



Royal Academy
of Engineering

Annex to the Annual Review 2019 | 2020



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Fellows elected in 2019

Fellows of the Academy are leading engineers in the UK drawn from academia, industry and the not-for-profit sectors. Fellowship is a national honour, awarded for outstanding personal engineering achievements. Election to the Fellowship is managed by current Fellows of the Academy.

International Fellows

Elected in 2019 were:

Professor Shuji Nakamura FEng
Professor of Materials and Electrical and Computer Engineering and The Cree Distinguished Professor in Solid State Lighting and Displays, University of California, Santa Barbara

Professor Jeom Kee Paik FEng
Professor of Safety Design and Engineering at Naval Architecture and Ocean Engineering Department, Pusan National University; Distinguished Professor of Marine Technology, University College London

Professor Chai Keong Toh FEng
Expert Consultant, Gerson Lehrman Group, California, US

Professor Jianping Wu FEng
Professor and Head of the Department of Computer Science, Tsinghua University, China

Honorary Fellow

Elected in 2019 was:

Lewis Hamilton MBE HonFEng
Formula One Racing Driver, Mercedes-AMG Petronas Motorsport

Fellows

Elected in 2019 were:

Dr Ian Barkshire FEng
Chief Executive, Oxford Instruments plc

Professor Martin Blunt FEng
Professor of Petroleum Engineering, Imperial College London

Professor Peter Childs FEng
Head of the Dyson School of Design Engineering, Imperial College London

Professor Alan Cocks FEng
Statutory Professor of Materials Engineering, University of Oxford

Professor Byron Cook FEng
Director of Automated Reasoning, Amazon Web Services (AWS); Professor of Computer Science, University College London

Professor Jonathan Cooper FEng
RAEng Airbus Sir George White Chair of Aerospace Engineering, University of Bristol

Professor Constantin Coussios FEng
Director of the Institute of Biomedical Engineering, University of Oxford; Co-Founder, OrganOx, OxSonic and OrthoSon

Shirin Dehghan FEng
Operating Partner, Frog Capital; Chair, Opensignal

Philip Dunford FEng
Consultant Aerospace Engineer, Piasecki Aircraft Corporation

Professor Bridget Eickhoff FEng
Principal Infrastructure Engineer, Rail Safety and Standards Board

John Eldridge FEng
Consulting Engineer, URENCO

Professor Brian Ellison FEng
STFC Senior Fellow and Head of the Millimetre-Wave Technology and Chilbolton Radio Group, STFC RAL Space

Mark Fletcher FEng
Global Water Business Leader, Arup

Dr Luisa Freitas dos Santos FEng
VP Global Clinical Supply Chain (R&D), GSK

Professor Alice Gast FEng
President, Imperial College London

Professor Harald Haas FEng FRSE
Professor of Mobile Communications, University of Edinburgh

Christopher Hamlin FEng
Director, Operational Certainty Consulting, Emerson Automation Solutions

Professor Gareth Hankins FEng
Director and Executive Board member, Renishaw plc

Professor Kelvin Higgins FEng
Senior Partner, Geotechnical Consulting Group LLP

Professor Adrian Hilton FEng
Director of the Centre for Vision, Speech and Signal Processing, University of Surrey

Dr Gareth Hinds FEng

Fellow, National Physical Laboratory

Graham Hughes FEng

Head of Product Assurance, AWE

Professor Peter Ireland FEng

Donald Schultz Professor of Turbomachinery, University of Oxford

Professor Simon Iwnicki FEng

Professor of Railway Engineering and Director of the Institute for Railway Research, University of Huddersfield

Professor Jian Kang FEng

Professor of Acoustics, University College London

Professor Rebecca Lingwood FEng

Provost and Professor of Fluid Dynamics, Brunel University London

Professor Andrew Long FEng

Provost and Deputy Vice-Chancellor, University of Nottingham

David Lovett FEng

Managing Director, Perceptive Engineering Ltd

Professor G Q Max Lu AO DL FEng

President and Vice-Chancellor, University of Surrey

Professor Graham Machin FEng

Fellow, National Physical Laboratory

Dr Catherine McClay FEng

Head of Future Markets, National Grid Electricity System Operator

Professor Vladimir Nikora FEng

Professor and Sixth Century Chair in Environmental Fluid Mechanics, University of Aberdeen

Richard Oldfield FEng

Chief Executive, National Composites Centre

Tony O'Neill FEng

Group Technical Director, Anglo American

Professor Máire O'Neill FEng

Professor of Information Security, Queen's University Belfast

Professor Maja Pantic FEng

Professor of Affective and Behavioural Computing, Imperial College London; Research Director, Samsung Artificial Intelligence Research Centre, Cambridge

Professor Stuart Parkin FEng FRS

Director, Max Planck Institute of Microstructure Physics

Dr Fiona Rayment OBE FEng

Executive Director, NIRO, National Nuclear Laboratory

Professor Kevin Roberts FEng

Brotherton Professor of Chemical Engineering, University of Leeds

Leigh-Ann Russell FEng

Head of Procurement and Supply Change Management, BP

Ronald Scott FEng

Director, Metaltech Ltd

Dr Mark Selby FEng

Chief Technology Officer, Ceres Power Ltd

Professor Dimitra Simeonidou FEng

Chair Professor of High Performance Networks, University of Bristol

Rachel Skinner FEng

Executive Director and UK Head of Transport, WSP

Philip Smith CBE FEng

Chairman, IQE PLC

Lila Tachtsi FEng

Asset Management Director, Highways England

Professor Philip Torr FEng

FiveAI/ Royal Academy of Engineering Research Chair in Computer Vision, University of Oxford

William Tunstall-Pedoe FEng

Angel investor, Cambridge Angels; Advisor, Ada Health

Professor Dracos Vassalos FEng

Professor of Maritime Safety, University of Strathclyde and Chairman of Maritime Safety Innovations Ltd

Professor Wen Wang FEng

Professor of Biomedical Engineering, Vice-Principal and Executive Dean for Science and Engineering, Queen Mary University of London

Trustee Board

The Trustee Board comprises 12 Trustees elected by and from the Fellowship and is chaired by the President, Professor Sir Jim McDonald FREng FRSE.

Officers and members of the council

Trustee Board

President

Professor Sir Jim McDonald FREng FRSE

Vice-Presidents

Naomi Climer CBE FREng

Vice-President for Fellowship Engagement

Professor Iain Gray CBE FREng FRSE

Vice-President for Committee Coordination

Members

Sir Simon Bollom KBE CB FREng

Dr Martin Grant FREng

Dame Judith Hackitt DBE FREng

Professor Peter Goodhew CBE FREng

Professor John Loughhead CB OBE FREng

Professor Geoffrey Maitland CBE FREng

Professor Liz Tanner OBE FREng FRSE

Professor Jeremy Watson CBE FREng

Professor Stephen Williamson FREng

Professor Stephen Young FREng

Chief Executive

Dr Hayaatun Sillem CBE

Academy Governance Committees

Audit and risk committee

The purpose of the Audit and Risk Committee is to assess and improve risk management and internal processes and controls across the Academy and oversee the external audit on behalf of the Trustee Board.

Chair

Professor Geoffrey Maitland CBE FREng

Members

Ginny Clarke CBE FREng

Professor Iain Gray CBE FREng FRSE

Andrew McNaughton FREng

Professor Jim Norton OBE FREng

Catriona Schmolke FREng

Finance committee

The Finance Committee is responsible for and accountable to the Trustee Board for the financial management of the Academy including compliance with the Charities Act 2011 and other relevant legislation, management of Academy budgets, external investment fund managers and compliance with external financial reporting standards.

Chair

Professor Stephen Young FREng

Members

Naomi Climer CBE FREng

Graeme Hobbs FREng

Dr David Hughes FREng

Dr Liane Smith FREng

Membership committee

The Membership Committee is the guardian of excellence in determining which candidates may go forward for election to the Fellowship. The Membership Committee consists of a Chair, Chairs of each of the Membership Selection Panels, and the Chair of the International Committee. Each of the 11 membership selection panels looks after a sector of engineering.

Chair

Dr Martin Grant FREng

Ex Officio

Professor Sir Jim McDonald FREng FRSE

Panel Chairs

Panel 1

Dr Steve Denton FREng

Panel 2

Professor Eileen Harkin-Jones OBE FREng

Panel 3

Professor Nilay Shah FREng

Panel 4

Dr Roger Digby FREng

Panel 5

Professor Paul Shayler FREng

Panel 6

Lianne Deeming FREng

Panel 7

Professor Sarah Spurgeon OBE FREng

Panel 8

Ed Daniels FREng

Panel 9

Professor Anthony Bull FREng

Panel 10

Dr Andrew Fitzgibbon FREng

Panel 11

Steve Dearden FREng

Panel Members

Panel 1 – Civil and environmental

Jeremy Benn FREng
 Dr Keith Bowers FREng
 Tim Chapman FREng
 Professor René de Borst FREng
 Chris Dulake FREng
 Professor Ahmed Elghazouli FREng
 Keith Howells FREng
 Martin Knights FREng
 Dr Barbara Lane FREng
 Professor Rebecca Lunn MBE
 FREng FRSE
 Professor Simon Pollard FREng
 Dr Mark Raiss FREng
 Dr Sarah Williamson FREng

Panel 2 – Materials and mining

Dr Tony Batchelor FREng
 Professor Andrew Bell FREng
 Mark Cutifani FREng
 Professor Judith Driscoll FREng
 Professor Sarah Hainsworth OBE
 FREng
 Dr Chris Haynes OBE FREng
 Professor Robert Pine FREng
 Professor Mark Rainforth FREng
 Professor Roger Reed FREng
 Catriona Schmolke FREng
 Professor Robert Wood FREng

Panel 3 – Chemicals and process

Dr Mark Buswell FREng
 Joan Cordiner FREng
 Professor Peter Fryer FREng
 Professor Mojtaba Ghadiri FREng
 Professor Gary Lye FREng
 Professor Ian Metcalfe FREng
 Professor Hugh Stitt FREng
 Patrick Thomas FREng

Panel 4 – Aerospace

Professor Guglielmo Aglietti FREng
 Professor Christopher Atkin FREng
 Gavin Campbell FREng
 Professor Tony Gillespie FREng
 Air Marshall Susan Gray CB OBE
 FREng
 Professor Colin McInnes MBE FREng
 Alan Newby FREng
 Dr Ian Ritchey FREng
 Professor Spencer Sherwin FREng

Panel 5 – Transport and mechanical

Professor Robert Dwyer Joyce
 FREng
 Tony Harper FREng
 Dr Graham Hoare FREng
 Professor David Hutchins FREng
 Professor Neville Jackson FREng
 Professor Bill Jones FREng
 Professor Robin Langley FREng
 Muir Macdonald FREng
 Professor Ricardo Martinez-Botas
 FREng
 Professor Roderick Muttram FREng
 Professor Anne Neville FREng FRS
 FRSE
 Professor Roderick Smith FREng
 Richard Vie FREng

Panel 6 – Manufacturing and design

Richard Barber FREng
 Professor Sri Hinduja FREng
 Rachel Hurst FREng
 Professor Ian Hutchings FREng
 Professor Joseph McGeough FREng
 FRSE
 Brian Palmer FREng
 Professor Ken Young FREng
 Professor Graham Wren OBE FREng

Panel 7 – Electrical and electronic

Dr Michael Begg FREng
 Dr Andy Carter FREng
 Professor David Cumming FREng
 FRSE
 Professor Giles Davies FREng
 Professor Barry Lennox FREng
 Professor Graeme Malcolm OBE
 FREng FRSE
 Dr Pavel Matousek FREng
 Dr Ed Morton FREng
 Professor Bucur Novac FREng
 Professor Robert Parkin FREng
 Professor Graham Reed FREng
 Rakesh Sharma OBE FREng
 Professor Sarah Spurgeon OBE
 FREng
 Professor Zi-Qiang Zhu FREng

Panel 8 – Energy and power

Professor Julian Allwood FREng
 Jane Atkinson FREng
 Andrew Carlick FREng
 Professor Richard Clegg FREng
 Ed Daniels FREng
 Dr Andrew Garrad CBE FREng

Professor Tim Green FREng
 Professor Rod Rainey FREng
 Professor Ian Smith FREng
 Dr Richard Yemm FREng
 Professor Anton Ziolkowski FREng
 FRSE

Panel 9 – Medical and bioengineering

Professor Anthony Bull FREng
 Professor David Jones FREng
 Professor Rod Smallwood FREng
 Professor Christopher Taylor OBE
 FREng
 Mike Tuke FREng
 Professor David Williams OBE
 FREng
 Professor Rachel Williams FREng
 Professor Sir Saeed Zahedi OBE RDI
 FREng

Panel 10 – Computing and communications

Professor Darwin Caldwell FREng
 Professor Mike Davies FREng
 Professor Andrew Davison FREng
 Professor Mischa Dohler FREng
 Trevor Gill FREng
 Professor Ursula Martin CBE FREng
 FRSE
 Professor Joseph McGeehan FREng
 Professor Asoke Nandi FREng
 Professor Jim Norton OBE FREng
 Dr Phil O'Donovan FREng
 Professor Peter O'Hearn FREng FRS
 Professor Stephen Roberts FREng
 Professor Daniel Rueckert FREng
 Professor Anne Trefethen FREng
 Dr Eben Upton CBE FREng
 Professor Jiangzhou Wang FREng
 Dr Andrew Ward FREng
 Professor Paul Watson FREng

Panel 11 – Special

Professor Muffy Calder OBE FREng
 FRSE
 Graham Dalton FREng
 Steven Dearden FREng
 Dr Niel Kempson CB FREng
 Jonathan Lyle CB FREng
 Colin Mathews FREng
 Dr Paul Miller FREng
 Alasdair Stirling FREng
 Dr Peter Thompson FREng
 Professor Terry Wilkins FREng
 Professor John Wood FREng

Nominations Committee

The purpose of the Nominations Committee is to ensure that a sufficient number of Fellows stand as candidates in the annual Trustee election and that the candidates bring to the Trustee Board skills, knowledge, experience and diversity that would yield, among the ordinary members and vice-presidents, a balanced Board. The Committee will recommend to the Board candidates for appointment as vice-presidents and candidates for appointment as chairs of the Academy's committees. The Committee is also to recommend to the Trustees, and ultimately the Fellowship, the Academy's President from nominations submitted by the Fellowship.

Chair

**Professor Sir Jim McDonald FEng
FRSE**

Members

**Professor Colin Bailey CBE FEng
Dr Alan Begg FEng
Naomi Climer CBE FEng
Dr Andrew Harter CBE FEng
Professor Asoke Nandi FEng
Dr Dame Frances Saunders DBE CB
FEng
Dr Liane Smith FEng**

Remuneration Committee

The purpose of the Remuneration Committee is to establish and keep under review the remuneration policy for permanent Academy staff, which will be implemented by the Chief Executive; to consider the recommendation of the Chief Executive for remuneration of the Academy Directors and agree their remuneration; and to set the remuneration of the Chief Executive.

Chair

**Professor Sir Jim McDonald FEng
FRSE**

Finance Committee Chair

Professor Stephen Young FEng

Members

**Naomi Climer CBE FEng
Professor Iain Gray CBE FEng**

Academy Operating Committees

Awards Committee

The role of the Awards Committee is to identify and recommend to the President and Trustee Board appropriate candidates for all of the Academy's relevant prizes and awards (with the exception of National Honours, the International Medal, the Queen Elizabeth Prize for Engineering and the MacRobert Award).

Chair

Professor Raffaella Ocone OBE
FEng FRSE

Members

Dr Alan Belfield FEng
Professor Mojtaba Ghadiri FEng
Tony Graham FEng
Professor Yike Guo FEng
Professor David Johnson FEng
Dr Raouf Kattan FEng
Professor Andrew Lewis FEng
Alan Newby FEng
Professor Graham Reed FEng
Dr Richard Taylor FEng
Dr John Tubman FEng
Jane Wernick CBE FEng

Diversity and Inclusion Committee

The purpose of this Committee is to advise and have oversight of the all Diversity and Inclusion Programme strands of work including that with employers, professional engineering institutions and within the Academy itself. The Committee Chair will present an annual report to the Academy's Trustee Board summarising internal and external activities and recommendations for action.

Chair

Professor Sarah Hainsworth OBE
FEng

Members

Fawaz Bitar FEng
Mark Carne CBE FEng
Steven Dearden FEng
Dr Carolyn Griffiths FEng
Professor David Jones FEng
Jonathan Lyle CB FEng
Dr Ian Ritchey FEng
Professor Nilay Shah FEng
Professor Paul Watson FEng
Dr Sarah Williamson FEng

Members (non-Fellow)

Paul Bailey
Elsbeth Finch MBE
Enterprise Hub mentor
Dr Nike Folyan MBE
Chair, Association for Black and Minority Ethnic Engineers
Professor Paul Hardaker
Chair, Progression Framework Implementation Group
Dr Mark McBride-Wright
Chair and Founder, InterEngineering

Education and skills Committee

The Education and Skills Committee's role is to oversee and be responsible for the Academy's activities in engineering education and training, and to maintain links with other bodies working in these fields.

Chair

Professor Jonathan Seville FEng

Members

Nick Cooper FEng
Dr Graham Farnell FEng
Professor David Howard FEng
Professor Tim Ibell FEng
Muir Macdonald FEng
Professor John Perkins CBE FEng
Professor Richard Prager FEng
Professor Mary Ryan FEng
Professor Rachel Thomson FEng
Professor Ken Young FEng

Ex-officio

Tim Chapman FEng
Dr Mike Cook FEng
Howard Mathers CBE FEng
David Scott FEng FRSE

Observers

Beth Elgood
EngineeringUK
Warwick Hall
National Federation of Engineering Centres
Katy Turff
Engineering Council
Johnny Rich
Engineering Professors Council
Professor Colin Turner

Engineering Policy Centre Committee

The Engineering Policy Centre Committee's role is to advise and be responsible to the Trustee Board for the National Engineering Policy Centre, providing oversight of the Centre's aims, priorities and high-level programme of work. It should identify, monitor and promote attention to emerging and generic issues of importance to engineering in pursuit of this role.

Chair

Professor Jeremy Watson CBE FREng

Members

Mandy Chessell CBE FREng
Graham Dalton FREng
Dr Steve Denton FREng
Professor John Fisher CBE FREng FMedSci
Professor Nick Jennings CB FREng
Professor Rebecca Lunn MBE FREng FRSE
John MacArthur FREng
Nigel Perry MBE FREng
Professor Tom Rodden FREng
Professor Nilay Shah FREng
Paul Taylor FREng
Faith Wainwright MBE FREng
David Wright FREng

Ex Officio

Professor David Delpy CBE FREng FRS FMedSci

Enterprise Committee

The role of the Enterprise Committee is to provide strategic oversight and leadership of the Academy's Enterprise Hub, on behalf of the Trustee Board. The Committee oversees the development and operation of the Enterprise Hub, and supports and promotes its activities, which includes developing appropriate partnerships and funding relationships. It ensures the quality and rigour of the assessment process and selection of awards for the Academy's UK-based enterprise schemes.

Chair

Dr David Clevely CBE FREng

Members

Professor Norman Apsley OBE FREng
Professor Steven Beaumont OBE FREng FRSE
Professor Richard Brook OBE FREng
Mike Carr OBE FREng
Anne Glover CBE HonFREng
Professor Iain Gray CBE FREng FRSE
Dr Andy Harter CBE FREng
Dr Hermann Hauser KBE FREng FRS
John Leggate CBE FREng
Chris Mairs FREng
Professor Alison Noble OBE FREng
Sir John O'Reilly FREng FLSW
Dr Robert Sansom FREng
Dr Dick Whittington FREng
Professor Eric Yeatman FREng

Non-Fellow Members

Maria Dramalioti-Taylor
Dr Ruth McKernan CBE

External Affairs Committee

The role of the Committee is to provide strategic direction for external affairs activities on behalf of the Trustee Board. It oversees all aspects of the Academy's communications, public affairs and engagement activities and events programme, ensuring they are delivered in line with Royal Charter and business plan commitments.

