



Royal Academy
of Engineering

Annex to the
Annual Report
and Accounts
2020|2021



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Fellows elected in 2020

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 2020 were:

Professor Pan Hui FEng (Finland)

Nokia Chair in Data Science, University of Helsinki; Director of HKUST-DT Systems and Media Lab, Hong Kong University of Science and Technology

Dr Asad Madni FEng (US)

Distinguished Adjunct Professor and Distinguished Scientist, UCLA

Kunasingam Sittampalam FEng (Malaysia)

Executive Vice Chairman, HSS Engineers Berhad

Fellows

Elected in 2020 were:

Dr Rajapillai Ahilan FEng

Group Chief Executive Officer, LOC Group

Professor Philip Blythe FEng

Chief Scientific Adviser, Department for Transport; Professor of Intelligent Transport Systems, Newcastle University

Professor Philip Bond FEng

Professor of Creativity and Innovation, University of Manchester

Billy Boyle FEng

Co-founder and Director, Owlstone Medical

Dr Julie Bregulla FEng

Director, Fire and Building Technology Group, Building Research Establishment

Andrew Bud CBE FEng

Founder and CEO, iProov Ltd

Professor Edmund Burke FEng

Deputy Vice-Chancellor, University of Leicester

Professor James Busfield FEng

Professor of Materials and Director of Industrial Engagement, Queen Mary University of London

Professor Jon Carrotte FEng

Rolls-Royce/RAEng Professor of Aerothermal Technology, Loughborough University

Dawn Childs FEng

UK Change Director, National Grid

Craig Clark MBE FEng

Founder and Chief Strategy Officer, AAC Clyde Space

Paul Clarke CBE FEng

Chief Technology Officer, Ocado Ltd

Professor Trevor Cross FEng

VP Innovation, Space and Quantum, Teledyne e2v

Professor Yulong Ding FEng

Founding J. Chamberlain Professor of Chemical Engineering, University of Birmingham

Professor William Drury FEng

Independent consultant

David Edwards FEng

Operational Excellence Manager, Thames Water

Richard Elsy CBE FEng

CEO, High Value Manufacturing Catapult

Professor Leroy Gardner FEng

Professor of Structural Engineering, Imperial College London

Professor Philippa Gardner FEng

Professor of Theoretical Computer Science, Imperial College London

Professor Deborah Greaves OBE FEng

Head of School of Engineering, Mathematics and Computing, and Professor of Ocean Engineering, University of Plymouth

Professor Joseph Hajnal FEng

Professor of Imaging Science, King's College London

Professor Yang Hao FEng

Professor in Antennas and Electromagnetics, Queen Mary, University of London

Professor Mark Harman FEng

Engineering Manager, Facebook

Richard Hopkins FEng

IBM Distinguished Engineer and President, IBM Academy of Technology, IBM

Professor Kirill Horoshenkov FEng

Professor of Acoustics, University of Sheffield

Dr Bryn Hughes FEng

Head of Science and Engineering Profession, and Senior Technical Fellow, Dstl

Professor Naeem Hussain FEng

Director, Arup Fellow: Global Bridge Design Leader, Arup

Air Marshall Richard Knighton CB FEng

Deputy Chief of the Defence Staff (Military Capability), Ministry of Defence

Professor David Larbalestier FEng

Chief Materials Scientist, National High Magnetic Field Laboratory, and Francis Eppes Professor, Florida State University (US)

Professor Peter Lee FEng

Professor of Materials Science, University College London

Professor Kai Hong Luo FEng

Chair of Energy Systems, University College London

Professor Stuart Lyon FEng

AkzoNobel Chair in Corrosion Control, University of Manchester

Professor Cav Sandro Macchietto FEng

Professor of Process Systems Engineering, Imperial College London

Professor Omar Matar FEng

RAEng/PETRONAS Research Chair in Multiphase Fluid Dynamics, Imperial College London

Professor Charles Wang-Wai Ng FEng

CLP Holdings Professor of Sustainability, Hong Kong University of Science and Technology (Hong Kong Special Administrative Region)

Tony O'Brien FEng

Global Practice Leader, Geotechnics, Mott MacDonald

Professor Eann Patterson FEng

A.A. Griffith Chair of Structural Materials and Mechanics, University of Liverpool

Colin Paynter FEng

Managing Director, Airbus Defence and Space UK

Professor John Robertson FEng FRS

Director of Research, University of Cambridge

Professor Esther Rodriguez-Villegas FEng

Professor of Low Power Electronics and Director of the Wearable Technologies Lab, Imperial College London

Dr Lucy Rogers FEng

Director, Makertorium Ltd, and VP of Creativity and Communication, Brunel University London

Dr Antony Rowstron FEng

Deputy Lab Director and Distinguished Engineer, Microsoft Research

Dr Norman Smith FEng

Chief Executive Officer, Vision RT Ltd

Professor Richard Stone FEng

Professor of Engineering Science, University of Oxford

Professor Tong Sun OBE FEng

Professor of Sensor Engineering, City University London

Professor Rahim Tafazolli FEng

Regius Professor of Electronic Engineering and Founder/Director of 5G Innovation Centre (5GIC), University of Surrey

Dr Alison Vincent FEng

Non-Executive Director: Synectics Plc, Telesoft Ltd, Connected Places Catapult, uMotif, Cybertonica, Arqit

Roger Wells FEng

Head of Technology (Industrial Turbomachinery) and Innovation Manager (Power Generation), Siemens UK

Dr Charles Woodburn FEng

Group Chief Executive Officer, BAE Systems plc

Professor Yong Yan FEng

Professor of Electronic Instrumentation and Director of Innovation, School of Engineering and Digital Arts, University of Kent

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.

President

Sir Jim McDonald FREng FRSE

Vice-Presidents

Naomi Climer CBE FREng
Vice-President for Fellowship
Engagement

Professor Peter Guthrie OBE FREng
Vice-President for Committee
Coordination

Members

Sir Simon Bollom KBE CB FREng
Chris Earnshaw OBE FREng
Professor Peter Goodhew CBE FREng
Dr Martin Grant FREng
Dame Judith Hackitt DBE FREng
Professor Eileen Harkin Jones OBE FREng
Professor John Loughhead CB OBE FREng
Professor Jeremy Watson CBE FREng
Professor Steve Williamson FREng
Professor Stephen Young FREng FRS

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

Chris Earnshaw OBE FREng

Deputy Chair

Ginny Clarke CBE FREng

Members

Jitu Bhuva

Sir Simon Bollom KBE CB FREng

Jayne Bryant FREng

Andrew McNaughton FREng

Catriona Schmolke FREng

Paul Taylor

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 Steve Young FREng FRS

Members

Naomi Climer CBE FREng

Dr Neil Kempson CB 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

The President

Panel chairs

Panel 1

Dr Steve Denton FREng

Panel 2

Catriona Schmolke FREng

Panel 3

Professor Nilay Shah OBE FREng

Panel 4

Dr Roger Digby FREng

Panel 5

Tony Harper FREng

Panel 6

Professor Lianne Deeming FREng

Panel 7

Professor Sarah Spurgeon OBE
FREng

Panel 8

Ed Daniels FREng

Panel 9

Professor Anthony Bull FREng

Panel 10

Dr Andy Ward FREng

Panel 11

Steve Dearden FREng

Ex-officio (Chair of International Committee)

David Thomlinson FREng

Panel Members

Panel 1 – Civil and environmental

Mr Jeremy Benn FREng
 Professor Rene de Borst FREng
 Dr Keith Bowers FREng
 Professor Kelvin Higgins FREng
 Mr Keith Howells FREng
 Professor Jian Kang FREng
 Mr Martin Knights FREng
 Professor Simon Pollard OBE FREng
 Dr Mark Raiss FREng
 Dr Jean Venables CBE FREng
 Mr Mark Whitby FREng
 Dr Sarah Williamson FREng

Panel 2 – Materials and mining

Dr Raouf Al-Kattan FREng
 Dr Anthony Batchelor FREng
 Professor Andrew Bell FREng
 Professor Alan Cocks FREng
 Mark Cutifani FREng
 Professor Judith Driscoll FREng
 Dr Chris Haynes OBE FREng
 Dr Gareth Hinds FREng
 Professor Roger Reed FREng
 Professor Rachel Thomson FREng
 Professor Robert Wood FREng

