biomedical science**

With over 20,000 members in over 30 countries, the Institute of Biomedical Science is the leading professional body for biomedical scientists, support staff and students.

For over 100 years we have been dedicated to the promotion, development and delivery of excellence in biomedical science within all aspects of healthcare, and providing the highest standards of service to patients and the public. By supporting our members in their practice of biomedical science we set quality standards for the profession through: training, education, assessments, examinations and continuous professional development.



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IFST is the independent qualifying body for food professionals in Europe. Membership is drawn from all over the world from backgrounds including industry, universities, government, research and development and food law enforcement.

IFST's activities focus on disseminating knowledge relating to food science and technology and promoting its application. Another important element of our work is to promote and uphold standards amongst food professionals.



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IKE is the UK's professional body for innovators. It accredits and certifies innovation practices. We influence the inter-relationship between education, business, and government through research and collaborative networks. Our Innovation Manifesto highlights our commitment to support the development of innovative people and organisations. IKE runs think-tanks, conducts research, develops new business models and tools and supports organisations to benchmark their innovation capabilities.

## Institute of Marine Engineering, Science and Technology (IMarEST)



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Established in London in 1889, the IMarEST is a leading international membership body and learned society for marine professionals, with over 15,000 members worldwide. The IMarEST has an extensive marine network of 50 international branches, affiliations with major marine societies around the world, representation on the key marine technical committees and non-governmental status at the International Maritime Organization (IMO) as well as other intergovernmental organisations.

## The Institute of Materials Finishing



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The Institute of Materials Finishing is the premier technical organisation representing industry, academia and individual professionals in both the UK's and global surface engineering and materials finishing sector.

We actively promote continual education and knowledge dissemination by providing both distance learning and tutored training courses, as well as a technical support service. We also provide bespoke courses that are tailored to an employer's specific needs. The Institute also publishes *Transactions of the Institute of Materials Finishing* and a bimonthly newsletter (*IMFormation*), as well as holding regular regional and international technical meetings, symposia and conferences.

## Institute of Measurement and Control



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The Institute of Measurement and Control is a professional engineering institution and learned society dedicated to the science and application of measurement and control technology for the public benefit. The InstMC has a comprehensive range of membership grades for individuals engaged in both technical and non-technical occupations. Also, it is licensed by the Engineering Council to assess and register individuals as Chartered Engineers (CEng), Incorporated Engineers (Eng) and Engineering Technicians (EngTech).

The InstMC works to develop the knowledge and skills of individual engineers, fostering communication and advancing the science and practices within the industry.

## IOP Institute of Physics

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The Institute of Physics is a leading scientific membership society working to advance physics for the benefit of all. We have a worldwide membership from enthusiastic amateurs to those at the top of their fields in academia, business, education and government. Our purpose is to gather, inspire, guide, represent and celebrate all who share a passion for physics. And, in our role as a charity, we're here to ensure that physics delivers on its exceptional potential to benefit society.

Alongside professional support for our members, we engage with policymakers and the public to increase awareness and understanding of the value that physics holds for all of us. Our subsidiary company, IOP Publishing, is a world leader in scientific communications, publishing journals, ebooks, magazines and websites globally.



## Institute of Physics and Engineering in Medicine

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IPEM is a registered, incorporated charity for the advancement, in the public interest, of physics and engineering applied to medicine and biology. Its members are medical physicists, clinical and bio-engineers, and clinical technologists. It organises training and CPD for them, and provides opportunities for the dissemination of knowledge through publications and scientific meetings. IPEM is licensed by the Science Council to award CSci, RSci and RSciTech, and by the Engineering Council to award CEng, IEng and EngTech.



## The Institution of Chemical Engineers

With over 44,000 members in 120 countries, IChemE is the global membership organisation for chemical engineers. A not for profit organisation, we serve the public interest by building and sustaining an active professional community and promoting the development, understanding and application of chemical engineering worldwide.