Chair

Professor Mark Miodownik MBE FREng

Members (Fellows)

Professor Claire Adjiman FREng
Professor Mischa Dohler FREng
Professor Dame Pratibha Gai DBE FREng FRS
Professor David Howard FREng
Peter Lomas FREng

Non-Fellow Members

Rosa Wilkinson
Greg Foot
Clive Cookson

Ex-officio Members

Dr Scott Steedman CBE FREng
Editor-in-Chief of Ingenia
Professor Anthony Finkelstein CBE FREng
Chair of Ingenious panel

International Committee

The role of International Committee is to advise and be responsible to the Trustee Board for promoting the international interests of the Academy. In pursuit of this role, the Committee's interests include the Academy's membership of the International Council of Academies of Engineering and Technological Sciences (CAETS) and the European Council of Applied Sciences and Engineering (Euro-CASE).

The Committee also contributes to other international committees and study groups as appropriate, and works to expand relationships with other academies of engineering and technological sciences, taking part in their activities where this is consistent with the Academy's objectives.

The Committee oversees and the Academy's Global Challenges Research Fund and Newton Fund activities.

Chair

David Thomlinson FEng

Members

Jane Buglear FEng
Professor Judith Driscoll FEng
Professor Tariq Durrani FEng FRSE
David Eyton CBE FEng
Dr Allyson Lawless FEng
Dr John Lazar CBE FEng
Professor Ric Parker CBE FEng
Professor William Powrie FEng
Dr Mike Short CBE FEng
Professor Ravi Silva FEng
Dr Jean Venables CBE FEng
Professor Rachel Williams FEng
Professor Zhibing Zhang FEng

Non-Fellow Member

Professor Barbara Evans

Ex-officio

Professor David Bogle FEng

Research Committee

The purpose of the Research Committee is, on behalf of the Trustee Board, to provide strategic oversight and leadership of the Academy's UK-based research programmes and research policy activity.

Chair

Professor Karen Holford CBE FEng FLSW

Members

Professor Alicia El Haj FEng
Professor Maire O'Neill FEng
Professor Mark Sandler FEng
Professor Tom Stephenson FEng
Dr Dame Angela Strank DBE FEng FRS
Professor Anne Trefethen FEng
Professor Robert Wood FEng
Professor Hua Zhao FEng

Ex-officio

Dr Alan Begg FEng
Industrial Advisory Group
Professor Phil Nelson CBE FEng
Research Fellowships
Professor Jeff Magee FEng
Research Chairs / Senior Research Fellowships
Professor Stephen McLaughlin FEng FRSE
Leverhulme Trust
Dr Dame Frances Saunders DBE CB FEng
Chairs in Emerging Technologies
Professor Allan Jones FEng
Industrial Fellowships

MacRobert Committee

The purpose of the MacRobert Committee is to identify and choose appropriate finalists and winners of the Royal Academy of Engineering's MacRobert Award for UK innovation in engineering. The MacRobert Award, first presented in 1969, is the UK's longest-running and most prestigious national prize for engineering innovation. It honours the winning organisation with a gold medal, and the team members a cash prize of £50,000. The presentation of the award recognises outstanding innovation, tangible societal benefit and proven commercial success.

Chair

Professor Sir Richard Friend FEng FRS

Members

Naomi Climer CBE FEng
Professor Nick Jennings CB FEng
Professor Gordon Masterton OBE DL FEng FRSE
Professor Sir John McCanny CBE FEng FRS
Professor Phil Nelson CBE FEng
Professor Ric Parker CBE FEng
Dr Liane Smith FEng
Professor Sir Saeed Zahedi OBE RDI FEng

Awards 2019

MacRobert Award

The MacRobert Award is the premier award for innovation in UK engineering. Originally founded by the MacRobert Trust, and celebrated its 50th anniversary year in 2019. It comprises a gold medal and a prize of £50,000. The MacRobert Award is awarded annually from a shortlist of three finalists. The award is given for excellence in UK engineering that has reached a stage where the levels of both commercial success and benefit to society are clear.

2019 winner: Bombardier for developing an innovative, resin-infused advanced composite wing.

President's Medal

Awarded to an Academy Fellow who has greatly contributed to the Academy's work and aims.

2019 winner: Professor Richard Williams OBE FEng FRSE FTSE, Principal and Vice-Chancellor, Heriot-Watt University.

Prince Philip Medal

Awarded biennially to an engineer of any nationality who has made an exceptional contribution to engineering through practice, management or education.

Silver Medals

Awarded to an early- to mid-career engineer for outstanding personal contribution to UK engineering resulting in market exploitation. Up to four medals may be awarded in any one year.

2019 winners:

Dr Daniel Elford, CTO, Sonobex
Jennifer Griffiths MBE, Founder and CEO, Snaptech
Professor Paul Newman FEng, Founder and CTO, Oxbotica

Sir Frank Whittle Medal

Awarded to an engineer for outstanding and sustained achievement in any engineering discipline.

2019 winner: Robert Benaim FEng

RAEng Engineers Trust Young Engineers of the Year

Recognises the potential of younger UK engineers, who have demonstrated excellence in the early stage of their career.

2019 winners:

Dr Áine Ní Bhreasail, Senior Engineer, ARUP
Dr Giorgia Longobardi, Founder and CEO, Cambridge GaN Devices Ltd
Dr Mariia Sorokina, Research Fellow, Royal Academy of Engineering
Rosie Goldrick, Engineering Director, MASS Design Group
Sophie Harker, Senior Aerodynamicist, BAE Systems

Sir George Macfarlane Medal

Awarded to the overall winner of the RAEng Engineers Trust Young Engineer of the Year.

2019 winner: Rosie Goldrick

Colin Campbell Mitchell Award

Awarded to an engineer or small team of engineers who have made an outstanding contribution to the advancement of any field of UK engineering.

2019 winner: A team from the University of Nottingham, Monica Healthcare and GE Healthcare for the Monica Novii™ Wireless Patch System.

Major Project Award

Awarded to a team that has played a critical role in a major engineering project that has had substantial impact on society in any branch of engineering.

2019 winner: Shah Deniz 2 project, BP

Rooke Award

Awarded to an individual, small team or project that has contributed to the Academy's aims and work through their initiative in promoting engineering to the public.

2019 winner: Major Tim Peake

RAEng Armourers and Brasiers Company Prize

Awarded biennially to an individual, for excellence in materials engineering.

2019 winner: Professor Serena Best
CBE FEng

Grants, fellowships and programmes

Research Chairs

The Research Chairs programme provides funding, together with industry and other research organisations, to support strategically important research in UK universities. The Academy provides funding for an initial period of five years.

| Name | Co-sponsor | Subject | University |
|---------------------------------------|-----------------------------|--|----------------------------|
| Professor Guglielmo Aglietti FREng | Surrey Satellite Technology | Space engineering | University of Surrey |
| Professor John Andrews | Network Rail | Infrastructure asset management | University of Nottingham |
| Professor Ashraf Ayoub | Pell Frischmann | Nuclear infrastructure engineering | City, University of London |
| Professor Robert Bowman | Seagate Technology | Advanced materials for data storage | Queen's University Belfast |
| Professor Christoph Breucker | BAE Systems | Aeronautical engineering | City, University of London |
| Professor Richard Butler | GKN Aerospace | Composites analysis | University of Bath |
| Professor Byron Byrne | Ørsted | Advanced geotechnical design | University of Oxford |
| Professor Joao Cabral | Procter & Gamble | Soft Matter Microflow Engineering | Imperial College London |
| Professor Jon Carrotte | Rolls-Royce | Aerothermal technology | Loughborough University |
| Professor Adam Clare | Rolls-Royce | Miniaturisation of Electrophysical Techniques for Next Generation On Wing Repair | University of Nottingham |
| Dr Jacqueline Cole | BASF | Data-driven molecular engineering of functional materials | University of Cambridge |
| Professor George Constantinides | Imagination Technologies | Digital computation | Imperial College London |
| Professor Jonathan Cooper | Airbus | Aeronautical engineering | University of Bristol |
| Professor Claire Davis | Tata Steel | Low energy steel processing | University of Warwick |
| Professor Andrew Davison FREng | Dyson | Efficient vision for robotics | Imperial College London |
| Professor Hongbiao Dong | TWI Ltd | Innovative metal processing | University of Leicester |
| Professor Fionn Dunne FREng | Rolls-Royce | Integrative mechanistic design | Imperial College London |
| Professor Amparo Galindo | Lilly | Pharmaceutical molecular systems | Imperial College London |

| Name | Co-sponsor | Subject | University |
|--|---------------------------------|---|----------------------------|
| Professor Mark Girolami | Lloyd's Register Foundation | Data centric engineering | University of Cambridge |
| Professor Kenneth Grattan OBE FREng | George Daniels Trust | Next generation optical and fibre-optic instrumentation | City, University of London |
| Professor Matthew Hall | British Geological Survey | Carbon capture, storage and alternative hydrocarbons | University of Nottingham |
| Professor Eileen Harkin-Jones OBE FREng | Bombardier | Composites engineering | Ulster University |
| Professor Dame Xiangqian (Jane) Jiang DBE FREng | Renishaw | Precision metrology | University of Huddersfield |
| Professor Roy Kalawsky | Airbus | Digital and data engineering information systems | Loughborough University |
| Professor Nikil Kapur | GSK | Pharmaceutical processing | University of Leeds |
| Professor Ian Kinloch | Morgan Advanced Materials | Carbon materials | University of Manchester |
| Professor Roger Lewis | Rail Safety and Standards Board | Wheel/rail interface low adhesion management | University of Sheffield |
| Professor Jianguo Lin FREng | Tata Steel | Multidisciplinary studies of hot stamping | Imperial College London |
| Professor Mikel Lujan | ARM | Low power IoT and edge computing: taming heterogenous system-on-chip | University of Manchester |
| Professor Rebecca Lunn MBE FREng FRSE | BAM Nuttall | Biomineral technologies for ground engineering | University of Strathclyde |
| Professor Omar Matar | Petronas | Multiphase fluid dynamics | Imperial College London |
| Professor Bruno Merk | National Nuclear Laboratory | Computational modelling for nuclear engineering | University of Liverpool |
| Professor Stephen Muggleton FREng | Syngenta | Applications of automated theory-formation using meta-interpretive machine learning | Imperial College London |
| Professor Chris Pearce | EDF Energy | Computational mechanics for nuclear power engineering | University of Glasgow |
| Professor Stephen Pierce | Spirit Aerosystems | In-process non-destructive testing for composites | University of Strathclyde |
| Professor Kypros Pilakoutas | Twintec Nederland BV | Innovative and sustainable fibre reinforced concrete | University of Sheffield |
| Professor Philip Prangnell | Airbus | Metallurgical excellence | University of Manchester |
| Professor Pedro Rivera-Diaz-del-Castillo | LPW | Alloy and microstructure design for additive layer manufacturing | Lancaster University |

| Name | Co-sponsor | Subject | University |
|------------------------------------|---|--|----------------------------|
| Professor Stephen Roberts FREng | MAN Group Plc | Machine learning at industrial and commercial scale | University of Oxford |
| Professor Stuart Robson | Airbus | Large Volume Metrology | University College London |
| Professor Mary Ryan FREng | Shell | Interfacial nanoscience of engineering materials | Imperial College London |
| Professor Vladimiro Sassone | Roke | Cyber security | University of Southampton |
| Professor Sven Schroeder | Infineum UK | Engineering applications of synchrontron science | University of Leeds |
| Professor Thomas Scott | AWE | Actinide metallurgy | University of Bristol |
| Professor Cindy Smith | Scottish Water | Biofiltration by biological design | University of Glasgow |
| Professor Tong Sun OBE | Faiveley Brecknell Willis | Smart railway electrification: evolvable from contact to contactless | City, University of London |
| Professor Ashutosh Tiwari | Airbus | Digitisation for zero-setup and zero-measurement manufacturing | University of Sheffield |
| Professor Iain Todd | GKN Aerospace | Additive manufacture and advanced structural metallics | University of Sheffield |
| Professor Philip Torr | Five AI | Computer vision | University of Oxford |
| Professor Andrew Tyas | Defence Science and Technology Laboratory | Protection engineering against high explosive blast | University of Sheffield |
| Professor Tom Vercauteren | Medtronic | Machine learning for computer-assisted neurosurgery | King's College London |
| Professor Phillip Webb | Airbus | Aero-structures design | Cranfield University |
| Professor Jennifer Whyte | Laing O'Rourke | Systems integration | Imperial College London |
| Professor Sophie Williams | DePuy Synthes | Hip replacement technology | University of Leeds |
| Professor Ping Xiao | Rolls-Royce | Advanced coating technology | University of Manchester |
| Dr Xibo Yuan | Safran Electrical & Power UK | Advanced aircraft power generation systems | University of Bristol |
| Professor Michalis Zervas | SPI Lasers | Advanced fibre laser technologies for future manufacturing | University of Southampton |
| Professor Zi-Qiang Zhu FREng | Siemens Wind Energy | High efficiency and power density wind-power generator systems | University of Sheffield |

Chairs in Emerging Technologies

The Chairs in Emerging Technologies scheme provides long-term support of up to 10 years to global research visionaries to lead on developing emerging technology areas with high potential to deliver economic and social benefit to the UK.

| Name | Subject | University |
|--|---|---------------------------|
| Professor Ana Cavalcanti | Software engineering for robotics: modelling, validation, simulation, and testing | University of York |
| Professor Yiannis Demiris | Personal assistive robots | Imperial College London |
| Professor Timothy Denison | Brain engineering: towards closed-loop, non-invasive bioelectronic therapies for neurological disorders | University of Oxford |
| Professor Ricahard Dinsdale | Bio-electrochemical process engineering for carbon reduction and resource recovery: E-Hance | University of South Wales |
| Professor Judith Driscoll FREng | Scaleable ultralow power memory through materials innovation | University of Cambridge |
| Professor Daniele Faccio | Artificial intelligence and quantum-inspired imaging | University of Glasgow |
| Professor Michael Fisher | Responsible autonomous systems | University of Liverpool |
| Professor Alejandro Frangi | Computational precision medicine for in silico trials of medical devices | University of Leeds |
| Professor Brian Gerardot | Integrated two-dimensional classical and quantum photonics | Heriot-Watt University |
| Professor Susan Gourvenec | Intelligent and resilient ocean engineering | University of Southampton |
| Professor Natalio Krasnogor | Engineering data structures organoids (EnDROIDS) | Newcastle University |
| Professor Peter Lee | Transforming additive manufacturing via multiscale in-situ imaging (TAMMI) | University College London |
| Professor Barry Lennox FREng | Transforming operations in the nuclear industry using robotics | University of Manchester |
| Professor Alessio Lomuscio | Trusted learning-based autonomous and robotic systems | Imperial College London |
| Professor Keith Mathieson | Neural interfaces for the understanding and treatment of neurodegenerative conditions | University of Strathclyde |
| Professor Colin McInnes MBE FREng FRSE | Emerging space technologies | University of Glasgow |
| Professor Ian Saxley Metcalfe FREng | Engineering chemical reactor technologies for a low-carbon energy future | Newcastle University |
| Professor Alessandro Olivo | Micro-radian x-ray scattering: transformative technology for industrial and medical diagnostics | University College London |
| Professor Themis Prodromakis | Memristive technologies for lifelong learning embedded AI hardware (AI MeTLLE) | University of Southampton |
| Professor Jason Reese FREng FRSE | PYRAMID: a platform for multiscale design, from molecules to machines | University of Edinburgh |
| Professor Susan Rosser | Engineered cells for combined diagnostics and therapeutics (theranostics) | University of Edinburgh |

| Name | Subject | University |
|------------------------------|---|---------------------------|
| Professor Jonathan Rossiter | Smart materials and mechanisms for ubiquitous soft robotics | University of Bristol |
| Professor Paul Shearing | Emerging battery technologies for next generation energy storage | University College London |
| Professor Guy-Bart Stan | Accelerating engineering biology: efficient engineering of reliable and high-performance biosystems | Imperial College London |
| Professor Danail Stoyanov | Robotic actuated imaging skins | University College London |
| Professor Sriram Subramanian | Interactive technologies using metamaterials | University of Sussex |
| Professor Magda Titirici | Sustainable energy materials for emerging technologies | Imperial College London |

Senior Research Fellowships

The Senior Research Fellowships programme provides funding for lecturer/reader-level appointments. Fellowships are funded jointly with industry for a period of five years.

| Name | Co-sponsor | Subject | University |
|-----------------------|--------------------------|--|---------------------------|
| Dr Richard Bourne | AstraZeneca | Digital manufacturing and discovery of pharmaceuticals | University of Leeds |
| Dr Kevin Briggs | High Speed Two (HS2) Ltd | Geotechnical engineering for high speed rail | University of Bath |
| Dr Brian Connolly | EDF Energy | Corrosion performance of energy systems | University of Manchester |
| Dr Corin Gawith | Covesion | Nonlinear optical materials by ultra-precision machining | University of Southampton |
| Dr Mahmoud Mostafavi | UKAEA | High temperature fusion engineering | University of Bristol |
| Dr Dinesh Pamunuwa | Microsemi | Zero-leakage high-temperature electronics | University of Bristol |
| Dr Priti Parikh | BBOXX | Smart solar solutions for all (S34ALL) | University College London |
| Dr Radan Slavik | Lumenicity | Thermally-insensitive hollow core optical fibres | University of Southampton |
| Dr Sotirios Tsaftaris | Canon Medical | Healthcare AI | University of Edinburgh |

Leverhulme Trust Research Fellowships

These fellowships provide mid-career engineers working in UK academic institutions with the opportunity to focus on research activities for a period of up to a year, while giving a more junior academic the opportunity to gain valuable teaching experience.

| Name | Subject | University |
|-----------------------------|--|-------------------------------------|
| Dr George Adamopoulos | Solution-processed ferroelectric field effect transistors for memory applications | Lancaster University |
| Dr Russell Goodall | Novel strategies for designing alloyed metals (NoStraDAMUS) | University of Sheffield |
| Dr Rosa Letizia | Additive manufacturing scaffolding of complex millimetre-wave components for space and wireless communications | Lancaster University |
| Dr Wenqing Liu | A solution for robust nano-electronics: topological protection | Royal Holloway University of London |
| Dr Richard Martin | Developing bioactive glasses for bone cancer therapy | Aston University |
| Dr Michail Matthaïou | Ultra-reliable, low latency machine-to-machine communications | Queen's University Belfast |
| Dr Min Pan | Digital hydraulic converters for next generation fluid power transmission technology | University of Bath |
| Dr Manosh Paul | Next generation advanced gasification technology | University of Glasgow |
| Dr Benedict David Rogers | True multi-phase modelling of wet-natural hazards: water, debris and people | University of Manchester |
| Dr Nima Shokri | Quantifying the effects of salt precipitation on evaporation from soil | University of Manchester |
| Dr William Smith | Model-based computer vision meets deep learning | University of York |
| Dr David Barrie Thomas | Self-verifying digital IP-Cores for mathematical functions | Imperial College London |
| Dr Konstantinos Tsavdaridis | Flexible and resilient 3D printed metallic connections for modular buildings | University of Leeds |
| Dr Tuck Seng Wong | FlexiChem: feedstock flexibility in chemical manufacturing | University of Sheffield |

Daphne Jackson Trust Fellowships

These Fellowships enable engineers to return to work following a career break.

| Name | Subject | University |
|---------------------|--|--------------------------|
| Dr Huiqi Lu | Gestational diabetes: predictive monitoring and management | University of Oxford |
| Dr Xuanli Luo | Nano quasicrystals for hydrogen storage | University of Nottingham |
| Dr Richard Matthews | Developing the key relationships involved in protein structure and stability in ionic solvents | Imperial College London |

Research Fellowships

These fellowships are awarded to outstanding early-career researchers from all branches of engineering who have up to four years' postdoctoral experience.