Panel 3 – Chemicals and process

Dr Mark Buswell FREng
 Ms Joan Cordiner FREng
 Professor Peter Fryer FREng
 Professor Mojtaba Ghadiri FREng
 Mr Chris Hamlin FREng
 Mr David Lovett FREng
 Professor Ian Metcalfe FREng
 Professor Nigel Titchener-Hooker FREng

Panel 4 – Aerospace

Professor Guglielmo Aglietti FREng
 Professor Christopher Atkin FREng
 Mr Gavin Campbell FREng
 Professor Jonathan Cooper FREng
 Professor Tony Gillespie FREng
 Air Marshall Susan Gray CB OBE FREng
 Professor Rebecca Lingwood FREng
 Professor Colin McInnes MBE FREng
 Dr Ian Ritchey FREng
 Professor John Sherwin FREng

Panel 5 – Transport and mechanical

Professor Bridget Eickhoff FREng
 Mr Mark Garrett FREng
 Professor Morgan Heikal FREng
 Dr Graham Hoare OBE FREng
 Professor Robert Dwyer Joyce FREng
 Professor Robin Langley FREng
 Muir Macdonald FREng
 Professor Ricardo Martinez-Botas FREng
 Rod Muttram FREng
 Professor Anne Neville FREng FRS FRSE
 Mr Nick Rogers FREng
 Professor Rod Smith FREng
 Richard Vie FREng

Panel 6 – Manufacturing and design

Professor Gareth Hankins FREng
 Professor Sri Hinduja FREng
 Rachel Hurst FREng
 Professor Ian Hutchings FREng
 Professor Joseph McGeough FREng FRSE
 Mr Brian Palmer FREng
 Professor Graham Wren OBE FREng
 Professor Ken Young FREng

Panel 7 – Electrical and electronic

Dr Michael Begg FREng
 Dr Andrew Carter FREng
 Professor David Cumming FREng FRSE
 Professor A G Davies FREng
 Professor Harald Haas FREng FRSE
 Professor Barry Lennox FREng
 Graeme Malcolm OBE FREng FRSE
 Dr Pavel Matousek FREng
 Professor Graham T Reed FREng
 Professor Dimitra Simeonidou FREng
 Rakesh Sharma OBE FREng
 Professor Alexandre Yakovlev FREng
 Professor Zi Qiang Zhu FREng

Panel 8 – Energy and power

Professor Julian Allwood FREng
 Professor Martin Blunt FREng
 Mr A D Carlick FREng
 Professor Richard Clegg FREng
 John Eldridge FREng
 Professor Tim Green FREng
 Dr Catherine McClay FREng
 Professor Rod Rainey FREng

Dr Mark Selby FREng
 Dr Richard Yemm FREng
 Professor Antoni Ziolkowski FREng FRSE

Panel 9 – Medical and bioengineering

Professor Constantine Coussios FREng
 Professor David Jones FREng
 Emeritus Professor Rodney H Smallwood FREng HonFRCP
 Professor Christopher Taylor OBE FREng
 Professor Weng Wang FREng
 Professor David J Williams OBE FREng
 Professor Rachel Williams FREng

Panel 10 – Computing and communications

Professor Darwin Caldwell FREng
 Professor Mike Davies FREng
 Professor Andrew Davison FREng
 Professor Mischa Dohler FREng
 Mr Trevor Gill FREng
 Adrian Hilton FREng
 Professor Ursula Martin CBE FREng FRSE
 Professor Joseph McGeehan CBE FREng
 Professor Asoke Nandi FREng
 Dr Phil O'Donovan FREng
 Professor Peter O'Hearn FREng FRS
 Professor Maja Pantic FREng
 Professor Daniel Rueckert FREng FMedSci
 Professor Anne Trefethen FREng
 Professor Jiangzhou Wang FREng
 Dr Andrew Ward FREng
 Professor Paul Watson FREng

Panel 11 – Special

Professor Helen Atkinson CBE FREng
 Mr Robert Keiller CBE FREng
 Dr Niel Kempson CB FREng
 Professor Max Lu DL FREng (Deputy Chair)
 Mr Colin Mathews CBE FREng
 Mr Alasdair Stirling CBE FREng
 Ms Lila Tachtsi FREng
 Dr Peter Thompson FREng
 Professor Terence Wilkins FREng
 Professor John Wood CBE 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 FREng
FRSE

Members

Professor Colin Bailey CBE FREng
Dr Alan Begg FREng
Naomi Climer CBE FREng
Professor Geoff Maitland CBE FREng
Professor Asoke Nandi FREng
Dame Frances Saunders DBE CB
FREng
Dr Liane Smith FREng

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 FREng
FRSE

Finance Committee Chair

Professor Stephen Young FREng FRS

Members

Naomi Climer CBE FREng
Professor Peter Guthrie OBE FREng

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 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 Bashir Al-Hashimi CBE FEng

Members

Dr Raouf Al-Kattan FEng
Jane Atkinson CBE FEng
Dr Alan Belfield FEng
Tony Graham FEng
Professor Yike Guo FEng
Professor Harald Haas FEng FRSE
Professor David Johnson FEng
Professor Andrew Lewis FEng
Professor Rebecca Lingwood FEng
Professor Graham Reed FEng
Dr Mark Selby FEng
Richard Taylor FEng
Jane Wernick CBE FEng

Diversity and Inclusion Committee

The purpose of this committee is to advise and have oversight of 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

Dr Fawaz Bitar FEng
Mark Carne CBE FEng
Dr Carolyn Griffiths FEng
Professor David Jones FEng
Jonathan Lyle CB FEng
Dr Catherine McClay FEng
Michelle McDowell MBE FEng
Dr Ian Ritchey FEng
Professor Nilay Shah OBE FEng
Rakesh Sharma OBE FEng
Professor Paul Watson FEng

Non-Fellow Members

Paul Bailey
Elspeth Finch MBE
Dr Nike Folayan MBE
Paul Hardaker
Dr Mark McBride-Wright

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

Phil Smith CBE FEng

Members

Andrew Carlick FEng
Professor Anthony Cohn FEng
Janice Crawford FEng
Dr Graham Farnell CB OBE FEng
Professor David Howard FEng
Professor Tim Ibell FEng
Muir Macdonald FEng
Professor J D Perkins CBE FEng
Professor Richard Prager FEng
Professor Rachel Thomson FEng
Professor Ken Young FEng

Non-Fellow Members

Dawn Bonfield MBE

Ex-officio

Tim Chapman FEng
SMF
Dr Mike Cook FEng
ESG
Amanda Dickins
STEM Learning
Beth Elgood
EngineeringUK
Ian Gaskill
Nat Fed of Engineering Centres
Johnny Rich
Engineering Professor Council
Catriona Schmolke
ELS
David Scott FEng FRSE
Chair VP Man Grp
Katy Turff
Engineering Council
Professor Colin Turner
Eng Professor Council

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 Nick Jennings CB FREng

Members

Professor Philip Blythe FREng
 Professor Joan Cordiner FREng
 Graham Dalton FREng
 Dr Steve Denton FREng
 Dr Luisa Freitas dos Santos FREng
 Professor John Fisher CBE FREng
 FMedSci
 Professor Rebecca Lunn MBE FREng
 FRSE
 John MacArthur FREng
 Nigel Perry MBE FREng
 David Wright FREng
 Professor Tom Rodden FREng
 Professor Nilay Shah OBE FREng
 Paul Taylor FREng
 Faith Wainwright MBE FREng

Ex-officio (Chair of Focus on Biomedical Engineering)

Professor Dave 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 Cleevely CBE FREng

Members

Professor Norman Apsley OBE FREng
 Professor Steve Beaumont OBE
 FREng FRSE
 Professor Richard Brook OBE FREng
 Mike Carr OBE FREng
 Anne Glover CBE HonFREng
 Mr John Leggate CBE FREng
 Chris Mairs CBE FREng
 Professor Alison Noble OBE FREng
 FRS
 Sir John O'Reilly FREng
 Mr Paul Taylor FREng
 Dr Robert Sansom FREng
 Dr Andrew Ward FREng
 Dr Richard Whittington FREng
 Professor Eric Yeatman FREng