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## Institution of Civil Engineers



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Established in 1818 and with over 86,000 members in 167 countries worldwide, ICE is a leading source of expertise in infrastructure and engineering policy and is widely seen as the independent voice of infrastructure. ICE provides advice to all political parties and works with industry to ensure that civil engineering and construction remain major contributors to the UK economy.

## Institution of Engineering Designers



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The only professional membership body solely for those working in engineering and product design. Charterships and other professional registrations available for engineers, product designers and environmentalists. Members of the IED include experts on a wide range of all engineering and product design disciplines, all of whom practice, manage or educate in design.



The Institution of Engineering and Technology

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The IET is a world leading professional organisation, sharing and advancing knowledge to promote science, engineering and technology across the world. Dating back to 1871, the IET has over 163,000 members in 127 countries with offices in Europe, North America, and Asia-Pacific.

## Institution of MECHANICAL ENGINEERS

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The Institution provides politicians and civil servants with information, expertise and advice on a diverse range of subjects, focusing on manufacturing, energy, environment, transport and education policy. We regularly publish policy statements and host political briefings and policy events to establish a working relationship between the engineering profession and parliament.



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LGC is an international science-based company and market leader in the provision of analytical, forensic and diagnostic services and reference standards to customers in the public and private sectors.

Under the Government Chemist function, LGC fulfils specific statutory duties as the referee analyst and provides advice for Government and the wider analytical community on the implications of analytical chemistry for matters of policy, standards and regulation. LGC is also the UK's designated National Measurement Institute for chemical and biochemical analysis.

With headquarters in Teddington, South West London, LGC has 36 laboratories and centres across Europe and at sites in China, Brazil, India, South Africa and the US.



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As the world's oldest biological society, the Linnean Society of London is an essential forum and meeting point for those interested in natural history. The Society holds regular public events, publishes three peer-reviewed journals, promotes the study of the natural world with several educational initiatives and is home to a world famous library and collection of natural history specimens. The Society's Fellows have a considerable range of biological expertise that can be harnessed to inform and advise on scientific and public policy issues.

*A Forum for Natural History*



London School of Hygiene & Tropical Medicine

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The London School of Hygiene & Tropical Medicine is a world-leading centre for research and postgraduate education in public and global health, with over 4,000 students and more than 1,000 staff working in over 100 countries across the world. Our depth and breadth of expertise encompasses many disciplines, and we are one of the highest-rated research institutions in the UK.

## L'ORÉAL UK AND IRELAND

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L'Oréal employs more than 3,800 researchers world-wide and dedicates over €850 million each year to research and innovation in the field of healthy skin and hair. The company supports women in science research through the L'Oréal UNESCO For Women In Science Programme and engages young people with science through the L'Oréal Young Scientist Centre at the Royal Institution. L'Oréal also collaborates with a vast number of institutions in the UK and globally.

## Marine Biological Association



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Since 1884 the Marine Biological Association has been delivering its mission 'to promote scientific research into all aspects of life in the sea, including the environment on which it depends, and to disseminate to the public the knowledge gained.' The MBA represents its members in providing a clear independent voice to government on behalf of the marine biological community. It also has an extensive research programme and a long history as an expert provider of advice for the benefit of policy makers and wider society.



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The Met Office doesn't just forecast the weather on television. Our forecasts and warnings protect UK communities and infrastructure from severe weather and environmental hazards every day – they save lives and money. Our Climate Programme delivers evidence to underpin Government policy through the Met Office Hadley Centre. Our Mobile Meteorological Unit supports the Armed Forces around the world. We build capacity overseas in support of international development. All of this built on world-class environmental science.



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The Microbiology Society is the largest learned microbiological society in Europe with a worldwide membership based in universities, industry, hospitals, research institutes and schools. The Society publishes key academic journals, organises international scientific conferences and provides an international forum for communication among microbiologists. The Society promotes the understanding of microbiology to a diverse range of stakeholders, including policy-makers, students, teachers, journalists and the wider public, through a comprehensive framework of communication activities and resources.