| Name | Subject | University |
|------------------------------|---|---------------------------------|
| Dr Nasrin Al Nasiri | Novel coatings for ceramic gas turbines | Imperial College London |
| Dr Yoann Altmann | Bayesian computational methods for efficient low-energy imaging and sensing | Heriot-Watt University |
| Dr Emmanouil Benetos | A machine learning framework for audio analysis and retrieval | Queen Mary University of London |
| Dr Martynas Beresna | Ultrafast laser-induced nanostructuring: a pathway to advanced optical-fibre engineering | University of Southampton |
| Dr Ruy Sebastian Bonilla | Ion-charged dielectrics for next generation electronic devices | University of Oxford |
| Dr Ben Britton | Physical understanding of micromechanical mechanisms for structural integrity assessment in nuclear engineering | Imperial College London |
| Dr Siming Chen | Integrated III-V quantum dot photonic circuits on silicon platforms | University College London |
| Dr Mark Chiew | Characterising the brain's spatio-temporal dynamics by integrating EEG and FMRI | University of Oxford |
| Dr Richard James Colchester | High-fidelity, miniaturised, endoscopic, multi-modality, all-optical ultrasound imaging platform | University College London |
| Dr Michael Cook | Automated game design: next-generation creative AI for games | Queen Mary University of London |
| Dr Alexander Dickinson | Developing, testing and fitting the next generation of prosthetic limbs | University of Southampton |
| Dr Ross James Donaldson | Practical optical ground station receivers for satellite-based quantum communication | Heriot-Watt University |
| Dr Trung Q. Duong | Meeting future wireless capacity via secure and energy-efficient small-cell networks | Queen's University Belfast |
| Dr Marco Endrizzi | Laboratory-based x-ray dark-field microscopy and microtomography | University College London |
| Dr Amanda Joy Foust | Holographic light shaping for reverse engineering neural circuit learning | Imperial College London |
| Dr Lidia Galdino | Capacity-approaching, ultra-wideband nonlinear optical fibre transmission systems | University College London |
| Dr Enrique Galindo-Nava | Developing novel materials for gas turbine engines: an integrated computational and modelling approach | University of Cambridge |
| Dr Pola Goldberg Oppenheimer | Advanced micro-optofluidic portable sensing (AMPS) technology for timely point-of-care diagnostics | University of Birmingham |
| Dr Ben Green | Long-distance quantum communication devices via engineered defects in diamond | University of Warwick |
| Dr Rainer Groh | Robust computational methods and design paradigms for spatially chaotic structures | University of Bristol |
| Dr Charlotte Hagen | A novel 3D, non-destructive imaging platform for tissue engineering | University College London |

| Name | Subject | University |
|------------------------------|--|----------------------------|
| Dr Abderrahim Halimi | Advanced computational methods for smart and extreme imaging | Heriot-Watt University |
| Dr João Henriques | MEMO – Meta-learning enhanced memorisation in one-shot | University of Oxford |
| Dr Robert Lianqi Zhao Hoye | Designing and engineering a new generation of high-efficiency tandem photovoltaics | Imperial College London |
| Dr Gregory Jasion | Hollow microstructured optical fibres for high-power laser delivery | University of Southampton |
| Dr Melanie Jimenez | Tackling antimicrobial resistance: engineering new microsystems for rapid bacteria purification | University of Glasgow |
| Dr Edward Johns | Empowering next-generation robots with dexterous manipulation: deep learning via simulation | Imperial College London |
| Dr Thomas Kissinger | Doppler-enhanced lidar system using range-resolved interferometry | Cranfield University |
| Dr Alexander (Sandy) Knowles | Titanium, steel and tungsten superalloys: engineering fracture and irradiation resistance | University of Birmingham |
| Dr Domaniç Lavery | Simplified transceiver architectures for high capacity optical networks | University College London |
| Dr Martin Lavery | A toolkit for high dimensional communications | University of Glasgow |
| Dr Fleur Loveridge | New thermal and geotechnical facility for ground heat exchangers | University of Leeds |
| Dr Myra Lydon | Solutions to monitor and assess resilience in transport (SMART) infrastructure | Queen's University Belfast |
| Dr Luca Magri | Adjoint-based approaches in thermo-acoustics: understanding, modelling and controlling instabilities | University of Cambridge |
| Dr Massimiliano Materazzi | Advanced thermal technologies for conversion of waste into second-generation biofuels | University College London |
| Dr Adnan Mehonic | Next generation adaptive electronics for neuromorphic engineering | University College London |
| Dr Richard Middlemiss | MAP-Grav (microscopic semi-absolute pendulum gravimeter) | University of Glasgow |
| Dr Ross Millar | Germanium-tin quantum detectors | University of Glasgow |
| Dr Leila Miriam Moura | Liquid engineering for gas separation | Queen's University Belfast |
| Dr Armin Mustafa | 4D vision for perceptive machines | University of Surrey |
| Dr Milos Nedeljkovic | On-chip systems for mid-infrared sensing | University of Southampton |
| Dr Christopher Ness | Illuminating forces in suspensions: pathways to rational formulation and processing | University of Edinburgh |
| Dr Eric Numkam Fokoua | Next-generation fibre-optic gyroscopes for ultraprecise positioning | University of Southampton |
| Dr Thomas Okell | A unified approach for non-invasive assessment of brain blood supply | University of Oxford |
| Dr Chaitanya Paruchuri | Characterisation and control of tip noise in ducted fans | University of Southampton |
| Dr Oliver Payton | Mapping, measuring and manufacturing nanostructures via high-speed atomic force microscopy | University of Bristol |

| Name | Subject | University |
|------------------------|---|----------------------------|
| Dr Fernando Perez-Cota | Phonon microscopy; a new way to see inside living cells | University of Nottingham |
| Dr Pavlos Petoumenos | Deep learning for easier compiler analysis and optimisation | University of Manchester |
| Dr David Phillips | Sensing and actuation of nanoscale mechanics in biological systems | University of Exeter |
| Dr Soraia Pimenta | Multiscale discontinuous composites for large scale and sustainable structural applications | Imperial College London |
| Dr Antoniu Pop | PROMPT: productive and robust many-core programming | University of Manchester |
| Dr Ludovic Renson | Developing next generation testing methods for nonlinear mechanical structures | Imperial College London |
| Dr Robert Richards | Development of indium gallium arsenide bismide for mid-wavelength infrared applications | University of Sheffield |
| Dr Brian Sheil | Intelligent real-time monitoring to inform underground construction processes | University of Oxford |
| Dr Joseph Sherwood | Interactions between fluid dynamics and biological function in microvascular disease | Imperial College London |
| Dr Mariia Sorokina | Laser brain: artificial neural network based on fibre laser system | Aston University |
| Dr Michael Thompson | Graphene transistors for cryogenic electronics | Lancaster University |
| Dr Neil Vaughan | Virtual reality training: development of frameworks for haptic skill assessment, material modelling and adaptation | University of Exeter |
| Dr Catarina Veiga | A framework to study radiotherapy-induced late effects on paediatric patients | University College London |
| Dr Yue Wang | TOAST – two-dimensional optical amplification for silicon technologies | University of York |
| Dr Martin White | Next generation waste-heat recovery systems based on two-phase expansion | City, University of London |
| Dr Wenchuan Wu | Rapid mapping of brain connectivity and microstructure using diffusion MRI | University of Oxford |
| Dr Daniel Zabek | Manufacturing a new class of ferrofluid for thermomagnetic convection enhanced heat transfer, energy generation and storage | Cardiff University |
| Dr Min Zhang | Fully superconducting machines for next generation electric aircraft propulsion | University of Strathclyde |

Engineering for Development Research Fellowships

These fellowships are funded by the Global Challenges Research Fund to support research designed to tackle a specific engineering development need of a country or countries on the Development Assistance Committee list.

| Name | Subject | University |
|---|--|----------------------------------|
| Dr Oluwasola Olakunle Daniel Afolabi | Advanced technological synergy for renewable energy production in sub-Saharan Africa | Loughborough University |
| Dr Efstratios Batzelis | SOL-DEV: Addressing the solar integration challenges in developing countries | Imperial College London |
| Dr Ralf Bauer | Miniaturised 3D-printed biomedical imaging system using optical MEMS | University of Strathclyde |
| Dr Wei He | Smart multi-functional affordable solar home (SMASH) for rural India | University of Warwick |
| Dr Jan Andries Mol | Single-molecule electronics | Queen Mary, University of London |
| Dr Ana Weydaluisa Namburete | Ultrasound-based atlas for longitudinal analysis of fetal brain maturation | University of Oxford |
| Dr Samuel Powell | Engineering a new approach to biomedical imaging using sound and light | University of Nottingham |
| Dr Junjie Shen | Safe drinking water using capacitive deionization for East Africa | University of Bath |
| Dr Long Seng To | Enhancing community energy resilience using renewable energy in developing countries | Loughborough University |
| Dr Ton van den Bremer | Cleaning the ocean: understanding transport of plastic pollution by waves | University of Oxford |
| Dr Thomas Vetter | Understanding impurity incorporation into organic crystals from measurements and simulations | University of Manchester |
| Dr Marta Vignola | Eco-engineered biofilters for sustainable removal of pesticides in drinking water | University of Glasgow |
| Dr Tingting Zhu | A clinical AI for tackling multimorbidities in hospitals in low- and middle-income countries (LMICs) | University of Oxford |

Associate Research Fellowships

These Fellowships provide in-kind support (e.g. mentoring, training and additional funding opportunities) for Research Fellows who have declined or terminate the Research Fellowship award to undertake other institutions' fellowship schemes.

| Name | Subject | University |
|----------------------|---|-------------------------|
| Dr Stella Pedrazzini | Nickel superalloy design for corrosion resistance | Imperial College London |

UK Intelligence Community Postdoctoral Research Fellowships

These two-year fellowships are funded by the Government Office for Science to promote unclassified basic research in areas of interest to the intelligence, security and defence community.

| Name | Subject | University |
|--------------------------------------|--|----------------------------|
| Dr Jerone Theodore Alexander Andrews | Anomaly detection for the identification of tampered face images | University College London |
| Dr Harry Bostock | RF and microwave trapped ion quantum sensor for counter-eavesdropping | University of Sussex |
| Dr Raoul Franky Guiazon | Artificial behaviour based authentication for the Internet of Things | University of Leeds |
| Dr David John Harris | Evaluating virtual reality training of cognitive skills for counter terror policing | University of Exeter |
| Dr John David Haynes | The nature of risk in the privacy calculus | City, University of London |
| Dr Timothy Helps | Insect-inspired strong and soft semi-autonomous agents for remote missions | University of Bristol |
| Dr Edmund Hunt | Risk-sensitive robot swarms for effective environmental monitoring and anomaly investigation | University of Bristol |
| Dr Luce le Gorrec | Scalable partitioning of large complex networks | University of Strathclyde |
| Dr Ying Lia Li | Optomechanical sensors: rapid prototyping for navigation and quantum technologies | University College London |
| Dr Keng Tiong (Kelvin) Ng | Identification of illegal threat manufacturing activity via wastewater markers (ThreatMARK) | King's College London |
| Dr James Robinson | Environmentally stable rechargeable batteries for flexible wearable electronics | University College London |
| Dr Jonathan Michael Silver | Quantum and optical sensors | City, University of London |
| Dr Cédric Spire | Novel ways for automated error detection in diverse data types | Brunel University London |

Lloyd's Register Foundation Research Fellowships

This fellowship is funded by the Lloyd's Register Foundation. It is aimed at outstanding researchers from all branches of engineering who are about to finish their PhDs or have up to four years' postdoctoral experience.

| Name | Subject | University |
|-------------------|---|-------------------------|
| Dr Mark Batty | CGrail: unified, optimisable and formally-specified C concurrency | University of Kent |
| Dr Rebecca Boston | Nanostructured oxides for sustainable energy storage and recovery | University of Sheffield |

Industrial Fellowships Scheme

The Royal Academy of Engineering Industrial Fellowships scheme enables mid-career academics and industrialists to undertake a collaborative research project in either an industrial or academic environment, where one party would host the other.

| Name | University | Industrial partner | Project title |
|---------------------------|----------------------------|---|--|
| Dr Federico Alberini | University of Birmingham | Johnson Matthey | Use of advanced diagnostic data for complex fluid process scale-up |
| Dr Halim Alwi | University of Exeter | Prismatic Ltd. | Flight control for high altitude long endurance UAV |
| Mustafa Aziz | University of Exeter | Modelling Engineering and Development Company Limited | Coiled tubing integrity monitoring system |
| Dr Madeleine J Bussemaker | University of Surrey | Arcadis UK Ltd/CE Geochem | Ultrasonic degradation of per- and poly- fluoroalkyl substances (PFAS) |
| Solomon Brown | University of Sheffield | Drax Coporate Limited | Unlocking the potential of BECCS in the UK |
| Dr Matteo Ceriotti | University of Glasgow | Alba Orbital Ltd | Attitude determination and control for PocketQube picosatellites |
| Mohammed El-Hajjar | University of Southampton | interDigital | Intelligent holographic MIMO transceiver design for next generation wireless systems |
| Raziyeh Farmani | University of Exeter | Servern Trent Water | Digital solutions for resilient urban water systems |
| Mehreen Saleem Gul | Heriot-Watt University | Wood | Characterisation of bifacial photovoltaic modules |
| Basel Halak | University of Southampton | Arm Holdings | Securing hardware supply chain with an unforgeable root of trust |
| Dr Abigail Hathway | University of Sheffield | Arup | Model predictive control for low energy building operation |
| Dr Matthew Himsworth | University of Southampton | Defence Science and Technology Laboratory | Quantum sensing in dynamic environments |
| Michael Robert Jennings | Swansea University | Newport Wafer Fab Limited | Novel power transistors for automotive application |
| Dr Zafer Kazanci | Queen's University Belfast | Bombardier Aerospace | Low-velocity impact analysis of composite sandwich panels utilising auxetic cores |
| Jongrae Kim | University of Leeds | Craft Prospect Ltd. | Develop automatised systems engineering procedure for cubesat design and analysis |
| Abhishek Kundu | Cardiff University | Airbus Operations Limited | Data-driven robust optimisation of aircraft wing in early stage design |
| Mathieu Lucquiaud | University of Edinburgh | C- Capture Ltd | Innovation in technologies for carbon dioxide capture |

| Name | University | Industrial partner | Project title |
|--------------------------------|---------------------------------|--|---|
| Dr Alistair McIlhagger | University of Ulster | Bombardier | MODATex – multi-optimisation and development of advanced textile composites |
| Stefanos Aldo Papanicolopoulos | University of Edinburgh | DEM Solutions Ltd. | Discrete-element modelling of elongated cylindrical particles |
| Dr Mehrnoosh Sadrzadeh | Queen Mary University of London | BBC Research and Development | Cross domain unified representations for content similarity |
| Elena Simone | University of Leeds | Syngenta | A multi-sensor approach to design and control multiphase/multicomponent crystallization processes |
| Eirini Velliou | University of Surrey | Unilever | Development of the next generation 3D reconstructed human skin |
| Andrea Lecchini Visintini | University of Leicester | Rolls-Royce Control Systems, part of the Rolls-Royce Group | Fueldraulic actuation systems for the next generation of turbofan engines |
| Christopher Windows-Yule | University of Birmingham | Recycling Technologies | Optimising heat and particle transport in novel waste-plastic recycling processes |
| Liu Yang | University of Strathclyde | The Weir Group PLC | A paradigm shift towards nonmetallic centrifugal slurry pumps |
| Hexin (Johnson) Zhang | Edinburgh Napier University | Intelligent Wood Systems Ltd | Innovative engineered bamboo-timber composite materials |
| Huiling Zhu | University of Kent | British Telecom Group | Machine learning techniques for future mobile networks |

APEX Awards

In partnership with the British Academy and the Royal Society, and with the support of The Leverhulme Trust, the Academy launched the APEX Awards (Academies Partnership in supporting Excellence in cross-disciplinary (X) research). These awards aim to demonstrate how researchers from different disciplines sharing a common vision can come together to generate creative and innovative solutions that will benefit wider society.

| Name | Subject | University |
|----------------------------|---|-----------------------------------|
| Professor Jennifer Barclay | Making sense of risk and uncertainty: narrative and metaphor in the face of volcanic activity | University of East Anglia |
| Professor Dan Brockington | Evidence-based development policy in an era of enhanced remote-sensing and the SDGs | University of Sheffield |
| Dr Stephanie Bunn | Forces in Translation: dialogues between craft, anthropology and mathematics | University of St Andrews |
| Dr James Burridge | Spatial theories of linguistic and cultural evolution | University of Portsmouth |
| Dr Marilina Cesario | Before and after Halley: medieval visions of modern science | Queen's University Belfast |
| Professor Rama Cont | Systemic risk: mathematical modelling and interdisciplinary approaches | Imperial College London |
| Professor Fay Dowker | The emergence of the continuum | Imperial College London |
| Dr Andrew Duncan | Data driven profiling and assessment of conflicts in Africa | Imperial College London |
| Professor Robert Field | Exploring water re-use – the nexus of politics, technology and economics | University of Oxford |
| Professor Dave Goulson | People, pollinators and pesticides in peri-urban farming | University of Sussex |
| Professor Andrew Hogg | New models of sediment suspensions | University of Bristol |
| Dr David Horsell | Hot fuzz: bumble bee hair as a thermal metamaterial | University of Exeter |
| Dr Neil Kad | Squeezing the most out of DNA; developing nanoconfinement tools to study DNA repair | University of Kent |
| Dr Christina Lee | Nettles and networks: new ways to tackle wound infections | University of Nottingham |
| Dr Tom Mitchell | Exploring molecular data with immersive technology: interactive sonification in virtual reality | University of the West of England |
| Dr Margarita Staykova | Material imagination | Durham University |
| Professor Tamas Szekely | The impact of adult sex ratio on societies | University of Bath |

Regional Engagement Awards

These awards seek to support current Academy research awardees to engage with SMEs and other organisations, so they can benefit from their engineering expertise, excellence and networks. Applicants are encouraged to propose creative ways of collaborating with organisations that support economic development.

| Name | University |
|---|----------------------------|
| Professor Ana Lucia Caneca Cavalcanti | University of York |
| Professor Claire Davis | WMG, University of Warwick |
| Professor Hongbiao Dong | University of Leicester |
| Professor Daniel Esser | Heriot-Watt University |
| Professor Kenneth Grattan OBE FREng | City, University London |
| Professor Roy Kalawsky | Loughborough University |
| Professor Alan Kemp | University of Strathclyde |
| Professor Colin Robert McInnes MBE FREng FRSE | University of Glasgow |
| Professor Chris Pearce | University of Glasgow |
| Professor Cindy Smith | University of Glasgow |
| Professor Sriram Subramanian | University of Sussex |
| Professor Tong Sun OBE | City, University of London |
| Professor Ashutosh Tiwari | University of Sheffield |
| Professor Jennifer Whyte | Imperial College London |
| Professor Xibo Yuan | University of Bristol |
| Dr Min Zhang | University of Strathclyde |

Proof of Concept Awards

The Academy's Proof of Concept awards seek to support current Academy research awardees to explore the viability and commercial potential of a novel and innovative concept. The commercial potential can be achieved via licensing arrangements or establishment of a spinout company. This pre-commercial grant is intended to underpin the case for subsequent investment.

| Name | Project title | University |
|---|---|----------------------------|
| Dr Martynas Beresna | Optical fibres with enhanced acoustic signal feedback: exploring commercial opportunities | University of Southampton |
| Professor Kenneth Grattan OBE FREng | Enhanced hydrodynamic performance of marine propellers: proof of principle of new monitoring approach using fibre Bragg grating-based sensor system | City, University of London |
| Professor Dame Xiangqian (Jane) Jiang DBE FREng | Demonstration of a single-shot dispersive profile interferometer for fast in-process surface inspection | University of Huddersfield |
| Dr Pola Goldberg Oppenheimer | Advanced integrated microengineered technology (AimTech) for point-of-care diagnostics | University of Birmingham |
| Dr Min Pan | Next generation hydraulic machines using highly efficient digital hydraulic converters | University of Bath |
| Professor Tong Sun OBE | Integration of optical fibre sensors into power electronics manufacturing process to create 'smart' power modules | City, University of London |

Enterprise Fellowships

Enterprise Fellowships provide funding and support to entrepreneurial postdoctoral engineers, working at a UK university, to enable them to develop a spin-out business based on their innovation.

| Name | Project title | University |
|----------------------------|--|--------------------------|
| Dr Alireza Abbassi Monjezi | Self-powered sewage treatment for rural applications | University of Edinburgh |
| Dr Howard Moshtael | SmartScroll | University of Edinburgh |
| Dr Naa Dei Nikoi | Dropping the needle | University of Birmingham |
| Dr Karl Obszanski | Aston vision sciences | Aston University |

IRT Enterprise Fellowships

IRT Enterprise Fellowships provide funding and support to international PhD graduates based in the UK to develop their business skills so that they can build a business based on their innovation.

| Name | Project title | University |
|--------------------------|-------------------------------|---------------------------|
| Dr Wéam Aridi | eCAM | University of Cambridge |
| Dr Julija Bainiaksinaite | MyFactori | University College London |
| Dr Melissa Berthelot | Warner Patch | Not applicable |
| Dr Robin Hartley | MakeSmart | University of Sheffield |
| Dr Alex Nielsen | Armadillo Metal Coatings Ltd. | Swansea University |
| Dr Yue Wu | Solar Mapping for Cities | University of Southampton |

ERA Award

ERA Foundation Enterprise Fellowships provide funding and support to entrepreneurial engineering graduates to develop their business skills so that they can build a business based on their innovation.

| Name | Project title | Startup company |
|-----------------|-----------------------------------|-----------------|
| Joseph Sherwood | Lightweight folding electric bike | FLIT Bike |

Royal Commission 1851 Enterprise Fellowships

Royal Commission 1851 Enterprise Fellowships provide funding and support to entrepreneurial engineering graduates to develop their business skills so that they can build a business based on their innovation.

| Name | Project title | Startup company |
|-------------------|---|-----------------|
| Lewis Hornby | Boost water intake with Jelly Drops | Jelly Drops |
| Alexander Murdoch | Sustainable, energy-efficient, fire-proof building insulation | Thermulon |

Launchpad Competition

The Launchpad Competition supports promising engineering entrepreneurs between the ages of 18 and 25 with a cash prize, training, mentoring, and support from the Gammon family, to enable them to start a business based on their engineering innovation.

| Name | Project title | Startup company |
|-----------------|--|-----------------|
| George Winfield | Disposable paper-based respiratory sensors | SPYRAS Ltd |

SME Leaders Programme

This six-month programme provides leaders of high growth SMEs with a support package to improve their leadership and management skills so that they can scale, including mentoring, one-to-one coaching, and £10,000 towards leadership training courses of their choice.