Non-Fellow Members

Dr Inken Braunschmidt
 Maria Dramaloti-Taylor
 Dr Ruth McKernan CBE
 Matt Sinclair

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
 Dr Raouf Al-Kattan FREng
 Professor Mischa Dohler FREng
 Professor Dame Prathiba Gai DBE
 FREng FRS
 Professor David Howard FREng
 Peter Lomas FREng
 Professor Maja Pantic FREng

Non-Fellow Members

Clive Cookson
 Greg Foot
 Alok Jha
 Rosa Wilkinson

Ex-officio Members

Professor David Delpy CBE FREng
 FRS FMedSci
 Deputy Chair, *Ingenia* Editorial Board
 Professor Anthony Finkelstein CBE
 FREng
 Chair, *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

Norman Apsley FEng
 Professor Judith Driscoll FEng
 Professor Tariq Durrani FEng FRSE
 David Eyton CBE FEng
 Professor Allyson Lawless FEng
 Professor Ric Parker CBE FEng
 Professor William Powrie FEng
 Professor Ravi Silva CBE FEng
 Dr Mike Short OBE FEng
 Professor Chai Toh FEng
 Professor Rachel Williams FEng
 Professor Zhibing Zhang FEng

Non-Fellow Members

Professor Barbara Evans
 Dr Anh Tran
 Dr Priya Guha

Ex-officio

Professor Amr El Nashai 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
 (Deputy Chair)
 Professor Neville Jackson FEng
 Professor Jian Kang FEng
 Professor Maire O'Neill FEng
 Professor Mark Sandler FEng
 Professor Dimitria Simeonidou FEng
 Professor Tom Stephenson FEng
 Professor Hua Zhao FEng

Non-Fellow Member

Dr Elizabeth Bowman

Ex-officio

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

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

Baroness Brown of Cambridge DBE
 FEng FRS
 Naomi Climer CBE FEng
 Dr Andy Harter CBE DL FEng
 Professor Nick Jennings CB FEng
 Dr Gordon Masterton OBE DL FEng
 FRSE
 Professor Sir John McCanny CBE
 FEng FRS
 Professor Phil Nelson CBE FEng
 Dr Liane Smith FEng
 Professor Sir Saeed Zahedi OBE RDI
 FEng

Awards 2020

MacRobert Award

The MacRobert Award is the premier award for innovation in UK engineering. Originally founded by the MacRobert Trust, it celebrated its 50th anniversary 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.

2020 winner

JCB

2020 Finalists

Babcock LGE
Jaguar Land Rover

President's Medal

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

2020 winner

Dervilla Mitchell CBE FREng

Prince Philip Medal

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

2020 winner

Bob Stuart, audio engineer

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.

2020 winners

Dr Marko Bacic
Professor Michael Bronstein
Esther Rodriguez-Villegas FREng
Dr Jamie Shotton

Sir Frank Whittle Medal

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

2020 winner

Dame Julia Higgins DBE FREng

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.

2020 winners

Amy Wright
Dr Andrea De Luca
Dr Boyang Shen
Dr Richard Colchester

Sir George Macfarlane Medal

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

2020 winner

Sorin Popa

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.

2020 winner

The team at Reaction Engineers.

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.

2020 winner

The Queensferry Crossing

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.

2020 winner

Dr Susan Scurlock MBE

RAEng Armourers and Brasiers Company Prize

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

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 Robert Bowman	Seagate Technology	Advanced materials for data storage	Queen's University Belfast
Professor Christoph Bruecker	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 Adam Clare	Rolls-Royce	Miniaturisation of electrophysical techniques for next generation on wing repair	University of Nottingham
Professor Jacqueline Cole	BASF	Data-driven molecular engineering of functional materials	University of Cambridge
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 Trung Duong	Nokia Bell Labs	Towards massive connectivity to enable ultra-reliable and near zero-latency communications	Queen's University Belfast
Professor Amparo Galindo	Lilly	Pharmaceutical molecular systems	Imperial College London
Professor Corin Gawith	Covesion	Nonlinear optical materials by ultra-precision machining	University of Southampton
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 Eileen Harkin-Jones OBE FREng	Spirit AeroSystems	Composites engineering	Ulster University
Professor Paul Hoskisson	GSK	Engineering biology of antibiotic production	University of Strathclyde

Name	Co-sponsor	Subject	University
Professor Lorenzo Iannucci	Airbus	Advanced composite design for aircraft structures	Imperial College London
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 Ahmed Kovacevic	Howden Compressors	Smart efficient compression: reliability & energy targets (SECRET)	City, University of London
Professor Roger Lewis	Rail Safety and Standards Board	Wheel/rail interface low adhesion management	University of Sheffield
Professor Mikel Lujan	ARM	Low power IoT and edge computing: taming heterogeneous 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 FREng	Petronas	Multiphase fluid dynamics	Imperial College London
Professor Bruno Merk	National Nuclear Laboratory	Computational modelling for nuclear engineering	University of Liverpool
Professor Mahmoud Mostafavi	UKAEA	High temperature fusion engineering	University of Bristol
Professor Chris Pearce	EDF Energy	Computational mechanics for nuclear power engineering	University of Glasgow
Professor Nik Petrinic	Rolls-Royce	Impact engineering with digital materials for paradigm shift in design	University of Oxford
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-Díaz-del-Castillo	Liberty	Alloy and microstructure design for additive layer manufacturing	Lancaster University
Professor Stephen Roberts FREng	MAN Group Plc	Machine learning at industrial and commercial scale	University of Oxford
Professor Joseph Robson	DSTL	Alloys for extreme environments	University of Oxford

Name	Co-sponsor	Subject	University
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 Thomas Scott	AWE	Actinide metallurgy	University of Bristol
Professor Thomas Scott	UKAEA	Advancing the fusion energy fuel cycle	University of Bristol
Professor Stephen Skinner	Cerespower Ltd	Electrochemical devices for a zero-carbon economy	University of Manchester
Professor Radan Slavik	Lumenisity	Thermally insensitive hollow core optical fibres	University of Southampton
Professor Cindy Smith	Scottish Water	Biofiltration by biological design	University of Glasgow
Professor Tong Sun OBE FREng	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 Francesca Toni	J.P. Morgan	Argumentation for interactive explainable AI	Imperial College London
Professor Philip Torr FREng	Five AI	Computer vision	University of Oxford
Professor Sotirios Tsaftaris	Canon Medical	Healthcare AI	University of Edinburgh
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 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
Professor 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 Stephen Beeby	Electronic textiles engineering: towards invisible and ubiquitous wearable technologies	University of Southampton
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 Richard Dinsdale FLSW	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 Manchester
Professor Alejandro Frangi	Computational precision medicine for in silico trials of medical devices	University of Leeds
Professor Brian David Gerardot	Integrated two-dimensional classical and quantum photonics	Heriot-Watt University
Professor Susan Gourvenec	Intelligent and resilient ocean engineering	University of Southampton
Professor Emile Smith Greenhalgh	Massless energy – structural power and multifunctional structural materials	Imperial College London
Professor Jonathan Darrell Hirst	Machines learning chemistry	University of Nottingham
Professor Natalio Krasnogor	Engineering data structures organoids (EnDROIDS)	Newcastle University
Professor Martin Kuball	Ultra-wide bandgap emerging power electronics for a low carbon economy	University of Bristol
Professor Peter Lee FREng	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 Robert McInnes MBE FREng FRSE	Space technologies	University of Glasgow
Professor Bruno Merk	iMAGINE – a nuclear system operating on spent fuel without reprocessing	University of Liverpool
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

Name	Subject	University
Professor Douglas John Paul	Single-chip cold-atom systems: a quantum navigator in your mobile phone	University of Glasgow
Professor Themis Prodromakis	Memristive technologies for lifelong learning embedded AI hardware (AI MeTLLE)	University of Southampton
Professor Susan Rosser	Engineered cells for combined diagnostics and therapeutics (Theranostics)	University of Edinburgh
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 William Sloan	Off-grid water biotechnologies	University of Glasgow
Professor Guy-Bart Stan	Accelerating engineering biology: efficient engineering of reliable and high-performance biosystems	Imperial College London
Professor Molly Morag Stevens FREng FRS	Multidimensional target-agnostic sensing (MTAS): the next generation of biosensors	Imperial College London
Professor Danail Stoyanov	Robotic actuated imaging skins	University College London
Professor Sriram Subramanian	Interactive technologies using metamaterials	University College London
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 Giuliano Allegri	Rolls-Royce	Physically based modelling of fatigue in composites	University of Bristol
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 Andrew McPherson	Augmented Instruments Ltd (Bela)	Embedded music computing	Queen Mary University of London
Dr Dinesh Pamunuwa	Microsemi	Zero-leakage high-temperature electronics	University of Bristol
Dr Priti Parikh	BBOX	Smart solar solutions for all (S34ALL)	University College London
Dr Michael John Strain	Fraunhofer UK	Chipscale photonics	University of Strathclyde