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The National Physical Laboratory (NPL) is the United Kingdom's national measurement institute, an internationally respected and independent centre of excellence in research, development and knowledge transfer in measurement and materials science. For more than a century, NPL has developed and maintained the nation's primary measurement standards - the heart of an infrastructure designed to ensure accuracy, consistency and innovation in physical measurement.



Advancing the science of nature

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The University of Northampton is an institution committed to science education through initial teacher training, a STEM Ambassador network which works within the community and teaching and research to doctoral level. We are an Ashoka U 'Changemaker Campus' status university recognising our commitment to social innovation and entrepreneurship.



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With 43,000 students and campuses in Nottingham, China and Malaysia, The University of Nottingham is 'the nearest Britain has to a truly global university'. With more than 97 per cent of research at the University recognised internationally according to the Research Excellence Framework 2014, the University is ranked in the top 1% of the world's universities by the QS World University Rankings.



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The Nutrition Society is a not for profit, membership organisation which is dedicated to delivering its mission of advancing the scientific study of nutrition and its application to the maintenance of human and animal health. Highly regarded by the scientific community, the Society is one of the largest learned societies for nutrition in the world and anyone with a genuine interest in the science of human or animal nutrition can become a member.



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PHARMAQ is the only global pharmaceutical company with a primary focus on aquaculture. Our mission is to provide environmentally sound, safe and efficacious health products to the global aquaculture industry through targeted research and the commitment of dedicated people. We have a product portfolio that includes over 20 fish vaccines along with specialist feed additives, anaesthetics, antibiotics, sea lice treatments and biocide disinfectants. Through our sister company, PHARMAQ Analytiq, we also offer a range of diagnostics services that can be used to help safeguard fish welfare and improve productivity.



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Physiology is the science of how molecules, cells and organs work in the body. Representing over 3500 life scientists, The Physiological Society supports scientific research through its grants schemes, conferences and its three open access journals.

The Society also supports the teaching of physiology in schools and universities, and works to promote an understanding of physiology amongst policy-makers and the general public.



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Prospect is an independent, thriving and forward-looking trade union with 117,000 members across the private and public sectors and a diverse range of occupations. We represent scientists, technologists and other professions in the civil service, research councils and private sector.

Prospect's collective voice champions the interests of the engineering and scientific community to key opinion-formers and policy makers. With negotiating rights with over 300 employers, we seek to secure a better life at work by putting members' pay, conditions and careers first.

## QUADRUM INSTITUTE



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Opening fully in mid-2018, the Quadrum Institute will be an interdisciplinary research centre capitalising on the academic excellence and clinical expertise of the Norwich Research Park. Its mission is to understand how food and the gut microbiota link to the promotion of health and preventing diet and age related diseases. The Quadrum Institute brings together fundamental and translational science with a clinical research facility for human trials and one of Europe's largest gastrointestinal endoscopy units. This will synergise interactions between basic and clinical research, delivering a step change in the understanding of the role of food in health.



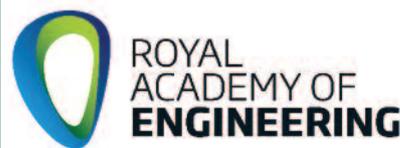
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As the UK's national academy for engineering, we bring together the most successful and talented engineers for a shared purpose: to advance and promote excellence in engineering. We have four strategic challenges: drive faster and more balanced economic growth; foster better education and skills; lead the profession; and promote engineering at the heart of society.



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RBG Kew is a centre of global scientific expertise in plant and fungal diversity, conservation, and sustainable use, housed in two world-class gardens. Our scientific vision is to document and understand global plant and fungal diversity and its uses, bringing authoritative expertise to bear on the critical challenges facing humanity today.