Awardee companies

| | | |
|---------------------------------|----------------------|-------------------|
| Aceleron Energy | INSPHERE | Provenance |
| Agile Analog Ltd | Kalium Health | OxSight |
| Arctoris | Mirada Medical | Sixfold Bio |
| AssetCool | Mom Incubators | Spotta |
| Biorelate | Mobilus Labs Limited | Surepulse Medical |
| Cambridge GaN devices Ltd | NOTPLA | Swytch Bike |
| Footfalls & Heartbeats (UK) Ltd | Odin Medical limited | |
| Humanising Autonomy | Open Bionics | |

Frontiers of Engineering for Development seed funding grants

This scheme supports new interdisciplinary collaborative pilot projects between groups of two or more attendees of the Frontiers of Engineering for Development symposia.

Tranche 7 – awarded following the 'WASHing Away Inequalities' symposium in Mexico City, Mexico, May 2019

| Names | Institutions | Project title | | |
|---|---|---|--|--|
| Tracy Morse Hans Komakech Rebecca Sindall Annatoria Chinyama | University of Strathclyde WISE-Futures University of KwaZulu-Natal National University of Science and Technology | Sanitation for urban inclusion, transformation and equity (SUITE) | | |
| Flor Y. Garcia-Becerra | Metropolitan Autonomous University | | | |
| Elizabeth Tilley Dani Barrington Rebecca Sindall Esther Shaylor Jo Rose Kristin Ravndal Joanne Beale Tracy Morse Sneha Krishnan May Sule Annatoria Chinyama | University of Malawi University of Leeds University of KwaZulu-Natal UNICEF Supply Division York University Cranfield University Independent Consultant University of Strathclyde LSHTM Imperial College London National University of Science and Technology | | Amplifying local voices to reduce failure in the WASH sector | |
| Andrew Fox Eleanor Wozei Barbara Evans | Plymouth University Uganda Christian University University of Leeds | | | |
| Stephanie Connelly Cindy Smith Flor Y. Garcia-Becerra Carla Liera | University of Glasgow University of Glasgow Metropolitan Autonomous University Independent Consultant | Optimising constructed wetlands by biological design | | |
| Luisa Orsini Kemi Akinola Luis Carlos Rosa Karl Dearn Mohamed Abdallah Rafael Orozco Isaac Akinwumi | University of Birmingham United Utilities SEIP 7 University of Birmingham University of Birmingham University of Birmingham Covenant University | | | The circularity of biological wastewater treatment |
| Askwar Hilonga Safari Kinunghi May Sule Justina Mosh | Nelson Mandela African Institution of Science and Technology National Institute for Medical Research, Mwanze Centre Imperial College London National Institute for Medical Research, Mwanze Centre | | | |

Tranche 8 – awarded following the 'From Feeding People to Nourishing People' symposium in Antananarivo, Madagascar, November 2019

| Names | Institutions | Project title |
|--|--|---|
| Jonathan Cooper Almoayied Assayed, Mohammed Mashatleh Rana Ardah | Harper Adams University Royal Scientific Society Jordan Royal Scientific Society Jordan Royal Scientific Society Jordan | Enhancing food security through urban farming systems in Jordan |
| Ruben Sakrabani Harinaivo Ramanantoanina Lina Raharasoavelohanta Afia Zi | Cranfield University Engineers Order of Madagascar AIM – Action Intercooperation Madagascar Agricultural University | Evaluating deployment of mobile phone Apps in smallholder fertiliser management |
| Martina Bozzola Harinaivo Ramanantoanina Aurel Clyde Rabehanta Trust Beta Hernan Alfredo Manson Lameck Fiwa | Queen's University Engineers Order of Madagascar WaterAid Madagascar University of Manitoba International Trade Centre (UN/WTO) Lilongwe University of Agriculture and Natural Resources (LUANAR) | Fostering nutrition security through cash crops / indigenous food crops systems in Madagascar |
| Jean Gabriel Rakotondrabe Kenlee Randrianarisoa | Consultant Soanamad Madagascar | |
| Andrew Ward Ruben Sakrabani Ezeiel Njeru Charles Knapp Damion Corrigan | University of Strathclyde Cranfield University Kenyatta University University of Strathclyde University of Strathclyde | Identification of sensor targets for low cost soil fertility assessment |
| Miao Guo Ai Karawati Geoffrey Knott Felamboahangy Rasoarahona Miguel Enrique Malnati Ramos | King's College London Noveltindo Eiyo Tech Ltd New Foods Ltd/University of Surrey University of Antananarivo/SUN Madagascar Bio Natural Solutions Company | Multi-scale zero-waste smart protein |
| Katharina Kessler Miguel Enrique Malnati Ramos Claudia Carol Zavaleta Cortijo Magaly Blas | University of Cambridge Bio Natural Solutions Company Universidad Peruana Cayetano Heredia Universidad Peruana Cayetano Heredia | Prototype drink from Amazonian plants based on community's nutritional needs |
| Tuck Seng Wong Kahitouo Hien Kang Lan Tee Bepio Herve Bama | University of Sheffield FasoPro University of Sheffield Institut de l'Environnement et Recherches Agricoles (INERA) | Single-cell protein for sustainable shea caterpillar farming in Burkina Faso |
| Andrew Ward Harry Chaplin Tsiry Angelos Andriamanampisoa Damion Corrigan | University of Strathclyde Tatirano Social Enterprise University of Antananarivo University of Strathclyde | Towards online monitoring for microorganisms in water systems |

| Names | Institutions | Project title |
|---------------------------|---|--|
| Olwenn Martin | Brunel University | Z-lab: co-designing sustainable livelihoods in rural Zambian refugee resettlements |
| Ximena Schmidt Rivera | Brunel University | |
| Professor Tilahun Workneh | University of Kwazulu-Natal | |
| Harry Chaplin | Tatirano Social Enterprise | |
| Lameck Fiwa | Lilongwe University of Agriculture and Natural Resources (LUANAR) | |
| Xiaojun Yin | Swansea University | |
| Justin Munyaka | UNDP | |
| Julien Lepine | Universite Laval | |
| Sheila Etam | Ukulima Tech Ltd. | |
| Mary Richards | Brunel University | |

Follow-on funding grants: awardees 2019–2020

These mid-sized grants, worth up to £300,000 over three years, build on previously funded projects from the Frontiers portfolio, helping them to scale up previous activities into fully formed research projects that tackle global challenges.

| Names | Institution | Country | Project title |
|---------------------------|---|----------------|---|
| Francesco Pomponi | Edinburgh Napier University | UK | SHELTERS: Sustainable homes enabling long term empowerment of refugees |
| Mark Richard Huxham | Edinburgh Napier University | UK | |
| Abimbola Olukemi Windapo | University of Cape Town | South Africa | |
| Susan Snaddon | Built Environment Consultant | Kenya | |
| Lara Alshawawreh | Mutah University | Jordan | |
| Bernardino D'Amico | Edinburgh Napier University | UK | |
| Johannes John-Langba | University of Kwazulu-Natal | South Africa | |
| Gamelihle Sibanda | Biomimicry SA | Zimbabwe | |
| Sara Candiracci | ARUP | UK | |
| Luana Pomponi | PA Architects | Italy | |
| Tim White | ARUP | UK | |
| Karthikeyan Kandan | De Montfort University | UK | Upcycled plastic prosthetics (UPP) |
| Arjan Buis | University of Strathclyde | UK | |
| Amit Singh | Malaviya National Institute of Technology | India | |
| Pooja Mukul | Bhagwan Mahaveer Viklang Sahayata Samiti | India | |
| Farukh Farukh | De Montfort University | UK | |
| Sarah Day | University of Strathclyde | UK | |
| P.K. Lenka | National Institute for Locomotor Disabilities | India | |

| Names | Institution | Country | Project title |
|-----------------------------------|--|----------------|--|
| Savitri Maharaj | University of Stirling | UK | Multimodal data analysis for monitoring invasive aquatic weeds in India |
| Armando Marino | University of Stirling | UK | |
| Deepayan Bhowmik | University of Stirling | UK | |
| Adam Kleczkowski | University of Strathclyde | UK | |
| Alice R P Sujeetha Christopher | National Institute of Plant Health Management | India | |
| Srikanth Rupavatharam | International Crops Research Institute for the Semi-Arid Tropics | India | |
| Nagendra Prabhu | S. D. College, University of Kerala | India | |
| Cindy Smith | University of Glasgow | UK | Rational biological design and transdisciplinary evaluation of constructed wetlands as a sustainable decentralised sanitation solution in Mexico City |
| Stephanie Connelly | University of Glasgow | UK | |
| Flor Y Garcia-Becerra | Metropolitan Autonomous University | Mexico | |
| Miriam Alfie Cohen | Metropolitan Autonomous University | Mexico | |
| Fryderyk Paczkowski | Parakata | Mexico | |
| José Pedro Kraemer | Borda | Mexico | |
| Joshua Vande Hey | University of Leicester | UK | Environmental health in sub-Saharan Africa: leveraging local and global air pollution data for epidemiological research |
| Lisa Micklesfield | University of the Witwatersrand | South Africa | |
| Michele Ramsay | University of the Witwatersrand | South Africa | |
| Caradee Wright | South African Medical Research Council | South Africa | |
| Martin Tobin | University of Leicester | UK | |
| Helen Fisher | Kings College London | UK | Harnessing technology to improve prediction of future depression onset among Brazilian adolescents (the IDEA-TECH project) |
| Christian Kieling | Universidade Federal do Rio Grande do Sul | Brazil | |
| Brandon Kohrt | George Washington University | USA | |
| Ricardo Matsumura de Araujo | Universidade Federal de Pelotas | Brazil | |
| Alastair van Heerden | Human Sciences Research Council | South Africa | |

| Names | Institution | Country | Project title |
|---------------------------------|--|----------------|--|
| Joy Singarayer | University of Reading | UK | Climate resilience and food production in Peru (CROPP) |
| Nicholas Branch | University of Reading | UK | |
| Martin Timaná | Pontificia Universidad Católica del Perú | Peru | |
| Andrew Wade | University of Reading | UK | |
| Fernando González | Pontificia Universidad Católica del Perú | Peru | |
| Kevin Lane | Universidad de Buenos Aires | Argentina | |
| Frank Meddens | University of Reading | UK | |
| Ioannis Papakonstantinou | University College London | UK | Self-cleaning coatings for targeting solar energy and water supply mismatch in India and Brazil |
| Manish Tiwari | University College London | UK | |
| Namrata Sengar | University of Kota | India | |
| Anand Upadhyay | The Energy and Resources Institute | India | |
| Renato Machado Cotta | Federal University of Rio de Janeiro | Brazil | |
| Pranav Gadhia | ARS GlassTech Pvt. Ltd. | India | |
| Deepak Gadhia | MSA Renewtech Foundation | India | |
| Satheesh Krishnamurthy | The Open University | UK | |
| Geoffrey Gobert | Queen's University Belfast | UK | Improved diagnostics for important parasitic diseases of bovines with lateral flow and microchip technologies |
| Hu Wei | Fudan University | China | |
| Mark Eisler | University of Bristol | UK | |
| James LaCourse | Liverpool School of Tropical Medicine | UK | |
| Russell Stothard | Liverpool School of Tropical Medicine | UK | |
| Jahashi Nzalawahe | Sokoine University of Agriculture | Tanzania | |

| Names | Institution | Country | Project title |
|------------------------|--|----------------|--|
| Collins Iwuji | University of Sussex | UK | Optimised electronic patient records to improve clinical monitoring of HIV-positive patients in rural South Africa (MONART Trial) |
| Abraham Jacobus Herbst | Africa Health Research Institute | South Africa | |
| Nothando Ngwenya | Africa Health Research Institute | South Africa | |
| Rujeko Chimukuche | Africa Health Research Institute | South Africa | |
| Andrew Boulle | University of Cape Town | South Africa | |
| Natalia Hounsome | University of Sussex | UK | |
| Henry Sunpath | Nelson R Mandela School of Medicine, University of KwaZulu-Natal | South Africa | |
| Meg Osler | University of Cape Town | South Africa | |
| Kathy Baisley | London School of Hygiene & Tropical Medicine | UK | |
| Thandeka Khoza | Africa Health Research Institute | South Africa | |
| Zhugen Yang | Cranfield University | UK | Low-cost paper-based biosensors for rapid monitoring of water quality in LMICs |
| Mojisola Owoseni | Owoseni | Nigeria | |
| Frederic Coulon | Cranfield University | UK | |
| Francis Hassard | Cranfield University | UK | |
| Judith Torimiro | University of Yaoundé I | Cameroon | |
| Anh N. Phan | Newcastle University | UK | Cellulose aerogel from agricultural residues for water treatment |
| Huynh Ky Phuong Ha | Ho Chi Minh City University of Technology | Vietnam | |
| Son Truong Nguyen | Ho Chi Minh City University of Technology | Vietnam | |
| Philipp Theis | University of Exeter | UK | Socio-technical assessment for resilient electricity networks in rural Africa – STARENA |
| Mohammad Abusara | University of Exeter | UK | |
| Morwesi Ramonyai | Borena Energy | South Africa | |
| Caswel Pokwane | Doornkop Community Property Association | South Africa | |

Frontiers of Development seed funding grants

This scheme supports new interdisciplinary collaborative pilot projects between groups of two or more attendees of the Frontiers of Development symposia. This programme is run by the Academy in partnership with the Royal Society, the British Academy and the Academy of Medical Sciences.

Tranche 2 – awarded following the 'Inclusivity and wellbeing in the first 2,000 days of life' symposium in Cambridge, UK, March 2019

| Names | Institutions | Project title |
|--|--|---|
| Fiona Denison Queen Dube Victoria Nakibuuka Zelee Hill | University of Edinburgh Queen Elizabeth Central Hospital Nsambya Hospital UCL | Developmental care packages to improve neonatal outcomes – a multidisciplinary approach |
| Maiwenn Kersaudy-Kerhoas Alex Akinwumi Ronita Luke Victoria Nakibuuka Queen Dube Fiona Denison Motlalepula Pholo | Heriot-Watt University Obafemi Awolowo University University of Sierra Leone Nsambya Hospital Queen Elizabeth Central Hospital University of Edinburgh Department of Agricultural Research, Botswana | Neonatal sepsis monitoring in sub-Saharan Africa with a microbial cell-free DNA sequencing approach |
| Sabine Little Sneha Krishnan Ines Varela-Silva | University of Sheffield LSHTM Loughborough University | Communities' languages, identities and belonging in participatory health care interventions |
| Alexander Manu Sunil Bhopal Rob Hughes | LSTM Royal Victoria Infirmary/LSHTM CIFF/LSHTM | Improving early childhood development in Ghana's inner-cities/'Zongos': A child-centred perspective |
| Long-yuan Li Stephen Tashobya Hoang Minh Tu Van | Plymouth University Wekebere Oxford University Clinical Research Unit | Low-cost and lightweight sensing platform for monitoring sleep quality and posture for infants in Vietnam |
| Melanie Luhrmann Alex Akinwumi Isaac Akinwumi | Royal Holloway and IFS Obafemi Awolowo University Teaching Hospitals Complex Covenant University | WASH environments, sanitation policies and health outcomes during the first 2,000 days of life |
| Caspar Addyman Zelee Hill Brian Turyabagye Rob Hughes Gabriella Conti Sunil Bhopal Pasco Fearon | Goldsmiths UCL MamaOpe Medicals CIFF/LSHTM UCL Royal Victoria Infirmary/LSHTM UCL | Automated measurement of responsive caregiving at scale using machine learning |

Tranche 3 – awarded following the 'Urban opportunity for building a resilient future' symposium in Putrajaya, Malaysia, July 2019

| Names | Institutions | Project title |
|--|--|--|
| David Werner Osuolale Olayinka Muhammad Nauman Ahmad Sara Waring | Newcastle University Elizade University University of Agriculture, Peshawar University of Liverpool | Rapid identification and effective communication of waterborne hazards in emergencies |
| Jack Denny Sara Waring | University of Southampton University of Liverpool | Opportunities for improving preparedness and resilience to urban explosive violence |
| Felix Ringel Ashiq Ur Rahman Evanca Mwachunga Huraera Jabeen Nishara Fernando Juan Miguel Kanai | Durham University Khulna University University of Malawi BRAC University University of Colombo University of Sheffield | Pathways to sustainability in postindustrial cities of the Global South |
| Nabeela Ahmed Yasmin Ara Huraera Jabeen | University of Sheffield BRAC University BRAC University | Mobilising women: navigating urban infrastructures and resilience in Dhaka, Bangladesh |
| Alan Forster Liz Brogden Leigh-Anne Hepburn Desmond Bernie Megan Boston | Heriot-Watt University Queensland University of Technology University of Sydney ice cream architecture University of Waikato | The educational opportunity for building a resilient future |
| Juan Miguel Kanai Alex Lechner Saut Sagala Lindsay Beevers Amol Chaphekar | University of Sheffield University of Nottingham (Malaysia campus) Resilience Development Initiative Heriot-Watt University StrataEnviro Pvt Ltd | Nature-based solutions for urban disaster mitigation in middle-income countries |
| Melissa Bedinger Faith Taylor Bansari Prajapati Lindsey Beevers | Heriot-Watt University King's College London Mahila Housing Sewa Trust (MHT) Heriot-Watt University | Climate-resilient slums: a systems approach for inclusive climate impact assessment |
| Sheida Afshan Anne Rweyora David Sagita Yun li Go | University of Southampton Smart Havens Africa University of 17 Augustus 1945 Surabaya Heriot-Watt University | Transforming lives through low-cost housing – case study of Uganda and Indonesia |