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 Christopher Edwin Blenkinsopp	Dynamic revetments: sustainable coastal protection by working with nature	University of Bath
Dr Mahsa Derakhshani	Machine learning solutions for scalable, mission-critical wireless networks	Loughborough University
Dr Suhaib Fahmy	Accelerated distributed machine learning for real world systems	University of Warwick
Dr Carolina Font Palma	ICED: integrated cryogenic separation for CO ₂ emissions decrease	University of Hull
Dr Alison Jones	Engineering tools for analysis of impingement in the human hip joint	University of Leeds
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 William Andrew McMullan	City-scale air pollution; from simulation to virtual reality	University of Leicester
Dr Min Pan	Digital hydraulic converters for next generation fluid power transmission technology	University of Bath
Dr William Alfred Peter Smith	Model-based computer vision meets deep learning	University of York
Dr Konstantinos Daniel Tsavdaridis	Flexible and resilient 3D printed metallic connections for modular buildings	University of Leeds
Dr Barbara Villarini	AI-driven organ reconstruction and morphological features extraction from medical images	University of Westminster
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 Christina Biggs	Mineralogical routes to cheap hydrogen production: developing clay-based membranes for the electrolysis of water	Swansea University
Dr Huiqi Lu	Gestational diabetes: predictive monitoring and management	University of Oxford
Dr Richard Matthews	Developing the key relationships involved in protein structure and stability in ionic solvents	Imperial College London
Dr Debarati Torrens	Devising demand side response strategy for supermarket energy management using neural networks	Brunel University London

Research Fellowships

These fellowships are awarded to outstanding early-career researchers from all branches of engineering who have a PhD awarded in the last four years.

Name	Subject	University
Dr Nasrin Al Nasiri	Novel coatings for ceramic gas turbines	Imperial College London
Dr Jose Humberto Almeida Junior	Uncertainty quantification in the design of future composite aerostructures (UQUAFA)	Queen's University Belfast
Dr Yoann Altmann	Bayesian computational methods for efficient low-energy imaging and sensing	Heriot-Watt University
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 Yang Cao	Making database systems learn and making them robust	University of Edinburgh
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 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 James Ewen	Controlling friction through molecular engineering	Imperial College London
Dr Elizabeth Follett	Hydraulic design of instream wood structures for flood risk management	Cardiff University

Name	Subject	University
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
Dr Abderrahim Halimi	Advanced computational methods for smart and extreme imaging	Heriot-Watt University
Dr João Henriques	MEMO – Meta-learning enhanced memorization 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 Rand Ismaeel	Real time environmental monitoring of ocean methane and hydrocarbon levels through optical fibre isotope detector	University of Southampton
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 Himanshu Kaul	The Lung Pharmacome	University of Leicester
Dr Thomas Kissinger	Doppler-enhanced lidar system using range-resolved interferometry	Cranfield University
Dr Domaniç Lavery	Simplified transceiver architectures for high capacity optical networks	University College London
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 Aurora Maccarone	Underwater three-dimensional optical imaging based on quantum detection	Heriot-Watt University
Dr Luca Magri	Adjoint-based approaches in thermo-acoustics: understanding, modelling and controlling instabilities	University of Cambridge
Dr Peter George Martin	Transforming the national infrastructure for detecting, characterising and mapping radiation	University of Bristol
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

Name	Subject	University
Dr Richard Middlemiss	MAP-Grav (microscopic semi-absolute pendulum gravimeter)	University of Glasgow
Dr Ross Millar	Germanium-tin quantum detectors	University of Glasgow
Dr Timothy Moorsom	Active topological plasmonics	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 Greg Mutch	Advancing facilitated-transport membranes for disruptive carbon dioxide separation	Newcastle University
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 Chaitanya Paruchuri	Characterisation and control of tip noise in ducted fans	University of Southampton
Dr Auro Michele Perego	Novel tuneable dissipative optical frequency combs: from visible to mid-infrared	Aston 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 Alexander Powell	Meta-atom superscatterers for enhanced detection in congested electromagnetic environments	University of Exeter
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 Timothy Howard Runcorn	New fibre optics for advanced biomedical imaging	Imperial College London
Dr Brian Sheil	Intelligent real-time monitoring to inform underground construction processes	University of Oxford
Dr Nidhi Simmons	Enabling mission-critical applications through an intelligent URLLC framework	Queen's University Belfast
Dr Joseph van Batenburg-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 Yuriko Suzuki	Robust and non-invasive visualisation of intracranial arteries in patients with vessel-narrowing diseases in the brain	University of Oxford
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

Name	Subject	University
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 Ana 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 deionisation for East Africa	University of Bath
Dr Long Seng To	Enhancing community energy resilience using renewable energy in developing countries	Loughborough University
Dr Marta Vignola	Eco-engineered biofilters for sustainable removal of pesticides in drinking water	University of Glasgow
Dr Ton van den Bremer	Cleaning the ocean: understanding transport of plastic pollution by waves	University of Oxford
Dr Tingting Zhu	A clinical AI for tackling multimorbidities in hospitals in low-and-middle-income countries (LMICs)	University of Oxford

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 have a PhD awarded in the last four years.

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	University of Sheffield

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 Alexander (Sandy) Knowles	Titanium, steel and tungsten superalloys: engineering fracture and irradiation resistance	University of Birmingham
Dr Jan Andries Mol	Single-molecule electronics	Queen Mary University of London
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 Ross Drummond	High energy density battery pack design without compromising on safety	University of Oxford
Dr Saied El Fajori	Joint BEL and clutter loss wideband measurements in modern buildings	Durham University
Dr James Gooch	Multiplex aptamer biosensors for the standoff detection of nerve agents	King's College London
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 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 Despoina Kampouridou	Active non-Foster ultra-broadband and reconfigurable RF/microwave metamaterials	University of Birmingham
Dr Andrew Lamb	Gravity portals: enabling quantum sensing for enhanced border screening	University of Birmingham
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)	Imperial 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
Dr Marko Tesic	The role of explanation in (re)building trust in AI systems	Birkbeck, University of London

Industrial Fellowships

The 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 Mustafa Aziz	Coiled tubing integrity monitoring system	Modelling Engineering and Development Company Ltd	University of Exeter
Dr Nicholas Bojdo	Mitigating damage to aero engines in dusty environments	Rolls-Royce	University of Manchester
Dr Solomon Brown	Unlocking the potential of BECCS in the UK	Drax Corporate Ltd	University of Sheffield
Ms Stephanie Dawson	Delivering a revolution in train testing with digital twin technology	Hitachi Rail	University of Birmingham
Dr Andrea Diambra	CYCL-ON: introducing advanced cyclic soil modelling in offshore wind design	Gavin & Doherty Geosolution	University of Bristol
Dr Valentina Donzella	Smart data compression for automotive environmental perception sensors	ON Semiconductor	University of Warwick
Dr Suzanne Marie Embury	Round-trip test engineering for legacy software re-engineering	ARM Holdings	University of Manchester
Dr Raziye Farmani	Digital solutions for resilient urban water systems	Servern Trent Water	University of Exeter
Dr Mehreen Saleem Gul	Characterisation of bifacial photovoltaic modules	Wood	Heriot-Watt University
Dr Mohammed El Hajjar	Intelligent holographic MIMO transceiver design for next generation wireless systems	interDigital	University of Southampton
Dr Basel Halak	Artificial intelligence enhanced design for secure anti-tamper embedded devices	ARM	University of Southampton
Dr Michael Robert Jennings	Automotive qualified power semiconductor devices	Newport Wafer Fab Ltd	Swansea University
Dr Hongsin Kim	New paradigm for education in railway control and safety management	Risktec Solutions Ltd	University of Birmingham
Dr Abhishek Kundu	Data-driven robust optimization of aircraft wing in early stage design	Airbus Operations Ltd	Cardiff University
Dr Mathieu Lucquiaud	Innovation in technologies for carbon dioxide capture	C-Capture Ltd	University of Edinburgh
Dr Gerald Charles John Morgan	Modelling for natural flood risk management	Edenvale Young Associates	University of Bath
Dr Despina Moschou	Glucopatch: wearable devices for painless, user-driven glucose management	Caura Ltd	University of Bath
Dr Hussam Maki Muhamedsalih	Embedded metrology for advanced manufacturing	Paragraf Ltd	University of Huddersfield
Dr Andrew Nichols	Whole-life decision support modelling for rail drainage infrastructure	Network Rail	University of Sheffield
Dr Daniel Paluszczyszyn	Human centric co-simulation platform for CAV development, testing and validation	HORIBA MIRA Ltd	De Montfort University