Kew's strategic priorities for science are:

1. To document and conduct research into global plant and fungal diversity and its uses for humanity.
2. To curate and provide data-rich evidence from Kew's unrivalled collections as a global asset for scientific research.
3. To disseminate our scientific knowledge of plants and fungi, maximising its impact in science, education, conservation policy and management.

These priorities enable us to curate, use, enhance, explore and share Kew's global resource, providing robust data and a strong evidence base for our UK and global stakeholders. Kew is a non-departmental government body with exempt charitable status, partially funded by Defra.



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The Royal Institution (Ri) has been at the forefront of public engagement with science for over 200 years and our purpose is to encourage people to think further about the wonders of science. We run public events and the famous CHRISTMAS LECTURES®, a national programme of Masterclasses for young people in mathematics, engineering and computer science, educational activities at the L'Oréal Young Scientist Centre and policy discussions with science students. And through the Ri Channel we share the stories behind cutting-edge science with people around the world.



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The Royal Society is the academy of science in the UK and the Commonwealth comprising 1400 outstanding individuals representing the sciences, engineering and medicine. The Society has played a part in some of the most fundamental, significant and life-changing discoveries in scientific history and Royal Society scientists continue to make outstanding contributions to science across the wide breadth of research areas. Through its Fellowship and permanent staff, it seeks to ensure that its contribution to shaping the future of science in the UK and beyond has a deep and enduring impact, supporting excellence in science and encouraging the development and use of science for the benefit of humanity.



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The Royal Society of Biology is a single unified voice, representing a diverse membership of individuals, learned societies and other organisations. We are committed to ensuring that we provide Government and other policy makers – including funders of biological education and research – with a distinct point of access to authoritative, independent, and evidence-based opinion, representative of the widest range of bioscience disciplines. Our vision is of a world that understands the true value of biology and how it can contribute to improving life for all.



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The Royal Society of Chemistry is the world's leading chemistry community, advancing excellence in the chemical sciences. With over 50,000 members and a knowledge business that spans the globe, we are the UK's professional body for chemical scientists; a not-for-profit organisation with 170 years of history and an international vision of the future. We promote, support and celebrate chemistry. We work to shape the future of the chemical sciences – for the benefit of science and humanity.



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SfAM is a UK organization, serving microbiologists internationally. It works to advance, for the benefit of the public, the science of microbiology in its application to the environment, human and animal health, agriculture, and industry. With Wiley-Blackwell, SfAM publishes five internationally acclaimed journals. Value for money and a modern, innovative and progressive outlook are its core principles. A friendly society, SfAM values integrity, honesty, and respect, and seeks to promote excellence and professionalism and to inspire young microbiologists.

## Society for Underwater Technology



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The SUT is a multidisciplinary learned society that brings together individuals and organisations with a common interest in underwater technology, ocean science, and offshore/subsea engineering. The society was founded in 1966 and has members from over 40 countries, including engineers, scientists, other professionals and students working in these areas.

## Society of Chemical Industry

**SCI**: where science meets business

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Established by Royal Charter in 1881, SCI is a unique multi-disciplinary community. Set up by a prominent group of forward thinking scientists, inventors and entrepreneurs, SCI continues to be a multi-science and industry network based around chemistry and related sciences. Our charitable objective is to promote links between science and industry for the benefit of society. Our passion is invention and creation.

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## Society of Cosmetic Scientists



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Advancing the science of cosmetics is the primary objective of the SCS. Cosmetic science covers a wide range of disciplines from organic and physical chemistry to biology and photo-biology, dermatology, microbiology, physical sciences and psychology.

Members are scientists and the SCS helps them progress their careers and the science of cosmetics ethically and responsibly. Services include publications, educational courses and scientific meetings.



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The Society of Maritime Industries (SMI) is the voice of the UK's maritime engineering and business sector promoting and supporting companies which design, build, refit and modernise ships, and supply equipment and services for all types of commercial and naval ships, ports and terminals infrastructure, offshore oil and gas, maritime security and safety, marine science and technology, maritime autonomous systems and marine renewable energy.