Leaders in Innovation Fellowships

The Leaders in Innovation Fellowship (LIF) programme is aimed at researchers from emerging economies who have an innovation that helps address their country's development needs, and offers an intensive two weeks of entrepreneurship training and mentoring to help them commercialise their innovation. All LIF participants also have the opportunity to partake in a follow-on support programme lasting up to six months with their individual mentors, and join the LIF online community.

| Full name | Country | Innovation title |
|---|----------|---|
| Allan Rony Carniel | Brazil | Kohmnect Control and Telemetry (Neokohm Electronic Intelligence) |
| Caetano Padiál Sabino | Brazil | BioLambda, Scientific and Commercial Ltd |
| Diogo Cunha | Brazil | Digo Maker |
| Eimi Arikawa | Brazil | Forlidar |
| Fernando Hinnah | Brazil | Smart Agri |
| Fernando Antonio Torres Velloso da Silva Neto | Brazil | MVISIA |
| Gabriel Carvalho | Brazil | Vert Chemicals |
| Gabriel Gonçalves Silveira | Brazil | Cheap2ship |
| João André Ozório | Brazil | YAK |
| Lucas Bories Fachin | Brazil | Nanogreen |
| Lucas Dal Ponte Feliciano | Brazil | Comando Soluções Mecatrônicas |
| Osmar Vaz de Carvalho Netto | Brazil | BioinFood |
| Paula Fortes | Brazil | Alba Sensors and Diagnostics |
| Saionara Vilhegas Costa | Brazil | Nanocel |
| Ticyana Carone Banzato | Brazil | Trianguli R&D AGRO |
| Alejandro Morales | Colombia | Consulta Inteligente |
| Angela Lema Perez | Colombia | Bhelp |
| Eliana Alejandra Camargo Niño | Colombia | Mas Por TIC |
| Harby Daniel Aranguren Fino | Colombia | Keraunos Sas |
| Jennifer Rodriguez | Colombia | VBraille, inclusive communication and education. |
| Juan Diego Lemos | Colombia | BIONTS Technology |
| Juan Felipe Sierra De la Rosa | Colombia | Fractal Farm – Sustainable foods (Granja Fractal – Alimentos sostenibles) |
| Leonardo Camargo Forero | Colombia | UbiHPC |
| Luis Henry Copete López | Colombia | ECOFASES |
| Marian Villa | Colombia | Corporación Pioneras |
| Nestor David Garcia Alonso | Colombia | TREBENI |
| Ricardo Enrique Alba Torres | Colombia | Ekomuro H2O+ |
| Sara Ramirez | Colombia | Wearable vital signs monitoring system |
| Sergio Zafra | Colombia | Aprediendo.la |
| Sameh Mahdy | Egypt | ApCut Co |
| Mohamed Gaber | Egypt | Agricultural Biotics |

| Full name | Country | Innovation title |
|---|----------------|---|
| Khaled Nagaty | Egypt | A public key cryptosystem and signature scheme based on numerical series |
| Sameh Abdellatif | Egypt | Smart Windows |
| Ahmed Rashed | Egypt | Civilizology Egypt |
| Elsayed Salama | Egypt | Glass composite for radiation protection and Dosimetry |
| Ayman Mohamed Salaheldin Abbas Hamed | Egypt | Autonomous device for cleaning photovoltaic solar panels utilising water capture |
| Ahmed Mohamed Alhady | Egypt | Construction management solutions on the cloud |
| Tarek Hatem | Egypt | TESSRA Technologies |
| Walaa Omar | Egypt | Production and commercialization of new/advanced materials for photovoltaics technologies |
| Ahmed Soltan | Egypt | Painless wearable device for continuous glucose monitoring for self-care |
| Fotouh Mansoor | Egypt | New polymeric monolithic stationary phases for chromatographic separation |
| Mahmoed Farouk Abdelkader | Egypt | Aquaitech: An AI powered real-time monitoring of water distribution networks |
| Mohamed Khaled Diab | Egypt | A novel natural microbial biocontrol agent against cotton leafworm |
| Piyush Joshi | India | Orthocrafts Innovations |
| Arvind Suresh Ambalapuzha | India | Flexmotiv Technologies Private Ltd |
| Soumalya Mukherjee | India | Tan90 Thermal Solutions Private Limited |
| Chirag Panchal | India | Enerlyf Innovations LLP |
| Aditya Suraj Shukla | India | Recycler – Saltech Design Labs Private Limited |
| Tharun Kumar Bharathan | India | ECOSTP Technologies (P) Ltd |
| Bonny Mukesh Dave | India | Trestle Labs |
| Adithya V S | India | Tvasta Manufacturing Solutions Pvt. Ltd. |
| Pranav Chopra | India | Crimson Healthcare Pvt Ltd |
| Dinesh Koka | India | Onward Assist |
| Mohammadshahid Abdulshakur Memon | India | UnboxRobotics Labs Private Limited |
| Anuya Nisal | India | BiolMed Innovations Private Limited |
| Saurabh Kumar Srivastava | India | Vidcare Innovations |
| Amit Modi | India | WitBlox |
| Bagus Widiatmoko | Indonesia | Zara Propertifarm Indonesia Company |
| Analia Tanuwidjaja | Indonesia | Kiddo.id |
| Achmad Prasetya | Indonesia | CV. Buntoro Karto Tani |
| Adjie Wicaksana | Indonesia | PT. Akselerasi Edukasi Internasional (Halofina) |
| Yolla Miranda | Indonesia | MASKIT |
| Florencia Florencia | Indonesia | Beyond Childhood |
| Maruf Kasim | Indonesia | Seaweed Pest Repellent (Usirikan) |
| Ashif Hujjatul Islami | Indonesia | KMTek |
| Rizky Ambardi | Indonesia | Hyperion Teknologi Indonesia |

| Full name | Country | Innovation title |
|----------------------------|----------------|--|
| Farid Rizayana | Indonesia | Tractorpack |
| Sander Purnama | Indonesia | Kumarati Tamanu Oil |
| Sriani Tutik | Indonesia | IITOYA |
| Achmad Fauzi Trinanda | Indonesia | Geofast, geopolymers fast-setting cement |
| I Wayan Lovayana | Indonesia | Digital Lontar Nusantara |
| Feras Kafiah | Jordan | SmartCure |
| Reyad Shawabkeh | Jordan | Vehicles CO2 Catalyzer |
| Almoayied Assayed | Jordan | FiltroMoya |
| Bayan Btoush | Jordan | HECOpress |
| Khaled Asfar | Jordan | Adjustable dual-rotor wind turbine |
| Abdulkarim Albanna | Jordan | TAKALAM |
| Saeed Albawab | Jordan | GREEN ON |
| Mayyas Al-Remawi | Jordan | NanoGold Pharma |
| Zaid Mahmoud | Jordan | Amman Dynamics |
| Bara Wahbeh | Jordan | AKYAS, multiple-use toilet bags |
| Abedalrhman Habashneh | Jordan | Decapolis |
| Faisal Alakayleh | Jordan | Skin Delivery Pharma |
| Mahmoud Hammoudeh | Jordan | Hamoudeh thermolab industries |
| Abeer Albashiti | Jordan | Larimar 'Beyond Intelligence' |
| James Nyabwa Ong'er Ochuka | Kenya | Ingenious Innovations |
| Brian Mwititi Mwenda | Kenya | Hope Tech Plus Limited |
| Mariita Ogega Ezekiel | Kenya | Solar Kijiji |
| Arhendt Mondy Mutsanzi | Kenya | PETALS |
| Frida Njogu-Ndongwe | Kenya | Afyakit |
| Wesley Micah Abuga | Kenya | MBUZI OKOA |
| George Kimani | Kenya | Arinifu Technologies Ltd |
| Kelvin Mulama | Kenya | Kitabu Africa Micro-finance |
| Catherine Wanjoya | Kenya | Silmak Agencies |
| Beth Koigi | Kenya | Majik Water Technologies |
| Prisca Wanja | Kenya | Mum and Baby Health |
| Lilian Jepkemboi Songok | Kenya | Gavopum, gluten-free bread and flour |
| Rebecca Nyambura Muiruri | Kenya | Beckler Ltd. |
| Paul Onyango Okumu | Kenya | Palo Hub Enterprises |
| Md Abdul Maleque | Malaysia | Eco-Tech |
| Vengadesh Periasamy | Malaysia | eProfiler Series |
| M. Effendy Ya'acob | Malaysia | AgroPV Integrated |
| Ahmad Jais Alimin | Malaysia | Apt Touch Sdn, a Retrofit Electronic Fuel Injection (EFI) Kit. |
| Mohd Zamri Ibrahim | Malaysia | Venigo Sdb Bhd |
| Saad Mekhilef | Malaysia | Highly efficient smart grid-tied transformer-less PV inverter for photovoltaic generation system |

| Full name | Country | Innovation title |
|--|----------------|---|
| Aida Firdaus Muhammad Nurul Azmi | Malaysia | Fav Food Industries |
| Muhamad Abd Rahman | Malaysia | DroneSS Tech |
| Anis Nurashikin Nordin | Malaysia | Low cost electronic detector for early dengue |
| Wan Fazlida Hanim Abdullah | Malaysia | Point-of-use soil sensor connected system for smart farming |
| Wahidah Hashim | Malaysia | WH Creation |
| Jasmine Lim | Malaysia | BLUBOX |
| Azrul Mohd Ariffin | Malaysia | Intelligent Cable Diagnostic System (INTELLECS) |
| Sarajul Fikri Mohamed | Malaysia | Cakna Asset Solutions Sdn Bhd |
| Adrian Jefte Elias | Mexico | Biomexanik |
| Alejandra Alvarado | Mexico | Asepro Ecologia |
| Alejandro Abarca Blanco | Mexico | Delee |
| Arturo Agustin Ortiz-Hernandez | Mexico | DryLab, high technology in food dehydration |
| Arturo S.C. Sanchez | Mexico | Nerixis |
| Carla Gabriela Guzman Moreno | Mexico | Growing Steps |
| Fátima María Isabel De los Santos García | Mexico | LUO SMART S.A de C.V |
| Gabriela Gutierrez | Mexico | GetIoT |
| Hector Eduardo Sanchez-Ibarra | Mexico | Vitagenesis SA de CV |
| Jose Manuel Aguilar | Mexico | SciCore Medical |
| Leonardo Chavez Guerrero | Mexico | Floated calcium carbonate |
| Leopoldo Napoleon Herrera Rodriguez | Mexico | Neptunus Biotech |
| Luis Rodriguez | Mexico | Grillo |
| Luis Enrique Hernandez | Mexico | Thermy |
| Orlando García | Mexico | 3D THEA |
| Bill Wild Zorrilla Aliaga | Peru | Consulting and advisory service to reduce the use of water in the transport of mining tailings of polymetallic provenance |
| Bryan Lucero | Peru | BioDynamols |
| Giannina Honorio | Peru | SELAMAT |
| Giuseppe Garibotto Saldaña | Peru | Quick eat! |
| Henry German Chico León | Peru | Solid and foliar organic fertiliser from waste from fan shell production systems |
| Lizeth López Portal | Peru | SANIPUCP, low-cost dry portable sanitary prototype |
| Monica Alexandra Chavez Llancay | Peru | Andino Art |
| Pamela Obando | Peru | Individual Molecules Laboratory-UPCH |
| Paulo Camilo Alberto Vela Anton | Peru | AgaLab: Innovation for health |
| Piero Mazizo Beltran | Peru | Mazbeng S.A.C. |

| Full name | Country | Innovation title |
|------------------------------|----------------|---|
| Priscilla Verástegui Sierra | Peru | Sustainable Fishery Trade |
| Raisa Sharlyng Lama Segura | Peru | Ento Piruw |
| Ricardo Rodríguez Torres | Peru | PIXED CORP |
| Robinson Lopez | Peru | AGROS |
| Alvin Chua | Philippines | X-LIPAD |
| Marvin Valentin | Philippines | AgriMachinery |
| Karen Santiago | Philippines | iSENSEu |
| Jeffrey Lavarias | Philippines | Cacao TOK |
| Maria Buena Ubaldo | Philippines | Commercial production and sale of high-quality coconut planting materials |
| Christian Paul de la Cruz | Philippines | BioSyn-F |
| Dennis de la Cruz | Philippines | VRAIN (Virtual reality applications for innovative learning) |
| Ryann Alimuin | Philippines | ELEXIR |
| Sarahme Corazon Esteban | Philippines | Gubatek |
| Efren Linan | Philippines | A biological and inexpensive method of depuration of shellfish |
| Joel Ilao | Philippines | VISON: Vision Systems |
| Ester Flores | Philippines | VeriSure |
| Jonathan Winston Salvacion | Philippines | DigiCon |
| Concepcion Ponce | Philippines | Algacon Aquafeeds Manufacturing |
| Arnold Lubguban | Philippines | BioPolyMade |
| Tshepo Mangoele | South Africa | Eco Invader Solutions |
| Nkateko Petra Makaringe | South Africa | NECSA |
| Maryam Amra Jordaan | South Africa | SA Rebuilders |
| Busisiwe Beryl Moloji | South Africa | Sawubona Mycelium |
| David Lokhat | South Africa | Gas-phase epoxidation of hexafluoropropene |
| Nondumiso Mthembu | South Africa | Organic Solutions |
| Sydwell Mcebo Sihlangu | South Africa | Low-cost technology for mushroom production |
| Warwick Alexander Thomson | South Africa | Sucrochem (Pty) Ltd |
| Mpho Kendy Madisha | South Africa | Bluepile |
| Ntombikayise Banda | South Africa | FundaBotix |
| Robert Michael Bosch | South Africa | Rubber Nano Products (Pty) Ltd |
| Stephanus Viljoen | South Africa | Novelquip Forestry (Pty) Ltd |
| Zinhle Ngidi | South Africa | Okuhle group trading as Igugu Clean Tech |
| Excellent Sithembiso Khumalo | South Africa | Lepsta |
| Krit Pongpirul | Thailand | Thai Health AI (THAI) Foundation |
| Wasan Pattara-atikom | Thailand | Traffy Waste |
| David Makarapong | Thailand | David Enterprise and development co., ltd. |
| Thanaphum Sukanjanasiri | Thailand | Jordsabuy |
| Supone Manakasettharn | Thailand | Needdeal |
| Thanapong Intharah | Thailand | TinyEpicBrains (tebs.io) |
| Pongtanawat Khemthong | Thailand | CARBANO |

| Full name | Country | Innovation title |
|-----------------------------|----------------|---|
| Salil Chanroj | Thailand | Duckweed To Go |
| Siwat Sangsritavong | Thailand | Dairy Plus |
| Suchada Sukrong | Thailand | Herb Gardian: from discovery to care |
| Alisa Vangnai | Thailand | M-Green, the insecticide-detoxifying enzyme |
| KhanittaRuttarattanamongkol | Thailand | Insect based sustainable proteins for food and feed industries |
| Boonlom Thavornnyutikarn | Thailand | SiliFab Technology |
| Natpapas Wiriyachaiporn | Thailand | NanoFlu – Rapid Influenza Screening |
| Tawin Iempridee | Thailand | BlackGold Formula 139: Thailand's most treasured anti-aging ingredient |
| Deniz Bas | Turkey | EOSLAB Biotechnology |
| Deger Ayata | Turkey | Aiatus Artificial Intelligence and Information Technologies Inc |
| Kivanc Menekseoglu | Turkey | Kangaroo Rehabilitation Software Limited Company |
| Volkan Ramazan Akkaya | Turkey | ThermoProc co. ltd. |
| Asli Zulug | Turkey | PACHA |
| Ahmet Erten | Turkey | Mikronos Biomedical Engineering and Consulting |
| Tuncay Yilmaz | Turkey | Indfoma Engineering Solutions |
| Aziz Satana | Turkey | Isolate of rhizobacteria from soil and use in sugar beet production |
| Mert Kılınçel | Turkey | Numericscomposites Engineering and Machine Ltd. |
| Abdullah Caliskan | Turkey | ACA Biomedical Solutions Health Industry and Trade Limited Company |
| Ahmet Onur Durahim | Turkey | PrincipAI |
| Fatih Kocabas | Turkey | Meinox |
| Onder Yargi | Turkey | Adens Technology |
| Emine Hande Karagedik | Turkey | Hamata Pharmaceuticals Food Chemical Industry and Trade Limited Company |
| Ozge Cevik | Turkey | ODC Research and Development Company |
| Thi Tai Nguyen Cao | Vietnam | Ket Gia Private Enterprise |
| Quang Vinh Tran | Vietnam | GFLife water filter |
| Van Nam Tran | Vietnam | Organic waste sorting resolution |
| Le Thi Nhi Cong | Vietnam | Oil polluted removal |
| Vu Cuong Le | Vietnam | Wind turbine for the poor |
| Xuan Thang To | Vietnam | Social Green Sciences |
| Thao Nguyen | Vietnam | Nguyen Khoi Green Joint Stock Company |
| Phu Ha Ho | Vietnam | Healthpro beer |
| Hoang Duong Nguyen | Vietnam | Center of Biophysics and Soft Matter Physics |
| Dai Hai Nguyen | Vietnam | NanoProfile Company Limited |
| Duong Nguyen | Vietnam | Low cost equipment for liposome synthesis |
| Thi Thu Huong Le | Vietnam | Areo VNUA |
| Huy-Dung Han | Vietnam | AirSENSE |
| Nhat Quynh Nguyen | Vietnam | IoT measurement devices warning salinization at Mekong Delta |

Global Challenges Research Fund Africa Catalyst

Africa Catalyst aims to strengthen professional engineering bodies in sub-Saharan Africa so that they can effectively promote the profession, share best practice and increase local engineering capacity to help drive development. This is supported by high-quality research focusing on expanding the evidence base for the importance of robust engineering institutions and the role they play in delivering sustainable growth, and mapping engineering capacity and diversity in the countries where grant funding is administered. The projects listed below were awarded in October 2019.

| Lead applicant | Organisation | Project title |
|------------------------------|--|---|
| Eng Osazoduwa Agboneni | Nigerian Institution of Mechanical Engineers | Forging Africa's future mechanical engineers |
| Naadiya Moosaje | WomEng | Capacity building for women in engineering bodies in West Africa |
| Immaculate Akello | Uganda Institute of Professional Engineers | Strengthening diversity and inclusion in Uganda's engineering sector |
| Eng Rotimi Famisa | Federation of African Engineering Organisations | Strengthening FAEO to support sub-Saharan African PEIs to deliver on their strategic objectives |
| Professor Jeff Smithers | South African Institute of Agricultural Engineers | Growing agricultural engineering in Africa: Supporting the operations and implementation of the strategic plan for AfroAgEng |
| Cecile Uwimana | Institution of Engineers Rwanda | Enhancing Rwanda's engineering workforce ecosystem through professional internships, women empowerment and adopting outcome-based engineering education |
| Ing Festus Oba Jones | Sierra Leone Institution of Engineers | Framework for harmonising engineering education and professional training in West Africa |
| Eng Dr Felicia Agubata | Association of Professional Women Engineers of Nigeria | SheEngineer – invent build it |
| Dr Martin van Veelen | Federation of African Engineering Organisations | Preparation of an infrastructure report for Africa south of the Sahara |
| Alain Claude Meyrick Jacquet | Institution of Civil Engineers South Africa | Publication of online courses on procurement, adjudication and continuing professional development materials |

Higher Education Partnerships in sub-Saharan Africa (HEP SSA)