Name	University	Industrial partner	Project title
Dr Stefanos Aldo Papanicolopoulos	Discrete-element modelling of elongated cylindrical particles	DEM Solutions Ltd	University of Edinburgh
Mr Ben Pritchard	Integrated mission management for autonomous systems	Thales UK Ltd	University of Southampton
Dr Mehrnoosh Sadrzadeh	Cross domain unified representations for content similarity	Research and Development, British Broadcasting Corporation	Queen Mary University of London
Dr Leonid Shpanin	Next-generation circuit breakers for enhanced performance of UK rail networks	Brush Switchgear Ltd	Sheffield Hallam University
Dr Elena Simone	A multi-sensor approach to design and control multiphase/multicomponent crystallisation processes	Syngenta	University of Leeds
Dr Eirini Velliou	Development of the next generation 3D reconstructed human skin	Unilever	University of Surrey
Dr Andrea Lecchini Visintini	Fueldraulic actuation systems for the next generation of turbofan engines	Rolls-Royce Control Systems, part of the Rolls-Royce Group	University of Leicester
Dr Pengzhu Wang	Smart rope with sensing capability using multifunctional materials (SENSING ROPE)	Technology Centre of Bridon-Bekaert the Ropes Group	Queen Mary University of London
Dr Liu Yang	A paradigm shift towards nonmetallic centrifugal slurry pumps	The Weir Group PLC	University of Strathclyde
Dr Kit Windows Yule	Novel positron imaging and euler-lagrange modelling of plastic recycling systems	Recycling Technologies	University of Birmingham
Dr Pavlos Zachos	Non-intrusive flow diagnostics in industrial testing for future aircraft configurations	Rolls-Royce	Cranfield University
Dr Hexin Johnson Zhang	Innovative engineered bamboo-timber composite materials	Intelligent Wood Systems Ltd	Edinburgh Napier University
Dr Zhenyu Zhang	Sustainable and eco-friendly (SAFE) consumer goods: a nano-formulation engineering approach	Procter and Gamble Technical Centres Ltd	University of Birmingham Edgbaston
Dr Huiling Zhu	Machine learning techniques for future mobile networks	British Telecom Group	University of Kent

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
Dr 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 Philip Cox	Functional morphology and the biomechanics of feeding in squirrels	University of York
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 Christine Hine	Emergent everyday ethics in infrastructures for smart care	University of Surrey
Dr Jennifer Hiscock	The role of qualitative research approaches in enhancing interdisciplinary teams' reflexivity and creativity in the gendered environment of supramolecular chemistry	University of Kent
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 Marco Iglesias	Thermophysical imaging for the characterisation of buildings' walls thermal performance	University of Nottingham
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 Lisa Mol	Remote scientific support for sustainable conservation of heritage damaged by explosives	University of the West of England
Dr Margarita Staykova	Material imagination	Durham University
Dr Douglas Stewart	Probing bio-geochemistry of alkaline waste impacted systems	University of Leeds
Professor Tamas Szekely	The impact of adult sex ratio on societies	University of Bath
Dr Jamie Ward	Exploring social interaction using theatre and wearable sensing	Goldsmiths, University of London

Regional Engagement Awards

April 2020 to March 2021

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 FREng	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 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 Adam Clare	MERLIN: Towards commercialisation	University of Nottingham
Professor Ken Thomas Victor 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

Name	Project title	University
Dr Ying Lia Li	Optical on-chip inertial sensors for precision monitoring and navigation	University College London
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
Dr Brian Sheil	Smart low-cost fibre optic force sensors	University of Oxford
Professor Tong Sun OBE FREng	Integration of optical fibre sensors into power electronics manufacturing process to create 'smart' power modules	City, University of London
Professor Tom Vercauteren	Intraoperative guidance with hyperspectral imaging for neuro-oncology: Towards regulatory compliance and improved user acceptability	King's College London
Dr Kit Windows-Yule	Positron emission particle tracking on-site (PEPT-OS)	University of Birmingham
Dr Tuck Seng Wong	EVOLUTOR – An automated biocatalyst engineering system for renewable bio-based feedstock utilisation	University of Sheffield

COVID-19 Fast Track Small Grants

The COVID-19 Fast Track Small Grants provided support for COVID-19 positive response work identified by the COVID-19 triage group.

Name	Project title	University
Professor Mohan Edirisinghe OBE FREng	Worldwide practice, design and manufacture of healthcare masks	University College London
Dr Jonathan Jeffers	COVID-19: Respiratory PPE project	Additive Instruments Ltd (Imperial College London)

Enterprise Fellowships

The 12-month Enterprise Fellowship programme provides equity-free funding, ongoing support, and expert mentorship to help entrepreneurial academics build the skills and confidence they need to maximise the success of their spin-out venture.

Through the programme, they will make exceptional connections with highly experienced and accomplished engineers – enjoying benefits that will last throughout their career.

Name	Project title	University
Dr Iris Kramer	ArchAI: automating archaeology assessments to speed-up and de-risk construction projects	University of Southampton
Professor Cathy Craig	Measuring and improving neural fitness	Ulster University
Dr Olufemi Johnson	The ProstaPalp: an objective, instant and simple test for improved prostate cancer diagnosis and management	Heriot-Watt University
Dr Benjamin White	Phlux – navigating the infrared	University of Sheffield
Dr Ruben Doyle	Additive instruments: force limiting tools to prevent bone fracture during hip replacement surgery	Imperial College London
Dr Lance Rane	Zappt: dynamic bracing and unloading of the knee for musculoskeletal injury and osteoarthritis	Imperial College London

IRT Enterprise Fellowships

The 12-month IRT Enterprise Fellowship programme provides equity-free funding, ongoing support, and expert mentorship to help international PhD graduates based in the UK build the skills and confidence they need to maximise the success of their startup.

Through the programme, they will make exceptional connections with highly experienced and accomplished engineers – enjoying benefits that will last throughout their career.

Name	Project title	University
Dr Miodrag Vidakovic	CitySense Ltd	City, University of London
Dr Youmna Mouhamad	Myana Naturals	University of South Wales
Dr Yan Zhao	Breathe battery technologies	Imperial College London
Dr Simon Baker	Versed AI: next-generation supply chain visibility	University of Cambridge
Dr Evangelos Zypeloudis	FibreSteer: commercialisation of a patented manufacturing process that leads to lighter composite structures at lower cost	University of Bristol
Dr Michael Ebner	Hypervision surgical: computational hyperspectral imaging	King's College London

ERA Foundation Enterprise Fellowship

The 12-month ERA Foundation Enterprise Fellowship programme provides equity-free funding, ongoing support, and expert mentorship to help entrepreneurial graduates who have demonstrated an exceptional innovation in engineering build the skills and confidence they need to maximise the success of their startup.

Through the programme, they will make exceptional connections with highly experienced and accomplished engineers – enjoying benefits that will last throughout their career.

Name	Project title	Startup company
Brendan Digney	Using AI and computer vision based systems to make industrial workplaces safer	Machine Eye Technology Ltd

Royal Commission for the Exhibition 1851 Enterprise Fellowships

The 12-month Royal Commission for the Exhibition 1851 Enterprise Fellowship programme provides equity-free funding, ongoing support, and expert mentorship to help entrepreneurial graduates who have demonstrated an exceptional innovation in engineering build the skills and confidence they need to maximise the success of their startup.