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The **UK Innovation & Science Seed Fund** is a leading patient capital investor with more than £330 million private investment leveraged to date. The Fund works to build technology companies from the earliest stage by working closely with its partners led by STFC, BBSRC, NERC and Dstl, with the National Research and Innovation Campuses they support, and with entrepreneurial science-led teams. UK Innovation & Science Seed Fund is also closely aligned with the Catapults and InnovateUK, helping to commercialise key technological advances in industrial biotech, agricultural technology, healthcare, medicine, clean energy, materials, artificial intelligence, software and space.



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Understanding Animal Research is a not-for-profit organisation that explains why animals are used in medical, veterinary, environmental and other scientific research. We aim to achieve a broad understanding of the humane use of animals in medical, veterinary, scientific and environmental research in the UK. We work closely with policymakers to ensure regulation is effective and are a trusted source of information for the national and international media. We are funded by our members who include universities, professional societies, trade unions, industry and charities.



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Established in 1964, the University of Essex is ranked as one of the Top 20 universities in the Research Excellence Framework and is awarded Gold in the Teaching Excellence Framework. It is home to world-leading expertise in analytics and data science, with research peaks spanning the social sciences, sciences, and humanities. Pioneers of quantitative methods and artificial intelligence techniques, Essex is also in the UK top 10 for Knowledge Transfer Partnerships, and works with businesses to embed innovation into operations, through KTPs, knowledge exchange and contract research.

## Universities Federation for Animal Welfare



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 Wheathampstead, Herts. AL4 8AN.  
 Tel: 01582 831818. Fax: 01582 831414.  
 Email: ufaw@ufaw.org.uk  
 Website: www.ufaw.org.uk  
 Registered in England Charity No: 207996

UFAW, the international animal welfare science society, is an independent scientific and educational charity. It works to improve animal lives by:

- supporting animal welfare research
- educating and raising awareness of welfare issues in the UK and overseas
- producing the quarterly scientific journal Animal Welfare and other high-quality publications on animal care and welfare
- providing advice to government departments and other concerned bodies.



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The Welding Institute is the leading institution providing engineering solutions and knowledge transfer in all aspects of manufacturing, fabrication and whole-life integrity management.

Industrial membership provides access to innovative problem-solving from one of the world's foremost independent research and technology organisations.

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TWI provides Members and stakeholders with authoritative and impartial expert advice, knowhow and safety assurance through engineering, materials and joining technologies.

# SCIENCE DIARY

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[www.scienceinparliament.org.uk](http://www.scienceinparliament.org.uk)  
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### Monday 10 September 2018, 4.30pm Annual General Meeting

Followed by Discussion Meeting, 5.30pm  
Nutritional Challenges for a growing and ageing population

### Tuesday 20 November 2018 Annual Lunch

## ROYAL SOCIETY OF BIOLOGY

10 October 2018  
**Biology Week Reception**  
Churchill Room, House of Commons

3 December 2018  
**Christmas Parliamentary Reception**  
Churchill Room, House of Commons

Please contact Karen Patel and Dr Stephen Benn at [events@rsb.org.uk](mailto:events@rsb.org.uk) for more details.

## THE ROYAL SOCIETY

Details of all events can be found on the events calendar at [events@royalsociety.org](mailto:events@royalsociety.org).  
For scientific meetings queries: [scientific.meetings@royalsociety.org](mailto:scientific.meetings@royalsociety.org)

## THE ROYAL INSTITUTION

Details of all events and booking information can be found at [www.rigb.org/whats-on](http://www.rigb.org/whats-on).

## PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY

POST organises events that connect Parliamentarians to leading experts from the research community and other sectors, including government, the third sector and business on a range of topics.

Details can be found at: [www.parliament.uk/mps-lords-and-offices/offices/bicameral/post/post-events/](http://www.parliament.uk/mps-lords-and-offices/offices/bicameral/post/post-events/)



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