This programme forms and strengthens relationships between academia and industry, aiming to ensure that the higher education system in sub-Saharan Africa produces engineers with the skills and knowledge required to meet the needs of industry and tackle local challenges. It also addresses the engineering skills shortage in sub-Saharan Africa and showcases engineering's role in driving economic development in the region. The projects listed below were awarded in September 2019.

| | Lead applicant, hub university | UK university partners | Spoke university partners | Industry partners | Project title |
|--------------|---|--|---|--|--|
| HEP SSA hubs | Professor Samuel Sackey, Kwame Nkrumah University of Science and Technology | Cranfield University, De Montfort University | Ho Technical University, Koforidua Technical University, Cape Coast Technical University, Kumasi Technical University | Desert Lion International Ltd, SAYeTECH, Investment Focus Ltd, Denco Foundry, QueenTech Initiative | Manufacturing hub for closing the skills gap between academia and industry |
| | Dr Paul Nnamchi, Enugu State University of Science and Technology | Northumbria University Newcastle | University of Nigeria Nsukka, Michael Okpara University of Agriculture, Alex Ekwueme Federal University Ndufu-Alike, Ebonyi State University, Abakaliki, – Institute of Management and Technology | EVEON Development Ltd, AGROEASY Nig. Ltd, Iyiukwu Local Government Development Centre, Isiuzo Local Government Area Council | Innovation and entrepreneurship centre for rural sustainable development: renewable energy, green materials, waste-to-energy and sustainable agriculture |
| | Professor Abiodun Aibinu, Federal University of Technology Minna, Nigeria | University of Huddersfield, Manchester Metropolitan University | Ladoke Akintola University of Technology (LAUTECH) Ogbomoso, Nigeria, IBB University TFTU, Ibrahim Babangida University, Lapai Nigeria, The First Technical University Ibadan, Nigeria | Siemens Automation Company, Scientific Equipment Development Institute, Ingenium Digital Nigeria Limited, SUSEJ Nigeria Limited and Basic Electrical Services Limited, Nigerian Communications Satellite Limited | Artificial intelligence for clean energy (AI4CE) development |
| | Dr Kelleh Gbawuru-Mansaray, University of Sierra Leone | Imperial College London | Universite Cheik Anta Diop (UCAD), Universite Felix Houphouet Boigny (UFHB), University of Ghana | Guma Valley Water Company (GVWC), Electricity Generation and Transmission Company (EGTC) and Hastings P3M Consulting (HP3M) | Integrated research into utility services and improving the urban environment (InRUE) |

| | Lead applicant, hub university | UK university partners | Spoke university partners | Industry partners | Project title |
|--------------|--|--|--|--|--|
| HEP SSA hubs | Professor Henry Alinaitwe, Makerere University, Uganda | University of Leeds | Busitema University, Kyambogo University, Ndejje University, Mbarara University of Science and Technology | Uganda Electricity Generation Company Ltd (UEGCL), Uganda National Roads Authority, National Water and Sewerage Corporation, Uganda Broadcasting Corporation, Uganda National Bureau of Standards, Joint Medical Store, Kiira Motors Corporation, Uganda Communications Commission | Strengthening university industry partnerships for research, academic excellence and innovation |
| | Dr Francois Nsengiyumva, Institut D'Enseignement Supérieur, Rwanda | University of Aberdeen | The University of Ibadan, The University of Botswana, The Catholic University of Cameroon | M. U. A General Engineering Company LTD, Ateliers Economat General de Ruhengeri | Strengthening academia-industry linkage and research space in the area of civil engineering for food security in sub-Saharan Africa |
| | Dr Getachew Bekele, Addis Ababa University of Technology | University of Oxford, Dept Engineering Science | Bahir Dar University, Strathmore University, Technical University Mombasa | Ethiopian Electric Utility, Bahidar Textile Share Company, Kenya Ferry Services | Industry-academia partnership in the East African power and energy sector for capacity building |
| | Professor Simiyu Sitati, Moi University | University of Leeds, University of Highlands and Islands | Technical University of Mombasa, Murang'a University of Technology, Busitema University, Egerton University | Konza Technopolis Development Authority, Rivatex EA | Promotion of academia-industry partnership for enhancement of infrastructural and human capacity building through engineering education training |
| | Dr Alfred Maluwa, Malawi University of Science and Technology | The University of Strathclyde | Lilongwe University of Agriculture and Natural Resources, Mbeya University of Science and Technology, Central University of Technology | Malawi Bureau of Standards, Illovo Sugar Limited, Energy Generating Company, Castel, La-Farge, Ministry of Health, Cornerstone Trust Company | Strengthening engineering education and skills among faculty and students through university – industry partnership |

| | Lead applicant, hub university | UK university partners | Spoke university partners | Industry partners | Project title |
|--------------|---|---|---|---|--|
| HEP SSA hubs | Professor Frank Kavishe, University of Namibia | University of Cambridge | Durban University of Technology, University of Nairobi, Addis Ababa Institute of Technology | Namibia Water Corporation, Namibia Tantalite Investment Mines, Namibia Ports Authority, Impact Free Water | Enhancing the role of engineers in translational research and entrepreneurship |
| | Dr Grivin Chipula, Lilongwe University of Agriculture and Natural Resources | Cranfield University | Mzuzu University, The University of Malawi – The Polytechnic, Malawi University of Science and Technology, Sokoine University of Agriculture, Jomo Kenyatta University of Agriculture and Technology | The Department of Irrigation, Orifice Irrigation Water Supply, Lilongwe Water Board | Establishing and strengthening engineering academia-industry partnerships in Malawi to enhance sustainable agricultural production and economic development |
| | Dr Wilson R. Nyemba, University of Zimbabwe | University of Leicester | Harare Institute of Technology, National University of Science and Technology, Chinhoyi University of Technology, University of Johannesburg, Namibia University of Science and Technology, Universidade Eduardo Mondlane | Econet Wireless, Masimba Holdings, SINET Africa, Pretoria Portland Cement, Chamber of Mines of Zimbabwe, Ministry of Higher and Tertiary Education, Science and Technology Development, Zimbabwe Institution of Engineers, Postal and Telecommunications Regulatory Authority of Zimbabwe | Strengthening ties and bridging the gap between industry and academia using a systems-thinking approach for capacity building and sustainability through research, entrepreneurship and innovation |
| | Professor Chris Fowler, University of E'Swatini | University of Essex, Glasgow Caledonian University, Canterbury Christ Church University | University of Stellenbosch, The National University of Science & Technology, The National University of Lesotho' | Palfridge Ltd, Eswatini Postal and Telecommunications Corporation, Eswatini Electric Company, TouchIT Technologies, TECHSD Pty. Ltd, Eswatini's Royal Science and Technology Park | K4: A framework for creating, transferring, commercialising and exchanging knowledge within and between sub-Saharan universities and industries |

Africa Prize for Engineering Innovation

The Africa Prize for Engineering Innovation aims to stimulate, celebrate and reward innovation and entrepreneurship in sub-Saharan Africa. A shortlist of up to 16 innovators is selected to receive eight months of remote and in-person business and commercialisation training, mentoring and support. Following the training, four finalists are selected and invited to pitch at a final event in Africa, where a winner is chosen; all four finalists receive cash prizes.

| Name | Innovation | Country |
|-----------------------------------|---------------------------|----------------|
| 2019 winner | | |
| Neo Hutiri | Pelebox Smart Lockers | South Africa |
| 2019 finalists | | |
| Roy Allela | Sign-IO | Kenya |
| Chukwunonso Arinze & Princess Oti | KAOSHI | Nigeria |
| Anne Rweyora | Smart Havens Africa | Uganda |
| 2020 shortlist | | |
| Adrian Padt | DryMac | South Africa |
| Aisha Raheem | Farmz2U | Nigeria |
| Bernice Dapaah | EcoRide | Ghana |
| Catherine Chaima | CATHEL | Malawi |
| David Tusubira | Remot | Uganda |
| Isaac Sesi | GrainMate | Ghana |
| Jack Oyugi | Aquaprotein | Kenya |
| Josephine Godwyll | Lab and Library on Wheels | Ghana |
| Timothy Kayondo | Eco Water Purifier | Uganda |
| Richard Arwa | CIST Ethanol Fuel | Kenya |
| Charlette N'Guessan | BACE API | Ghana |
| Samuel Rigu | Safi Organics | Kenya |
| Tracy Kimathi | Tree_Sea.mals Mini-Grid | Kenya |
| Victor Boyle-Komolafe | GIVO | Nigeria |
| Dr William Wasswa | PapsAI | Uganda |

Africa Prize for Engineering Innovation alumni grants programme 2019|20

Africa Prize alumni grants 2019|20: service delivery

A small grant to give Africa Prize alumni access to professionals in the fields of law, HR, finance and communications.

| Name | Innovation | Country |
|--------------------|---------------------|--------------|
| Dr Askwar Hilonga | Nanofilter | Tanzania |
| Kenneth Guantai | Auto-Truck E.A Ltd | Kenya |
| Andre Nel | EcoV | South Africa |
| Sesinam Dagadu | SnooCODE | Ghana |
| Chukwunonso Arinze | KAOSHI | Nigeria |
| Anne Rweyora | Smart Havens Africa | Uganda |
| Brian Mwenda | The Sixth Sense | Kenya |
| Collince Oluoch | Chanjoplus | Kenya |

Africa Prize alumni grants 2019|20: travel and training grants

A small grant to give Africa Prize alumni opportunities to travel to attend conferences, exhibitions, trainings and meetings with new potential partners and investors.

| Name | Innovation | Country |
|----------------------------|------------------------------|--------------|
| Arnold Achiri | Traveler | Cameroon |
| Collince Oluoch | ChanjoPlus | Kenya |
| Lawrence Okettayot | Sparky Dryer | Uganda |
| Emeka Nwachinemere | Kitovu | Nigeria |
| Kenneth Guantai | Auto-Truck E.A Ltd | Kenya |
| Taita Ngetich | Illuminum Greenhouse | Kenya |
| Nges Njungle | Muzikol | Cameroon |
| Ifediora Ugochukwu | iMeter | Nigeria |
| Shalton Mothwa | AEON Power Bag | South Africa |
| Monicah Wambugu | Weza Ventures | Kenya |
| Professor Emmanuel Bobobee | Mechanical Cassava Harvester | Ghana |
| Muzalema Mwanza | Safe Motherhood Alliance | Zambia |
| Brian Mwenda | Sixth Sense | Kenya |
| Princess Oti | KAOSHI | Nigeria |
| Zara Abbey | SnooCODE | Ghana |
| Andre Nel | EcoV | South Africa |
| Daniel Taylor | Dent Agrisystems | Ghana |
| Edmand Aijuka | KOPS | Kenya |
| Dr Hilonga Askwar | Nanofilter | Tanzania |
| Dr Lukas du Plessis | Protea Machine Tools | South Africa |
| Neo Hutiri | Pelebox Smart Lockers | South Africa |

Africa Prize alumni grants 2019|20: business grants

A small grant to support Africa Prize alumni to scale up their businesses.

| Name | Innovation | Country |
|-----------------------|---|--------------|
| Emeka Nwachinemere | Kitovu | Nigeria |
| Ifediora Ugochukwu | iMeter | Nigeria |
| Paul Matovu | Vertical and Micro Gardening | Uganda |
| Felix Kimaru | Totohealth Limited | Kenya |
| Kenneth Guantai | Auto-Truck E.A Ltd | Kenya |
| Chukwunonso Arinze | KAOSHI | Nigeria |
| William Muthoka | The Smart Brooder | Kenya |
| Ian Mutamiri | The Purple Early Engineering Kit (PEEK) | Zimbabwe |
| Collins Saguru | Scilab Supplies | South Africa |
| James Ochuka | Ingenious Innovations – JuakaliSmart | Kenya |
| Brian Mwenda | Sixth Sense | Kenya |
| Olufemi Odeleye | The Tryctor | Nigeria |
| Elizabeth Kperrun | Zenafri | Nigeria |
| Kahitouo Hien | FasoPro | Burkina Faso |
| Beth Koigi | Majik Water | Kenya |
| Michael Asante-Afrifa | Science Set | Ghana |
| Edwin Inganji | Usalama Technology | Kenya |
| Neo Hutiri | Pelebox Smart Lockers | South Africa |
| Okettayot Lawrence | Sparky Dryer | Uganda |

Engineering X

Engineering X is an international collaboration that brings together some of the world's leading problem-solvers to address the great challenges of our age. Its global network of expert engineers, academics and business leaders are working in partnership to share best practice, explore new technologies, educate and train the next generation of engineers, build capacity, improve safety, and deliver impact. It is running four programmes.

Safer Complex Systems

All around the world people rely on critical infrastructures to survive, stay safe and maintain a good quality of life. Much of this infrastructure, for example food and water supply, healthcare, housing, transportation and communication, is made up of complex systems. Safer Complex Systems aims to enhance safety and resilience of these complex infrastructure systems globally by supporting the most impactful interventions where they are most needed. In its first year the programme has been convening and building a community of interdisciplinary, global experts from across sectors through workshops and consultations to better understand the challenges that complex systems pose, and has commissioned the University of York to conduct a Global Review to systematically map the same. This initial study will be supplemented with further work to collectively comprise a *Global Foresight Review on the Safety of Complex Systems*.

Safer End of Engineered Life

The Engineering X Safer End of Engineered Life Mission aims to achieve safer and more sustainable decommissioning and waste disposal. It is run in partnership with the Lloyd's Register Foundation. In its first year, the programme has focused on improving safety in the decommissioning of offshore structures and ships where they are most prevalent and present the biggest threat to safety globally. Six projects in the UK and overseas are now in progress to tackle the complex social, environmental and engineering challenges involved of decommissioning ships and offshore structures. Grants of between £50,000 to £200,000 have been awarded.

| Name | Organisation | Partners | Project name |
|---------------------------|-----------------------------------|---|--|
| Professor Fraser Sturt | University of Southampton | Advisian (UK) University tec de Monterrey (Mexico) University of Teramo (Italy) NGO Shipbreaking Platform (Belgium) | Safer decommissioning of offshore infrastructure and ships: establishing a global baseline and raising awareness to help deliver safety improvements |
| Dr Arun Dev | Newcastle University in Singapore | Bangladesh University of Engineering and Technology (Bangladesh) Kabir Steel Limited (Bangladesh) | Safety envelope for ship recycling practices in Bangladesh: hazard identification and risk evaluation |
| Professor Omar bin Yaakob | Universiti Teknologi Malaysia | R.L.Kalthia Ship Breaking Pvt. Ltd. (India) Newcastle University in Singapore (Singapore) Liverpool John Moores University (UK) Insitut Teknologi Bandung (Indonesia) Sea Sentinels Pte Ltd (Singapore) PetroVietnam University (Vietnam) Hanoi University of Science and Technology (Vietnam) Mahidol University (Thailand) | Safe and sustainable decommissioning of offshore structures taking into consideration the peculiarities of the ASEAN & South Asia regions |
| Lee Allford | Energy Institute | Regional Maritime University (Ghana) University of Strathclyde (UK) SEIP 7 (Brazil) Liverpool John Moores University (UK) | Managing the structural integrity of offshore petroleum structures during decommissioning |
| Andrew Stephens | Sustainable Shipping Initiative | | The ship recycling transparency initiative |
| Ingvild Jenssen | NGO Shipbreaking Platform | Bangladesh Environmental Lawyers Association (BELA) (Bangladesh) | Ensuring the rights of communities and workers affected by shipbreaking |

Engineering skills where they are most needed

The Academy and the Lloyd's Register Foundation have launched a grant programme that aims to fund high impact, innovative projects with disruptive potential for developing domestic engineering capability to build, operate and maintain critical infrastructures safely and/or develop skills and capacity to adopt emerging technologies in low income and emerging economies across the world. This year the programme carried out the *Global Engineering Capability Review*, a global engineering index of 99 countries' ability to conduct key engineering activities in a safe and innovative way.

| Lead applicant organisation | Lead applicant country | Partner country | Project title |
|---|------------------------|-----------------|---|
| Smart Havens Africa | Uganda | | Skilling young women in Uganda through housing innovation |
| Institute of Cybersecurity and Information Assurance (CYBERGHANA) | Ghana | | NYCSTEP: S-CSOC-Cyber Lab project |

| Lead applicant organisation | Lead applicant country | Partner country | Project title |
|---|------------------------|------------------------|--|
| Technical University of Kenya, Murangá University of Science and Technology | Kenya | | Prior exposure to engineering through invention education, explore café and pre-college sessions in Kenya |
| Clintonel Innovation Centre (CIC) | Nigeria | | Engineering for Industry (E4I) |
| SeeSD (Science Education Exchange for Sustainable Development) | Senegal | | Kër Science |
| Botswana International University of Science and Technology | Botswana | Zambia | Collaborative open design and manufacturing (CODM) to enhance capacity in product design and manufacture |
| Office of the Minister of State for Administrative Reform | Lebanon | | Improving operation and maintenance capacities of solid waste management contractors in Lebanon |
| 1Billion Africa (1BA) | Ghana | | STEM4Africa (S4A) project |
| WomEng (Women in Engineering) | South Africa | | Providing 4th industrial revolution skills for the engineering industry |
| Institute of Investment and Construction Management, National University of Civil Engineering | Vietnam | Laos, Cambodia, and UK | Additive e-platform for digital skills development in construction |
| RedR, UK | UK | Uganda | Enhancing engineering skills for Ugandan engineering professionals to contribute to effective humanitarian response. |
| Stellenbosch University | South Africa | Zambia | A fire-safe Africa (AFSA) – Creating fire engineers for Africa's needs |
| Ethiopian Society of Chemical Engineers | Ethiopia | | Innovative and sustainable management of industrial parks in Ethiopia (ISMIP-Ethiopia) |
| Universiti Teknologi Malaysia | Malaysia | Indonesia | Raising the quality of engineering education in Indonesia |
| Chumbaka Sdn Bhd | Malaysia | | Promoting STEM education and closing the digital divide among primary school students in Malaysia through the Junior Innovate programme |
| National Center for Sustainable Transportation Technology | Indonesia | | Capacity building and national standard development for electric vehicle's battery safety in Indonesia |
| Strathmore University Energy Research Centre | Kenya | | Solar photovoltaics training for technicians in rural Kenya |
| Nepal Communitere | Nepal | UK | Building high tech engineering and design skills at Nepal's first FabLab |
| University of Pretoria | South Africa | Rest of Africa | Open-source CAD for Africa |
| National Construction Authority | Kenya | UK | Kenya construction quality and skills improvement programme (KCASQIP) |
| Universidad Cooperativa de Colombia | Colombia | | SDGs-challenges based learning in engineering curricula at the Universidad Cooperativa de Colombia: Enhancing the engineering skills in a developing country |

Transforming systems through partnership

The Transforming Systems through Partnership programme, previously known as the Industry-Academia Partnership programme, supports university engineering departments in low and middle-income countries partnering with industry and stakeholders to find solutions to society's most pressing sustainable development challenges. It is run through the Newton Fund.