Through the programme, they will make exceptional connections with highly experienced and accomplished engineers – enjoying benefits that will last throughout their career.

Name	Project title	Startup company
Alexander Macdonald	Cycling glasses with fully integrated rear-view mirrors	Hindsight Technologies Ltd
Harish Pesala	SmartResilience: predict – prevent – protect	Balkerne Ltd
Reka Tron	Animal-free blood serum replacements to make cultivated meat affordable and profitable	Multus Biotechnology Ltd
Bella-Trang Ngo	Bringing deeptech to professional bra-fitting	Brarista Ltd
Varun Sarwal	Hammer: adaptive flight autonomy for drones	Hammer Flights Ltd
Matt Escott	Rocket engines utilising a novel thermodynamic cycle to enable truly dedicated launch of small satellites	Protolaunch Ltd

SME Leaders programme

The six-month SME Leaders programme focuses on building the skills needed to guide businesses through growth. It provides training, coaching, and mentoring from experienced entrepreneurs who understand the challenges of scaling up.

Awardees will build exceptional connections with our unrivalled network of engineers, researchers, alumni, Academy Fellows and industry partners. Awardees receive the benefits of membership for life.

Awardee companies	Awardee name	Awardee role
Bud Financial Ltd	Dr Eloise Taysom	Head of Product
KwickScreen	Michael Korn	Founder and Chief Innovation Officer
Lightpoint Medical Ltd	Dr Kunal Vyas	Head of Research
Micrographia Bio Ltd	Dr Julia Fan Li	Chief Executive Officer and Co-Founder
Mixergy Ltd	Dr Ren Kang	Director of Operations and Research (COO)
Monolith AI Ltd	Dr Richard Ahlfeld	Chief Executive Officer and Founder
MySense Group Ltd	Lucie Glenday	Chief Executive Officer
Oxford Ionics Ltd	Dr Thomas Harty	Chief Executive Officer and Co-Founder
Sensor Coating Systems Ltd	Dr Jörg Feist	Managing Director
Sycous Ltd	Joseph Collier	Director
Tribosonics Ltd	Christina King	Chief Commercial Officer
Wluper Ltd	Hami Bahraynian	Chief Executive Officer and Co-Founder
AirEx Ltd	Agnes Czako	Co-Founder and Managing Director
Caristo Diagnostics Ltd	Dr David Schottlander	Chief Technology Officer
Circuit Mind Ltd	Tomide Adesanmi	Chief Executive Officer
Plural AI Ltd	Camille Rougie	Chief Executive Officer
Poro Technologies Ltd	Dr Tongtong Zhu	Chief Executive Officer
RoboK Ltd	Hao Zheng	Chief Executive Officer
SLAMcore Ltd	Owen Nicholson	Chief Executive Officer
TangiO Ltd	Francesca Perona	Chief Innovation Officer
Utonomy Ltd	Claire-Elise Orleach	Head of Business Development
Vochlea Music Ltd	Kelly Angood	Chief Marketing Officer
WAYVE Technologies Ltd	Dr Alex Kendall	Chief Executive Officer
Oxford HighQ Ltd	Dr Aurélien Trichet	Chief Technology Officer

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 9 – awarded following the ‘Engineering inclusive cities’ symposium that took place virtually in July 2020

Names	Institutions	Project title
Dr Ellie Cosgrave Dr Heather Allen Dr Kalpana Viswanath Dr Nausheen Anwar Professor Marianne Vanderschuren	University College London Independent Consultant Safetipin Karachi Urban Lab University of Cape Town	Tell Me How You See It: dialogues for gender inclusive mobility
Dr Alejandro Gallego Schmid Dr Muiywa Oyinlola Dori Nguyen Samip Sigdel	University of Manchester De Montfort University Utopia Green Decision Labs and Research	Assessing the informal waste sector contribution to Nepal's circularity transition
Dr Emmanuel Matsika Dr Alireza Moghayedi Dr Abid Mehmood Ifananya Chukwueke Professor Marianne Vanderschuren	Newcastle University University of Cape Town Cardiff University University of Nigeria Nsukka University of Cape Town	Inclusive and accessible public transport system for women and persons with reduced mobility (PRMs)
Dr Kourosh Behzadian Dr Leo Choe Peng Dr Karen Blay Dr Abid Mehmood Dr Isaac Akinwumi Dr Alireza Moghayedi Vasilena Vassilev Joaquin Diazsolano Dr Poh Phaik Eong	University of West London Universiti Sains Malaysia Loughborough University Cardiff University Covenant University University of Cape Town P+ Studio TEKMANN Company Monash University	Strategic planning of urban water reuse interventions for community resilience
Dr Ellie Cosgrave Dori Nguyen Anupam Yog	University College London Utopia National University of Singapore	Understanding the built environment's impact on mental health in Kathmandu
Dr Abid Mehmood Dr Karen Blay Dori Nguyen Vasilena Vassilev Dr Rania Aburamadan Dr Alireza Moghayedi	Cardiff University Loughborough University Utopia P+ Studio Middle East University University of Cape Town	Interplay between density, design, and wellbeing towards developing resilient cities

Tranche 10 – awarded following the ‘Smart communities’ event that took place virtually in February 2021

Names	Institutions	Project title
Dr Mark Symes Dr Wei Lun Ang Richard Mori Christian Ngang	University of Glasgow Universiti Kebangsaan Malaysia Mesh Power Research and Development Without Borders	Removing persistent organic pollutants from the water supply using sonoelectrochemistry
Dr Marco Haenssger Mohammad Daud Hamidi Professor Chris Greenwell Dr Edward Stevenson Professor Milica Vasiljevic	University of Warwick Durham University Durham University Durham University Durham University	Low-cost water purification at the household level in Kabul
Dr Steven Sam Dr Lara Piccolo Dr Soraya Kouadri Sylvester Dalington	Brunel University London Open University Open University Mamie Foundation	Gendering a smart community through a user-centred technology for tackling violence against women
Dr Sivapriya Bhagavathy Dr Khaled Rabie Dr Amrit Chandan Dr Laura Allerston Joseph Mungai Dr Bernie Jones	University of Oxford Manchester Metropolitan University Aceleron Energy Aceleron Energy Aceleron Energy Smart Villages Research Group	PV – second-life battery system for rural schools: Kenyan case study

Frontiers Champions grants

Grants worth up to £10,000 to allow members of the Frontiers community to bring together their peers through regional or thematic networking activities, such as networking events, webinars, meet-ups, workshops and other activities.

Name	Institution	Project title
Dr Lakshmi Rajendran	Anglia Ruskin University	PIVOT – re-visioning peripheral geographies: strategies for resilient urban development in the Global South
Askwar Hilonga	Gongali Model	Scale-up of low-cost water filter (Nanofilter) through Frontiers Alumni Network
Zacharia Kimengich	Zakam Orthopaedic Company	Pediatric hip spica with double extension traction
Dr Boksun Kim	University of Plymouth	Recycled aggregate concrete in South-East Asia
Dr Alireza Moghayedi	University of Cape Town	Sustainable innovative affordable housing initiative (SIAH-I)
Miguel Malnati	Bio Natural Solutions	Bio-digital platform for latam challenges
Diego Almendrades	EcoSwell	Global networks for global challenges in Peru's drylands
Andre Johan Nel	Eco-V	Promoting sustainable GreenTower technology for schools supplemented by online skills and entrepreneurship development
Professor Emeritus Siri Hettige	Center for Development Research and Innovation	Networking for advancement of solutions to emerging issues (NEASE)
Dr Akino Tahir	Resilience Development Initiative	Building a community of practice on urban refugee issues for a better and more inclusive urban governance
Dori Nguyen	Utopia	Designing a network for urban practitioners across emerging Asian cities
Yung Wey Chong	Universiti Sains Malaysia	AISC: artificial intelligence research, development and innovation network for sustainable cities
Harry Chaplin	Tatirano Social Enterprise	Early MadLab: strengthening resilient local and international networks for re-centering design for development in-situ (Madagascar)

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 4 – awarded following the ‘Disaster resilience’ symposium that took place in Istanbul, Turkey, in March 2020