| | Lead university | UK university | Industry partner(s) | Project title |
|-----------------|---|--|---|---|
| Colombia | Universidad Industrial de Santander | The Open University | Nanofique Limited, Alianza Del Humea | Smart coating systems on natural fibres for wastewater treatment |
| | Universidad Cooperativa de Colombia | Heriot-Watt University | Aquatera Ltd, COTECMAR, Smart Hydro Power Ltd | Enhancing aquatic renewable energy: technology design and adaptation programme for Colombia |
| | Universidad Nacional de Colombia | University of York | Team Foods | Valorisation of urban used cooking oils by transformation into value added oleochemicals . Study case for Bogota, Colombia |
| | Universidad de los Andes, Universidad del Rosario | Earlham Institute | PSL SAS | Developing capabilities in high-performance digital infrastructure for data intensive scientific innovation in Colombia |
| | National University of Colombia | University of Strathclyde | Compañía de Empaques SA | New environmentally-friendly natural fibre composite materials for low-power wind turbine blades for rural areas |
| | Universidad Nacional de Colombia | Heriot-Watt University, University of Nottingham | Ecopetrol SA, Equión Energía Limited | Asphaltene dynamics at the pore-scale and the impact on oil production at the field-scale |
| | Universidad Industrial de Santander | Northumbria University | Gematech SAS | Development of a small-scale combined waste-to-bioenergy system with solar organic Rankine cycle for heat and power production in rural areas of Colombia |
| | Universidad EIA | The Welding Institute | Metro de Medellin | Implementation of friction stir welding in the Colombian rail transport sector |
| | Escuela Colombiana de Ingeniería Julio Garavito | University College London | Prótesis Avanzadas | Prexhand project: affordable and modular prosthetics and exoskeletons for hand rehabilitation and assistance |
| | Universidad EIA | City, University of London | Shaio Clinic, Tekcapital | Collaborative innovation cells: towards an effective technology development platform that aligns the market pull with the technology push through a collaboration between academia and industry and the implementation of agile methodologies |
| Universidad EIA | University College London | EPM, ERCO | Transactive energy Colombia initiative | |

| | Lead university | UK university | Industry partner(s) | Project title |
|----------|--|-------------------------------|---|--|
| Colombia | Universidad Pontificia Bolivariana | Newcastle University | GeoMares S.A.S, Parques Nacionales Naturales de Colombia, Centro de Investigaciones Oceanograficas e Hidrograficas del Caribe | Using remotely piloted aircraft systems as tools for coral reef monitoring, management, and stakeholder engagement |
| | Universidad del Valle, Universidad Autonoma de Occidente | Loughborough University | Kyrios SAS | Evaluation of heavy metals in freshwater to prevent and alert human consumption |
| | Escuela Colombiana de Ingeniería Julio Garavito | Cardiff School of Engineering | Ingeniería en Galvanizados de Occidente SAS, Sexton Materials Research Ltd | Design and additive manufacturing of a new composite al-calamine material through a bilateral collaboration between Colombian and UK industry and academia |
| | Universidad Nacional de Colombia – Medellín Campus | University of Leeds | Mineros SA | Building research and innovation capabilities for the sustainable exploitation of black sands as a source of rare earth elements |

| | Lead university | UK university | Industry partner(s) | Project title |
|-------|--|------------------------------|--|---|
| India | Hindustan Institute of Technology | London South Bank University | NUGENIX | Development of a mobile wall climbing robot for the internal non-destructive testing of storage tanks and for project based learning on mechatronics programmes |
| | Indian Institute of Technology Indore, IIT Bombay, Maharashtra Institute of Technology, Acropolis Institute of Technology and Research | University of Cambridge | Mahindra and Mahindra Ltd, Grind Master Machines Pvt Ltd, AceMicromatic MIT, Enman Automation Pvt Ltd, ADW Technologies Pvt . Ltd, Dimension NXG, Pragati Engineering Works | Industry-academia consortium for digitisation in small and medium enterprises |
| | Vellore Institute of Technology, PSG College of Technology | Loughborough University | Valeo GEEDS | Design and development of a four-wheeled electric vehicle for research, teaching and outreach in Tamil Nadu, India |
| | Vellore Institute of Technology | Cranfield University | Tata Lockheed Martin Aerostructures Ltd | Enhancing research-based learning and teaching on advanced materials and manufacturing technologies for aerospace sectors in India and UK |
| | Gandhi Institute of Technology and Management, Jadavpur University | Aston University | Precision Transmission Chain, Neogi Technologies, Research Pvt Ltd, Kusari Enterprise, Klystron Electronics, Fenstar Industries, IB Engineering Private Ltd, AE Aerospace, CoMech Metrology Ltd, Composite Braiding, Foxwood Diesel, Freshlook Solutions Limited, Advanced Engineering | Circular economy adoption within small and medium sized enterprises in India and the UK |
| | KIET Group of Institutions | Cranfield University | MicroMaterials Limited, Energy4U, Larsen and Toubro Limited | Indo-UK led curriculum development through sustainable materials and manufacturing for the future |
| | National Institute of Technology Karnataka, Basaveshwar Engineering College | University of Leeds | ACC Limited, Mott MacDonald | Collaborative research and capacity building on climate resilient concrete for marine environment |
| | PSG College of Technology | Newcastle University | PSG Industrial Institute | Digital literacy: shaping industry 4.0 engineering curriculum via factory pilot-demonstrators |

| | Lead university | UK university | Industry partner(s) | Project title |
|--------|--|--------------------------------------|---|---|
| Jordan | German Jordanian University | Newcastle University | Innovation, Business, Technology, Entrepreneurship, Creativity for the Arab Region | Innovative peer to peer electricity sharing towards the development of smart and cooperative microgrids |
| | Al-Balqa' Applied University | Northumbria University | New World for Water Technology, Al-kawkabah Alkhadhra for Renewable, Aquamcorp Water Services | Improved waste water treatment technology integrating renewable energy for arid regions |
| | University of Jordan, The Hashemite University | University of Sheffield | The Public Warehousing Company – Agility Jordan | Developing an international warehouse assessment scheme |
| | Royal Scientific Society | University of Bath | Kingdome Concrete Company | Waste wash water recycling in ready mix concrete plants |
| | Jordan University of Science and Technology | University of Sussex Business School | Hikma Pharmaceuticals LLC | Operations management in the pharmaceutical industry |
| | University of Petra | Salford University | Jordan Tourism Board, Bentley Systems Incorporated | IT and conservation of traditional architecture and heritage |

| | Lead university | UK university | Industry partner(s) | Project title |
|--------------|---|-----------------------------|--|---|
| South Africa | University of the Witwatersrand (lead), University of the Western Cape, Tshwane University of Technology | University of Cambridge | Council for Scientific and Industrial Research, KDG Logistics, Unitrans, Michelin, Transnet, Volvo | Towards sustainable road freight – UK and South Africa joint action |
| | University of KwaZulu-Natal, University of Stellenbosch, Central University of Technology, University of Pretoria | University of Bath | SANCOLD, Water Resource Commission, SANRAL | Development of multi-institutional research collaboration and capacity development for modernising flood risk assessment practice in South Africa |
| | University of Cape Town | University of Warwick | Carmien Tea, New Food-Innovation Ltd | Virtual flavour: research and education for a step-change in IT business innovation |
| | University of Cape Town, Central University of Technology South Africa | Edinburgh Napier University | National Home Builders Registration Council | Research informed teaching of sustainable development in South Africa: the case of 'local' building materials and their environmental impacts |

| | Lead university | UK university | Industry partner(s) | Project title |
|-----------------------|---|----------------------------|--|--|
| Thailand | King Mongkut's University of Technology North Bangkok, Mahidol University | Swansea University | Suksomboon Group Ltd | Production of medium chain length polyhydroxyalkanoates (MCL-PHAS) from palm oil |
| | Chulalongkorn University | Kingston University London | Pong Yaeng Agriculture, Anamad Ltd, UK | Biochar from macadamia nut shells for removal of emerging pollutants in wastewater |
| | King Mongkut's University of Technology North Bangkok | Imperial College London | SCG | CO2 utilisation: advanced membrane technology in clean DMC production |
| | Mahidol University | University College London | Prodo.AI, ProGaming, CourseSquare, Trinity Roots, Robolingo (Zwiz.AI) | Automated software engineering for Thailand software industry |
| | Mahidol University | University College London | Office of Transport and Traffic Policy and Planning, London Underground Limited, Transport for London, SRT Electrified Train Co Ltd | Smartmetro: smart metro operations enhancement through data analysis |
| | King Mongkut's University of Technology Thonburi | University of Sheffield | Tesco Lotus | Smart farm planning and monitoring system |
| | Prince of Songkla University | Queen's University Belfast | Green Lizard Technologies, Fiberight | Waste management and valorisation in the Thai Gulf islands |
| Maharakham University | University of Leeds | BCE | Translating physicochemical properties of Thai rice at its microstructural level into formulation of functional food rice-based products | |

| | Lead university | UK university | Industry partner(s) | Project title |
|--------|----------------------------------|------------------------|----------------------------|---|
| Turkey | Piri Reis University | Heriot-Watt University | Logosoft | Preparing Turkish SMEs for industry 4.0 |
| | Sakarya University | Coventry University | Oztiryakiler Co | Design and construction of a prototype industrial oven for better heat distribution and energy efficiency |
| | Middle East Technical University | University of Aberdeen | Parabol | Evaluation of the public transportation performance and accessibility based on smart card data |

UK-China Urban Flooding Research Impact programme

Under its remit as a delivery partner in the UK-China Newton Fund, the Academy is partnering with the Chinese Academy of Engineering to implement the UK-China Urban Flooding Research Impact programme. This programme aims to support impactful research and enhance the impact of existing research in urban flooding in both countries by encouraging bilateral collaboration between academics and government as well as wider industry.

| UK academic and industry partners | Chinese academic and industry partners | Chinese government partner | Project title |
|--|--|---|---|
| Swansea University, HR Wallingford | Nanjing University of Information Science and Technology, Nanjing Hydraulic Research Institute, Naruida Technology | Guangzhou Meteorological Observatory | Early warning system for urban flooding in Chinese mega cities using advanced active phased array radar |
| University of Exeter, Jacobs, Sweco | Tsinghua University, NC MEDRI, Suzhou University of Science and Technology Co Ltd | Torbay Council, Local authorities of Doumen (Zhuhai), Ningbo, Pingxiang, Qingdao and Suzhou | ESPRIT: embedding strategic planning in flood resilient cities |
| Cardiff University, Wallingford Hydro Solutions | Wuhan University, Beijing Tepia Technology Company Ltd | Hubei Provincial Department of Water Resources | Studies on disaster-causing mechanisms and disaster reduction countermeasures of urban flooding in China and the UK |
| SOAS University of London, HR Wallingford | Shanghai Climate Change Research Centre, HR Wallingford China | Shanghai Municipal Development and Reform Commission | Developing engineering options for mitigating future compound flooding risks in Shanghai by transferring the expertise of UK TE2100 |
| Cardiff University, University of Cambridge, Mott MacDonald Ltd | Hohai University, Ningbo Hydraulic Waterpower Planning and Designing Research Institution | Ningbo Municipal Water Conservancy Bureau | Dynamic assessment and intelligent tracking of coastal city flood risk |
| Newcastle University, Environmental Measurements Ltd | Nanjing Hydraulic Research Institute, Beijing Golden-Water YanyuSci&Tech Co Ltd | Shenzhen Water Affairs Bureau, Huizhou Hydrographic Bureau | A virtual collaboratory for flood forecasting, flood warning and decision-making under uncertainty in urban flood management |
| Centre for Ecology & Hydrology, Wallingford HydroSolutions, Fathom | Changjiang River Scientific Research Institute, Beijing Sinfotek Technology Co, Ltd | Wuhan Water Affairs Bureau | Enhancing China-UK technical co-operation, knowledge sharing, and business opportunities in urban flood management and intelligent urban water network monitoring |

Distinguished Visiting Fellowships and Missions in Turkey

The Distinguished Visiting Fellowships and Missions in Turkey programme is a component of the UK Newton Fund, which aims to develop science and innovation partnerships to promote the economic development and social welfare of developing countries. The scheme provides funding so that an engineering department at a Turkish university can host a Distinguished Visitor or group of Distinguished Visitors from a UK academic centre of excellence for a visit lasting up to one month.

| Award holder | Distinguished Visitor | Area of collaboration |
|--|---|---|
| Dr Yasanur Kayikci, Turkish-German University | Dr Nachiappan Subramanian, University of Sussex; Dr Manoj Dora, Brunel University; Professor Kulwant Pawar, University of Nottingham; Professor Samir Dani, University of Huddersfield; Dr Mukesh Kumar, University of Cambridge; Professor Michael Bourlakis, Cranfield School of Management; Professor Vikas Kumar, University of the West of England | Perishable food cold chain logistics in Turkey |
| Professor Ilker Fatih Kara, Mersin University | Professor Ashraf Ashour, University of Bradford | FRP composites for durable infrastructures in Turkey |
| Dr Tacha Serif, Yeditepe University | Professor George Ghinea, Brunel University London | 3D software mapping for osteoarthritis pain self-management in older population |
| Professor Kadriye Tuzlakoglu, Yalova University | Dr Helena Azevedo, Queen Mary University of London | Molecularly engineered biomaterials for the treatment of diabetic wounds |
| Dr Ozlem Bicen Unluer Anadolu University, | Dr Gyorgy Szekeley, University of Manchester | Clean water via nanomaterials-enabled sustainable purification |

Distinguished Visiting Fellowships

The Distinguished Visiting Fellowship scheme provides funding for an engineering department in a UK university to host a senior academic from an overseas academic centre of excellence for up to a month. The scheme promotes sharing of the latest developments and allows the participating organisations to discover common and complementary skills and initiatives that could lead to future collaborations.

| Award holder | Distinguished Visitor | Area of collaboration |
|--|--|--|
| Professor Sondipon Adhikari, Swansea University | Professor Ranjan Ganguli, Indian Institute of Science | Uncertainty quantification of helicopter aeroelastic stability using deep learning |
| Dr Ayman Bakry Attya, University of Huddersfield | Dr Jose Luis Dominguez-Garcia, Catalonia institute for energy research | Renewable power plants and novel grid dynamics: control, integration and impacts |
| Dr Yun Bai, University College London | Professor Surendra P Shah, Northwestern University | Enhancing the properties of low-carbon cementitious materials with nano-materials |
| Professor Chris Bowen, University of Bath | Dr Vijay Kumar Srivastava, Indian Institute of Technology | Piezoelectric sensor using graphene nano-platelet filled carbon fibre dielectric elastomers |
| Dr Stephen Coupe, Coventry University | Professor William Hunt, North Carolina State University | A task force for improving water management in drought affected Cape Verde |
| Dr Colm Durkan, University of Cambridge | Professor Jessica Krogstad, University of Illinois at Urbana-Champaign | A collaborative approach to characterisation of advanced surfaces: probing functionality, chemistry and microstructure |
| Professor Massimiliano Gei, Cardiff University | Professor Luis Dorfmann, Tufts University | Bioactuation in soft robotics |
| Professor Yakun Guo, Bradford University | Professor Dong-Sheng Jeng, Griffith University | Investigation of wave-induced dynamic seabed response and liquefaction around a mono-pile foundation |
| Dr Hadi Hedari, University of Glasgow | Professor Mehrorang Ghaedi, Yasouj University | Ultrasensitive electrochemical sensors for simultaneous determination of gallic acid and uric acid in human urine and fruit juices |
| Dr Zushu Li, University of Warwick | Professor Geoffrey Brooks, Swinburne University of Technology | Future development for sustainable steel manufacturing |
| Professor Geyong Min, University of Exeter | Professor Tarek El-Ghazawi, The George Washington University | Data-driven computer modelling and task scheduling for high-performance computing |
| Professor Michael Reece, Queen Mary University of London | Professor Junyou Yang, Huazhong University of Science and Technology | Fabrication and thermoelectric properties of SnTe-based thermoelectric materials |
| Professor Wenmiao Shu, University of Strathclyde | Professor Wei Sun, Drexel University | Biofabrication for future healthcare |
| Professor Sarah Spurgeon, University College London | Professor Ian Peterson, Australian National University | Exploring recent advances in quantum control theory |
| Dr Kezhi Wang, Northumbria University | Professor Wei Xu, National Mobile Communications Research Lab | MEC based MmWave MIMO revolution to 5G/ B5G applications |
| Gabrielle Orbaek White, Swansea University | Professor Juan Lucena, Colorado School of Mines | Transforming engineering education |

| Award holder | Distinguished Visitor | Area of collaboration |
|---|--|--|
| Dr Hongwei Wu, University of Hertfordshire | Professor Xiaoze Du, North China Electric Power University | Heat transfer fluid for high efficient solar energy utilisation: molecular dynamic approach and experimental study |
| Professor Haito Ye, University of Leicester | Professor Changzhi Gu, Chinese Academy of Science | Metamaterials perfect absorber based on phase-change materials |
| Professor Ian Hugh White, University of Cambridge | Professor Tianhong Cui, University of Minnesota | Polymer nanoimprinting for optical waveguides |
| Dr Yuqing Zhang, Aston University | Professor Randy West, Auburn University | Multiple-component binder system design for 100% recycling of reclaimed asphalt pavement |

Global Grand Challenges Summit 2019 Follow-up Programmes

The Global Grand Challenges Summit 2019 launched the second series of summits jointly hosted by the UK, US and Chinese academies of engineering, inspired by the 14 Grand Challenges for Engineering. These awards were made to student teams formed at the Global Grand Challenges Summit 2019, which allowed them to continue to work on their innovation.

| Lead applicant name | Institution | Project name | Description |
|----------------------------|---------------------------------|--|---|
| Esli Belshi | University of Strathclyde | Battleship | An innovative approach to ocean oil spills cleaning |
| Lisa Rossi | University of Cambridge | SoundOFF | Selective noise cancelling technology together with artificial intelligence to reduce noise pollution at workplaces |
| Zhiqi Wang | University of Cambridge | Powdies | Powdered juice using enhanced food dehydration technology to reduce food wastage |
| Ellenor Witton | Heriot Watt University | Empads: empowering women through sanitation | Environmentally sustainable sanitary pads made from recycled clothes from the fashion industry to reduce period poverty |
| Tegan Forbes | Loughborough University | Self-sustaining off-grid toilet block with customised resource-generating capability | Modular and 'customisable' toilet blocks to collect and process human waste to create a sustainable resource, with the potential for generating electricity |
| Emily Cho | University of Maryland | Postlytics | Real-time, post-surgical/treatment monitoring to solve global overcrowding of hospitals and advance health informatics |
| Kevin Duke | North Carolina State University | Peak coffee processing | Filtration system for wastewater produced on coffee farms to improve water scarcity |
| Zhiqi Wang | University of Cambridge | Plantern | Device that allows families to grow spirulina easily, supplementing their diet to tackle micronutrient deficiency |

Ingenious Public Engagement Awards**Round 14 Awards**

Ingenious provides funding for projects that enable engineers to enhance their public engagement skills, and raise awareness of the diversity, nature and impact of engineering.

| Awardee | Organisation | Project title |
|-----------------------|---|---|
| Katy Vanden | Cap-a-Pie Engagements | 'Climate Change Catastrophe!' – co-creating theatre with children and engineers |
| Laura Hobbs | University of the West of England | Building to break barriers |
| David Rush | School of Engineering, University of Edinburgh | CreateWorks: Engineers inspired by theatre. Theatre inspired by engineers |
| Masoumeh Jahani | Toranj Tuition | Delight of Lighthouse |
| Ric Brame | University of Central Lancashire | Elevation – building structures and confidence with the Shadsworth community |
| Emily Prestwood | University of Birmingham | Energy engineering skills for the new industrial revolution |
| Lekisha Bradley | Bright Box Makerspace | Engaging communities through engineering and cultural heritage |
| Bernadette Ballantyne | Reby Media | Engineers of the future podcast |
| Richard Bowman | University of Bath | From making microscopes to finding microbes |
| Lucy Rafferty | Inspire! | iDiscover – introducing students with additional needs to STEM careers |
| Deborah McCahon | Woodcraft Folk | Kids Field – engineering solutions to the climate emergency |
| Alison Buxton | University of Sheffield | MakerMove: Think like an engineer |
| Hugh Thomas | MV Balmoral Trust | Migration and the Windrush generation: new ways of communicating engineering |
| Neil Noble | The Smallpeice Trust | Mini Pioneers |
| Sabina Gheduzzi | University of Bath | Perfect machines: engineering a superhero |
| Hazel East | Holborn Community Association | Street engineers |
| Rebecca Shipley | University College London | Tomorrow's home 2050: visions of home-based healthcare |

Engineering Leaders Scholarships

This award funds ambitious engineering undergraduates to undertake an accelerated personal development programme to move into a leadership position soon after graduation. The Academy currently funds 111 awardees, which includes six awardees who also received the Sir Ralph Robins Scholarship. The Sir Ralph Robins Scholarship is awarded to three individuals each year who meet all of the criteria for an Engineering Leaders Scholarship and also come from an underprivileged or underrepresented background.

| Name | University | Subject |
|-------------------------|---------------------------------|--|
| Akhil Ahmed | University of Strathclyde | Chemical and process engineering |
| Oluwatofunmi Akintaro | University of Sheffield | Civil and structural engineering |
| Shafae Ali | Imperial College London | Design engineering |
| Mughees Asif* | Queen Mary University of London | Aerospace engineering |
| Abigael Bamgboye | Imperial College London | Materials science and engineering |
| Esli Belshi | University of Strathclyde | Electrical and mechanical engineering |
| Ari Biggart | University of Bristol | Engineering design |
| Jamie Bignell | University of Bath | Electronic engineering with space science and technology |
| Oscar Bond | University of Bristol | Engineering design |
| Rachel Brown | Imperial College London | Design engineering |
| Zara Burton | University of Bristol | Engineering design |
| Liam Bushrod | Durham University | Engineering |
| Judith Cameron | Queen's University Belfast | Mechanical engineering |
| Kai Chelliah | University of Bristol | Engineering design |
| Jamie Clark | University of Edinburgh | Civil engineering |
| Luke Collinson* | University of Manchester | Engineering |
| Isabella Curtis | University of Warwick | Engineering |
| Alina Dragancea | University of Bristol | Civil engineering |
| Maisie Edwards-Mowforth | University of Edinburgh | Mechanical engineering |
| Leena Farhat | Aberystwyth University | Computer science |
| Floriane Fidegnon-Edoh | University of Warwick | Manufacturing and mechanical engineering |
| Angus Firth | University of Bristol | Engineering design |
| Umar Farooq* | Newcastle University | Automation and control engineering |
| Benjamin Foster | Imperial College London | Aerospace engineering |
| Adrian Gallet | University of Sheffield | Civil and structural engineering |
| Ciara Gibbs | Imperial College London | Biomedical engineering |
| Joseph Gibson | University of Strathclyde | Electronic and electrical engineering |
| Julia Gimbernat | Imperial College London | Biomedical engineering |
| Thomas Gonda | Imperial College London | Design engineering |

| Name | University | Subject |
|--------------------------|------------------------------|--|
| Layla Graham* | Sheffield Hallam University | Electronic engineering |
| Nicola Graham | University of Bristol | Engineering design |
| Shannon Graham | Queen's University Belfast | Product design engineering |
| Dylan Hall | Imperial College London | Materials science and engineering |
| Grace Handley | University of Lancaster | Aerospace engineering |
| Edward Hanton | University of Bristol | Engineering design |
| Akil Hashmi | University of Cambridge | Information engineering |
| Luke Hatton | University of Oxford | Engineering science |
| Rachel Hayden | University of Bath | Civil engineering |
| Thomas Henderson Edwards | University of Southampton | Civil engineering |
| Michael Hofmann | Imperial College London | Design engineering |
| Philip Holker | London South Bank University | Mechanical engineering |
| Rosie Hudson | University of Bristol | Engineering design |
| Cameron Huggins | University of Surrey | Medical engineering |
| Terence Hutley | University of Edinburgh | Chemical engineering |
| Helen Inman | University of Bristol | Engineering design |
| Khadijah Ismail | University of Lancaster | Aerospace engineering |
| Zakaria Jama | Oxford University | Engineering science |
| Benjamin James* | University of Cambridge | Engineering |
| Frances James | University of Bristol | Engineering design |
| Shahidurahman Janatmir | University College London | Chemical engineering |
| Emma Johnston | University of Strathclyde | Aero-mechanical engineering |
| Vidya Kanakarathnam | University of Cambridge | Engineering |
| Rachael Ker | University of Surrey | Mechanical engineering |
| David Kong | University of Edinburgh | Electronics and electrical engineering |
| Sophia Koni | University of Edinburgh | Chemical engineering |
| Maksymilian Kozarzewski | University of Edinburgh | Mechanical engineering |
| Anastasia Laurie | University College London | Mechanical engineering |
| Elvis Lepardinas | University of Edinburgh | Mechanical engineering |
| Julia Linke | University College London | Bioprocessing of new medicines |
| James Lloyd | University of Cambridge | Manufacturing engineering |
| Jonathan Loudon | Queen's University Belfast | Mechanical engineering |
| Topaz Maitland | University of Bristol | Engineering design |
| Samuel Maxwell | University of Sheffield | Electronic engineering |
| Joseph McFarlane | University of Bristol | Engineering design |
| Naomi McGregor | Queen's University Belfast | Product design engineering |

| Name | University | Subject |
|---------------------------|----------------------------|---|
| James McKeivitt | Loughborough University | Aeronautical engineering |
| Kyle McLean | University of Sheffield | Civil and structural engineering |
| Jade McMorland | University of Strathclyde | Electronic and electrical engineering |
| Bruno Mlodozieniec | University of Cambridge | Engineering |
| Sophie Myers | University of Bristol | Engineering design |
| Victoria Neill | Heriot-Watt University | Chemical engineering |
| Munira Patel | Newcastle University | Chemical engineering |
| Weronika Pawlowska | University of Sheffield | Civil and structural engineering |
| Nicolaas Pickard | University of Birmingham | Mechanical engineering |
| Rhys Phillips | University of Bath | Civil engineering |
| Andrew Pogue | Queens University Belfast | Mechanical engineering |
| Matthew Price | University of Southampton | Electronic engineering |
| Ryan Rafferty | Queen's University Belfast | Mechanical engineering |
| Alexander Reeve | University of Bristol | Engineering design |
| Victoria Regan | University of Bath | Chemical engineering |
| Samuel Rhodes | University of Sheffield | Mechatronics, robotics and control systems |
| Martin Riis | University of Strathclyde | Electronic and digital systems |
| Charlotte Ripley | Loughborough University | Architectural engineering and design management |
| Daniel Rodrigues | University of Bristol | Engineering design |
| Amy Ruffley | University of Bristol | Engineering design |
| Isabelle Russell | University of Nottingham | Electrical and electronic engineering |
| Jonathan Saad | University of Warwick | Engineering |
| Ilham Said | University of Bristol | Aerospace engineering |
| Isabelle Sambles | University of Bristol | Civil engineering |
| Thomas Santini | University of Bath | Integrated design engineering |
| Roberto Sesia | Cardiff University | Electrical and electronic engineering |
| Samuel Shannon | University College London | Biochemical engineering |
| Alexander Sheard | University of Bristol | Engineering design |
| Agata Skoneczna | University of Edinburgh | Structural engineering with architecture |
| James Smith | University of Surrey | Aerospace engineering |
| Matthew Smith | University of Sheffield | Materials science and engineering |
| Michal Stepkiewicz | University of Sheffield | Mechanical engineering |
| Patrick Sullivan | University of Bristol | Engineering design |
| Ashley Taillepierre Tsoka | University of Sheffield | Chemical engineering |
| Samuel Tiller | University of Bristol | Engineering design |

| Name | University | Subject |
|---------------------|-----------------------------------|---------------------------------------|
| Elvis Tinago | University of the West of England | Aerospace engineering |
| Duncan Trenholm | University of Nottingham | Civil engineering |
| Jack Tremain | University of Bristol | Engineering design |
| Emily Turnbull | Loughborough University | Civil engineering |
| Matthew Uren* | University of Manchester | Aerospace engineering |
| Tsemaye Uwejamomere | University of Cambridge | Engineering |
| Calum Watkins | University of Strathclyde | Electrical and mechanical engineering |
| Nathan Whear | University of Edinburgh | Mechanical engineering |
| Bethan Wilkinson | University of Edinburgh | Civil engineering |
| Katherine Winfield | University of Nottingham | Civil engineering |

*Sir Ralph Robins Scholars

Visiting Professors

The Visiting Professor programme places practising engineers into UK universities for three years to enhance the teaching and learning, as well as employability and skills, of undergraduate engineering students. The programme currently supports 78 Visiting Professor roles at 43 universities. The list below includes all Visiting Professors for the 2019/20 academic year.

| Name | University |
|----------------------------|------------------------------------|
| Steven Adams and Sam Beale | University of Cambridge |
| Salim Akhtar | University of Bradford |
| Ruth Allen | University of Exeter |
| Anthony Banford | University of Manchester |
| Dawn Bonfield MBE | Aston University |
| Oliver Broadbent | Imperial College London |
| Shahana Buchanan | University College London |
| Dawn Childs | Kingston University London |
| Caspar Clark | University of the West of Scotland |
| Patrick Conaghan | Heriot-Watt University |
| Dr David Cooper | Liverpool John Moores University |
| Colin Cunningham | University of Edinburgh |
| Dr Shidhartha Das | Newcastle University |
| Dr Paul Davies | Liverpool John Moores University |
| Robert Deaves | Imperial College London |
| Peter Debney | University of Bradford |
| Colin Deddis | University of Strathclyde |
| Dr Allen J Edwards | Cardiff University |
| John Eldridge | University of Liverpool |
| Gordon Findlay | Brunel University London |
| Ian Firth FREng | University of Warwick |
| Dr Tim Fox | University of Exeter |
| Steve Franklin | University of Sheffield |
| Dr Pierre Gauthier | Cranfield University |
| Vincent Glancy | Brunel University London |
| Martin Goosey | Loughborough University |
| Dr John Harris | University College London |
| Robert Harris | University of Southampton |
| Dr Christopher Harrison | University of the West of England |
| Dr Peter Harrod | Imperial College London |
| Dr Thoralf Hartwig | University College London |
| Dr Thoralf Hartwig | University College London |
| Dr Nicholas John Hazel | University College London |
| Dr Brian Henderson | University of Central Lancashire |
| Gillian Horn | University of Reading |
| Robert Ian Hutchison | University College London |
| Dr Penny Jeffcoate | University of Southampton |
| Steve Kaye | Brunel University London |

| Name | University |
|------------------------------|-----------------------------------|
| Dr Mark Keene | University of Birmingham |
| Gregory Kelsall | University of Sheffield |
| Andrew Bryan Langridge | University of Bath |
| Malcolm Lees | King's College London |
| Jochen Leidner | University of Sheffield |
| Zygmunt Adam Lubkowski | University College London |
| Dr Jon Machtynger | University of Surrey |
| Don McQuillan | Queen's University Belfast |
| Anthony (Tony) Morgan | University of Leeds |
| Gary Morgan | University of York |
| Dr Raj Nangia | University of the West of England |
| Stephen Newbury | University of Oxford |
| Dr Nelson Ogunshakin OBE | Aston University |
| Sir John O'Reilly FREng FLSW | University of Huddersfield |
| Brian Palmer | University of Manchester |
| Dr Vili Panov | University of Lincoln |
| Dr Richard Pearson | Brunel University London |
| Dr Jan Peters | Open University |
| Xavier Poteau | University of Manchester |
| Dr Honor Powrie | University of Southampton |
| Atul Roy | University of Kent |
| Dr Tony Russell-Rose | University of Essex |
| Robert (Bob) William Shanks | Coventry University |
| Graeme Shaw | University of Southampton |
| Dr Andrew Sherlock | University of Edinburgh |
| Martin Simpson | University of Liverpool |
| Dr Uwe Stein | University of Edinburgh |
| Kevin Steptoe | University of York |
| Dr Paul Taylor | University of the West of England |
| Vaughan Thomas | University College London |
| Professor K Clive Thompson | University of East London |
| Paul Tymkow | Brunel University London |
| Dr Tao Wang | University of Kent |
| Mr Mike Westlake | University of Warwick |
| Dr Stewart White | University of Glasgow |
| Dr Stuart Wicks | Loughborough University |
| Dr David Williams | Loughborough University |
| Chris Winter | University of Plymouth |
| Teo Heng Jimmy Yang | Cardiff University |
| James Yu | University of Glasgow |

Sainsbury Management Fellowships

This scheme aims to enhance the capability of the UK engineering industry by providing grants to young engineers with leadership qualities so that they can undertake an MBA course at a leading international business school. In 2019, 10 fellowships were awarded.

| Name | Business school |
|----------------------|--|
| Nikarika Bhargava | Harvard Business School |
| Matthias Libot | London Business School |
| Lukas Lukoschek | Harvard Business School |
| Victor Manzanares | IESE Business School – University of Navarra |
| Sagnik Mukherjee | London Business School |
| William Mulholland | MIT Sloan School of Management |
| Konstantinos Pierros | IMD Switzerland |
| Nicolas Renard | Wharton, University of Pennsylvania |
| Philipp Staggat | London Business School |
| Samuel Taylor | INSEAD |

Connecting STEM Teachers programme

Connecting STEM Teachers is the Academy's flagship schools programme delivered by 41 teacher coordinators across 42 regional networks. Teacher coordinators connect teachers across STEM subjects by promoting and facilitating cross-curricular working and collaboration, provide continued professional development to teachers via a 'train-the-trainer' model and deliver high-quality, curriculum-linked physical classroom resources that connect STEM in the classroom to engineering in the real world.

| Teacher coordinator | Area covered |
|---------------------|---|
| Scott Atkinson | South East – Hampshire/West Sussex |
| Annie Beglin | South – Surrey/Berkshire |
| Jorden Birch | North East – Sheffield, South Yorkshire |
| Barney Brown | South West – Bath, Somerset |
| Simon Brown | South – Oxfordshire/Buckinghamshire |
| Andrew Carruthers | North – Leeds, West Yorkshire |
| Claudia Clarke | South – Oxfordshire |
| Tom Cookson | Midlands – Nottingham |
| Amanda Courtney | South East – Kent/East Sussex |
| Michael Cronk | South West – Devon |
| Richard Davies | North East – North Yorkshire |
| Lorraine Drybrough | South West – Cornwall |
| Kate Finlay | East of England – Norfolk |

| Teacher coordinator | Area covered |
|----------------------------|---|
| Andrew Gilbert | West Midlands – Shropshire |
| Robin Gray | Scotland – Aberdeenshire |
| Emma Harvey | South East – Kent |
| Arthur Harwood | East Midlands – Northamptonshire |
| Stuart Higham | South – Hertfordshire |
| Thomas Lavery | Northern Ireland – Belfast |
| Sam Lawrence | South West – Bristol |
| Holly Leat | South – Southampton |
| Beverly Maloney | East of England – Ipswich |
| Lewis Matheson | South West – Bath, Somerset |
| Michael McAteer | North West – Liverpool |
| Yeasmin Mortuza | London – North East |
| Michael Nelson | North East – Newcastle upon Tyne |
| Emily Northwood | West Midlands – Stoke on Trent, Staffordshire |
| Tracey O'Connor | West Midlands – Birmingham |
| Tunde Orelaja | London – South East |
| Krissi Pink | South East – Medway Towns |
| Susan Quirk | South West Wales – Carmarthenshire |
| Martin Reid | Scotland – Perth and Kinross |
| Gareth Richards | East Midlands – Peterborough, Cambridgeshire |
| Gaynor Sharp | West Midlands – Coventry |
| Martin Simmons | North West – Greater Manchester |
| Philip Sutton | North Wales – Conwy |
| David Thomas | North East – Northumberland |
| Matthew Thomas | North West – Blackpool |
| Peter Thomas | South East Wales – Cardiff |
| Anthony Vaughan-Evans | East of England – Lowestoft, Suffolk |
| Chris Wallis | North West – Preston, Lancashire |
| Laura Watford | South – Portsmouth |
| Terry Watts | South West – Bristol |

Queen Elizabeth Prize for Engineering

The Queen Elizabeth Prize for Engineering (QEPrize) is a global award that celebrates outstanding innovations in engineering that have created significant benefit to humanity. The £1 million prize is awarded to an individual or team of people, of any nationality, directly responsible for a groundbreaking advance in engineering.

Panel of judges

The distinguished, international panel of judges is comprised of leading engineers and scientists from all corners of the profession. Each cycle they work to reward the engineers responsible for a groundbreaking advance in engineering that has created significant international public benefit.

The judging panel is chaired by Professor Sir Christopher Snowden FEng FRS.

| Name | Job title | Country |
|---|---|--------------|
| Professor Sir Christopher Snowden FEng FRS | Chair of Judges, Former Vice-Chancellor, University of Southampton | UK |
| Professor Jim Al-Khalili OBE FRS | Professor of Physics and Professor of Public Engagement in Science, University of Surrey | UK |
| Professor Mary Boyce | Dean of Engineering, The Fu Foundation School of Engineering and Applied Science, Columbia University | US |
| Dr Jean-Lou Chameau | Former President, King Abdullah University of Science and Technology | Saudi Arabia |
| Professor Dame Lynn Gladden DBE FEng FRS | Shell Professor of Chemical Engineering, University of Cambridge | UK |
| Professor Carlos Henrique de Brito Cruz | Science Director, São Paulo Research Foundation | Brazil |
| Professor Dr Dr hc Reinhard Huettl | Chairman of the Board & Scientific Director, German Research Centre for Geosciences | Germany |
| Professor Hiroshi Komiyama | President, Engineering Academy Japan | Japan |
| Professor Jinghai Li | President, National Natural Science Foundation of China | China |
| Ilya Marotta | Deputy Administrator, Panama Canal Authority | Panama |
| Dr Raghunath Mashelkar | National Research Professor, Chairman of the National Innovation Foundation and President of Global Research Alliance | India |
| Dr Dan Mote Jr | President Emeritus, US National Academy of Engineering; Regents Professor, University of Maryland | US |
| Professor Dr Dr hc Viola Vogel | Head of Laboratory of Applied Mechanobiology, ETH Zurich | Switzerland |
| Paul Westbury CBE FEng | Senior Vice President – Development & Construction, Strategy & Operations, The Madison Square Garden Company | UK |
| Dr Henry Yang | Professor of Mechanical Engineering and Chancellor, University of California, Santa Barbara | US |

Foundation Trustees

The Queen Elizabeth Prize for Engineering is run by a charitable company limited by guarantee and called The Queen Elizabeth Prize Foundation, which manages the prize and its funding.

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Search Group

The search group encourages submissions from around the world, enabling members of the public, academics and those working in industry to bring innovations and potential recipients of the prize to the attention of the judging panel. They work to produce a pool of nominations that is inclusive and representative.

The search group is chaired by Professor Stephen Williamson FREng.

| Name | Job title | |
|------------------------------------|---|----|
| Professor Stephen Williamson FREng | Chair of Search Group Emeritus Professor, University of Surrey | UK |
| Professor Neil Alford FREng | Associate Provost (Academic Planning), Imperial College London | UK |
| Professor Adisa Azapagic FREng | Professor of Sustainable Chemical Engineering and Head of Sustainable Industrial Systems, University of Manchester | UK |
| Professor John Clarkson FREng | Professor of Engineering Design, University of Cambridge | UK |
| Professor Roger Falconer FREng | Professor of Water Management, Cardiff University | UK |
| Professor Peter Guthrie OBE FREng | Director of Sustainable Development, University of Cambridge | UK |
| Professor Guy Houlsby FREng | Professor of Civil Engineering and former Head of the Department of Engineering Science, University of Oxford | UK |
| Professor Joe McGeehan CBE FREng | Emeritus Professor of Communications Engineering, University of Bristol | UK |
| Professor Philip Nelson FREng | Chief Executive, Engineering and Physical Sciences Research Council; Professor of Acoustics, University of Southampton | UK |
| Professor Eleanor Stride FREng | Statutory Professor of Biomaterials, University of Oxford | UK |
| Professor Ric Parker CBE FREng | Former Director of Research and Technology, Rolls-Royce (until April 2016) | UK |
| Professor Richard Penty FREng | Professor of Photonics, University of Cambridge; Master, Sidney Sussex College | UK |
| Professor Duc Pham OBE FREng FLSW | Chance Professor of Engineering and Director of Research, University of Birmingham | UK |

Development and fundraising

Contributors to Academy programmes

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| Company | Programme |
|--------------------------|--|
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