Names	Institutions	Project title
Dr Panagiotis Kloukinas Dr Kate Crinion Dr Jair Torres Dr Joana Fonseca Dr Mtafu Manda	University of Greenwich Belfast School of Architecture and the Built Environment SAR Global Consulting City, University of London Mzuzu University	Bolstering resilience to cross-border disasters
Dr John Douglas Susan Long Dr Max Hope Dr Enrico Tubaldi	University of Strathclyde Field Ready Leeds Beckett University University of Strathclyde	Investigating approaches to encourage seismic retrofitting in less-developed countries
Dr Alejandra Albuerne Dr Farnaz Arefian Dr Derya Deniz Dr Marlon Era Professor Zeynep Gül Ünal Leila Ben-Gacem Rohit Ranjitkar	University College London Silk Cities Ozyegin University De La Salle University Yıldız Technical University Blue Fish Kathmandu Valley Preservation Trust	Towards mobilising intangible heritage for recovery and resilience
Dr Alexey Youseff Dr Achala Jayatilleke Dr Amila Ratnayake Dr Roshan Hewapathirana Dr Pamod Amarakoon Professor David Clifton	University of Oxford University of Colombo University of Colombo University of Colombo University of Colombo University of Oxford	Enabling resilient and sustainable eHealth ecosystems in LMICs
Dr Naeimeh Jafarifar Dr Alireza Bagheri Sabbagh Dr Ebru Gencer Dr Viktor Doychinov Dr Derya Deniz Professor Eser Çakti	Robert Gordon University University of Aberdeen Center for Urban Disaster Risk Reduction and Resilience University of Leeds Ozyegin University Bogazici University	Low-carbon seismic-resistant buildings for a densely populated city; Istanbul
Dr Irene Manzella Dr Nejan Huvaj Sarihan Dr John Douglas Dr Michael Humann Dr Hwa Kian Chai Dr Emin Yahya Mentese Dr Joana Fonseca Dr Derya Deniz Zara Abbey Professor Iain Stewart Dr Meltem Şenol Balaban Dr Canay Dođulu	University of Plymouth Middle East Technical University University of Strathclyde University of Liverpool University of Edinburgh Istanbul Metropolitan Municipality University of London Ozyegin University Snocode University of Plymouth Middle East Technical University Turkish Education Association University	NET: New technologies and participatory approaches for disaster resilience

Tranche 5 – awarded following the ‘Resilient resource use’ event that took place virtually in November 2020

Names	Institutions	Project title
Dr Parimala Shivaprasad Dr Mohit Arora Professor Denny Ng Dr Ravishankar R	University of Bath University of Edinburgh Heriot-Watt University Dayanander Sagar College of Engineering	Flower waste bio-refinery – an innovative approach for flower waste valorisation
Dr Caitlin Bentley Dr Kenisha Garnett Dr Mohit Arora Dr Ibukun Modupe Adesiyun Tasfin Aziz Dr Chuckwunonye Ezeah Dr Shakeel Khan Liberatha Leonidas Kawamala	University of Sheffield Cranfield University University of Edinburgh Achievers University BRAC University Alex Ekwueme Federal University University of Pakistan Libe Green Innovation	Data and systems-mapping for improving developing country circular economies
Dr Ana Bras Dr Irene Appeaning Addo Dr Chris Beckett Dr Ibrahim Yakubu Dr Frederick Owusu-Nimo Dr Alexandre Gagnon Dr Yuner Huang Dr Mohit Arora	Liverpool John Moores University University of Ghana University of Edinburgh University of Development Studies Kwame Nkrumah University of Science and Technology Liverpool John Moores University University of Edinburgh University of Edinburgh	Adaptation and self-recovery solutions for housing flooding resilience in Ghana
Dr Aris Chrysovergis Dr Pertina Nyamukondiwa Dr Emmanuel Matsika Dr James Tembo Charity Munsaka Dr Chizyuka G Chizyuka Dr Prasad Ponnappalli	Manchester Metropolitan University Institute for Rural Development Newcastle University University of Zambia University of Venda University of Venda Manchester Metropolitan University	Distribution and transportation of rainwater for rural communities
Dr Keith Hyams Ruth Canagarajah	University of Warwick Busara Center for Behavioral Economics	New approaches to equitable resilience: psychological indicators using psychometric profiling
Dr Ana Bras Dr Shakeel Khan Professor Andy Shaw Professor Zaili Yang Dr Muhammed Junaid Dr Yasir Iqbal Abdul Malik Dr Christos Kontovas	Liverpool John Moores University University of Pakistan University of Warwick Liverpool John Moores University University of Peshawar PREPARED – NGO Gwadar Port Extension-Government of Pakistan Liverpool John Moores University	Building coastal resilient infrastructure in Gwadar Port, Pakistan

Leaders in Innovation Fellowships

The Leaders in Innovation Fellowships (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.

Name	Country	Innovation title
Alessandro Silveira Davi	Brazil	Aerospace engineering project
Dr Ana Paula Justiniano Régo	Brazil	Justy BioSolutions, J-1100
Arturo Justiniano Régo	Brazil	Sagan Bionics, upper limb myoelectric prosthesis with haptic feedback
Dr Jonathan Baumi	Brazil	Poliverde, textile polyamide 66 recycling and reverse logistics
Leonardo Foti	Brazil	Hyla, biosensor for early cancer diagnosis
Pedro Henrique Benin Aschidamini	Brazil	AqüiEnge, aquaculture management
Professor Pericles Khalaf	Brazil	Plasma Fert, plasma systems for local fertiliser production
Dr Renata Francielle Bombaldi de Souza	Brazil	TissueLabs
Taís de Moraes Alves	Brazil	ArchFlex
Victor Hochgreb de Freitas	Brazil	GoBots, generating knowledge from unstructured text messages and descriptions
Professor Ben Niu	China	SWARM, intelligent disease diagnosis assistant system
Bo Li	China	Industrialisation of novel regenerative cranial implants
Professor Cong Wang	China	Fused fluxes for submerged arc welding
Professor Fei Chen	China	Energy Technology Ltd, graded seal ring, core component of large-scale energy storage system
Fengya Tong	China	Sinopec Corporation, a novel chemical hydrogen storage technology
Dr Gengyuan Liu	China	Urban ecological environmental big-data platform (Ecological Value Map: EV-MAP)
Dr Jun Li	China	Ethylene carbonate-basis of lithium-ion battery electrolyte
Dr Lei Yang	China	Nakai BioTech, injectable bioresorbable bone cement (iBC)
Dr Yi He	China	Full-space-time monitoring system for operation status of commercial vehicles
Dr Yu Liu	China	Resthetic Bio (Shanghai)
César Aguirre	Colombia	IAS software, Bikey
Jessica Bibiana Alba Torres	Colombia	Eko Group H2O+ – Ekoshower H2O+
Jonny Alexander Umaña Guevara	Colombia	Nebulón
Juan David Duran Hernandez	Colombia	EcoGox
Juan Pablo Noreña	Colombia	Power Frames, Instratus
Leidy Cuestas	Colombia	KitSmile, in home rehabilitation kit for children with cerebral palsy

Name	Country	Innovation title
Dr Lina María Chica	Colombia	Permeable concrete ditch (PCD)
Maria Isabel Vargas	Colombia	Grinsup, Powdered superfoods
Octavio Torres	Colombia	Valopes
Santiago Echavarría	Colombia	ManagEV
Dr Abdelrahman Khattab	Egypt	EgyVessel
Professor Mahmoud Elsabahy	Egypt	Dressing to stop bleeding and save lives
Professor Mahmoud Sitohy	Egypt	Cationic proteins as plant antiviral agents
Dr Mai Saleh	Egypt	HR Health Promotion System, the intellectual style inventory (ISI)
Dr Mehanna Hani	Egypt	New technology for harvesting and cultivation practices of dates palm
Dr Mohammed Salem	Egypt	ONVISION360 – VeVi
Dr Nehad Amer	Egypt	Green chemistry, enzymatic production of valuable pharmaceutical compound
Dr Noha Elessawy	Egypt	Graphoenix
Dr Sara Abdelsalam	Egypt	The Math Hub, the math guru
Ajinkya Dhariya	India	Saneco, sanitary napkin disposal and recycling system
Anshul Goyal	India	AiBorne Tech, WorkshopXR
Ansuman Das	India	FemtoFarad, BornMeat, plant-based meat analogues
Kayavan Shah	India	Cargar, Electron
Megha Das	India	Amounee Handloom Ventures Pvt Ltd
Rohan Aggarwal	India	Vidcare Innovations
Dr Nusrat Sanghamitra	India	CyGenica, CyVec platform (a non-viral delivery system for targeted delivery of genome editing toolbox)
Sanjay Maurya	India	Urban Air Labs, Ubreathe
Shani Pandya	India	Imagine Powertree Private Ltd, Powertree
Sri Hari Rao Sanghi	India	Agnisumukh Energy Solutions Private Ltd
Aia Abul-Haj	Jordan	SOLVillion-DWWS
Dr Ala Khalifeh	Jordan	Teletera, a bandwidth efficient live video platform for online teaching and collaboration
Amna Ramadan	Jordan	Smarty plug
Iyad Aldasouqi	Jordan	Chemical laboratory inventory system
Kyle Cordova	Jordan	AquaPoro
Marwa Alaqarbeh	Jordan	Labeba, treatment of olive mill wastewater by magnetic nanomaterial
Dr Mohammed Rasool Qtaishat	Jordan	Water for all
Raghad Darwish	Jordan	IoT sensors self-charging battery
Yazan Alkurdi	Jordan	ChangeCom fintech platform
Ziad Abu Ayyash	Jordan	Sannula Safe MedTech
Anncarol Karanja	Kenya	Ecohub Solutions
Antony Kirori Ndung'u	Kenya	Green Pencils Ltd, infinity studs

Name	Country	Innovation title
Bonface Jiveri	Kenya	Delivering bio gel fuel to rural households
Fidel Makatia	Kenya	TibaVent Ventilator
Fredrick Muiru Nyoike	Kenya	CLEANAIRKE, outdoor pollution controller
Irene Etyang	Kenya	Akimaa Africa Ltd, tasty millet meal bar
Dr Joseph Mwitii Marangu	Kenya	Circular Cement
Joseph Ondari Nyakundi	Kenya	Jay Leatherman Ltd – enzyme technology in leather processing
Mishael Atuti Machora	Kenya	Kulaorganic Enterprises, Enchoke solar-powered remote beehive management system
Otieno Evance	Kenya	Cook and light clean technology
Dr Ahmad Majidi Abdul Rani	Malaysia	PMEDM, novel system for simultaneous machining and coating of implants
Dr Hee Min Teh	Malaysia	Pneumatic floating breakwater
Dr Man Kee Lam	Malaysia	Mass production of microalgae biomass using low-cost nutrients source for biodiesel production
Professor Nor Aishah Saidina Amin	Malaysia	BiOz-CMC, commercial grade carboxymethyl cellulose production from ozone-treated empty fruit bunch
Dr Phaik Eong Poh	Malaysia	BioMF, decentralised biodegradable membrane greywater filtration system
Dr Rosdiadee Nordin	Malaysia	Aerial navigation and geo-fencing for medical intervention
Dr Rozzeta Dolah	Malaysia	Dr Z NanoFuel Patch, anti-pollution device and fuel economiser
Dr Shamrulazhar Shamzir Kamal	Malaysia	Nutraboost, next generation functional food
Dr Wan Ling Elaine Chan	Malaysia	A computer-aided decision support tool for pancreatic cancer diagnosis
Dr Yeek-Chia Ho	Malaysia	LENFLOC
Aída Chávez Zapata	Mexico	Hola Edtech SAPI de CV (Holacode)
Alba Rebeca Gutierrez Melendez	Mexico	AxSat
Claudia Romero	Mexico	Biomexanik-Kinestesia
Dr Dena Pourjafari	Mexico	SolarisSur, low-cost nanostructured inks for the manufacturing of printable photovoltaic devices
Diego Alejandro Castorena	Mexico	SICTE BIOTEK-X-ICLÉT
Federico Manriquez	Mexico	Electrochemical hydrogenation of edible oils
Juan Francisco Salcido	Mexico	BeO authenticity systems
Professor Laura Almanza	Mexico	VitalFlow™
Dr Oscar Javier Solorio Pérez	Mexico	BRANDIUM
Ramón Alejandro De Hoyos Cantú	Mexico	ARBIO – biological advanced air filtration systems
Alejandra Cuba Canales	Peru	Caopack
Alvaro Echevarria	Peru	FERTILEV
Jenyfer Steysi Pineda Zapana	Peru	Sutu Fitofiltros/Depurator Ecofilters

Name	Country	Innovation title
Jorge Heyul Chavez Arias	Peru	Technological development of a system for remote monitoring and diagnosis of COVID-19 rehabilitation patients through a low-cost device using digital spirometry based on expired air flow
José Carlos Chahuara Quispe	Peru	Effeta Data Lab
Jose Luis Vilcahuaman Tovar	Peru	Ingenieros Top: advanced training platform applying micro-learning, Yerkes-Dodson law application, and machine learning for professionals in the infrastructure sector
José Luis Bohórquez Bendezú	Peru	Pukio Ingeniería S.A.C. Pukio: water for everyone and smart farming
Roberto Fidel Chávez	Peru	Wego, integrated management, operation and collection system for public transport companies
Roberto Takao Shimabukuro	Peru	Inventum, Daedalus
Rolando Cruzado	Peru	Juzto, robotic solutions from Industry 4.0 for intelligent disinfection and distribution of Peruvian healthy food from small agricultures to commercialisation
Annemie Pretorius	South Africa	BioCODE, gum inflammation biosensor
Boitumelo Makgabutlane	South Africa	Waste-derived building and construction composite materials reinforced with carbon nanomaterials
Bonga Thombeni	South Africa	Enhle, home powerbank
Dr Deon Pieter Neveling	South Africa	Biotikum
Dr Jo-Ann Passmore	South Africa	Genital inflammation test (GIFT)
Dr Mehdi Safari	South Africa	GMS (Green Mining Solutions)
Nigel Nkundhlande	South Africa	Sentian, Xplorer
Pontsho Moletsane	South Africa	Nosetsa
Dr Sean Perry	South Africa	Treatment of acid mine drainage (AMD) using organic nano-composites
Xabiso Lombo	South Africa	Guardian Gabriel
Dr Deanpen Japrunng	Thailand	GO-Sensor, early kidney checkup
Professor Joongjai Panpranot	Thailand	CrystalLyte, carbon nanomaterials from CO ₂
Dr Naraporn Somboonna	Thailand	Prime portable genetic test technology – iDNA
Dr Nitipol Ken Srimongkolpithak	Thailand	BIOFLOW, sustainable pharma solution
Dr Piramon Karnkunwithit	Thailand	Personalised diabetes Thai traditional medicine
Dr Sanchai Kuboon	Thailand	BioLight
Dr Sasimanas Unajak	Thailand	Aptasensor – from SC healthtech company
Dr Supansa Yodmuang	Thailand	iTiss, iTiss ACI
Dr Udom Sae-Ueng	Thailand	Wilt Away, biocontrol solution for wilt disease in tomato and chili
Dr Warangkhan Phanwanich	Thailand	Petaneer, AquaTrek
Dr Bulent Buyuk	Turkey	RADAP-SWMED
Dr Deniz Ilhan Topcu	Turkey	iLab, clinical laboratory sample assistant
Dr Furkan Turker Saricaoglu	Turkey	Production of food grade nanofibers
Dr Gorkem Astarcioglu	Turkey	Hekimanne, TempStar

Name	Country	Innovation title
Dr İlknur Meric Turgut	Turkey	ICORAL, insect oil for animal feed
Dr Mahmud Tokur	Turkey	NESSTEC energy and surface technologies
Dr Mehmet Akif Erdoğan	Turkey	AgrOne, agricultural monitoring information packages
Dr Onder İşlek	Turkey	ITouch accessible educational technologies
Dr Osman Kara	Turkey	Production of Berr-Nur penetrometer
Chi Thanh Tran	Vietnam	NTTU, CRE plate
Dr Duy Nguyen	Vietnam	Veins finder/veins expert
Dzung Pham	Vietnam	OM9, new potential rice variety
Dr Ha Quang Thinh Ngo	Vietnam	Ngo Ha Gia, iNetwork
Minh Nguyen	Vietnam	Vietnam commercialisation accelerator programme (VCAP)
Thang Le Dang	Vietnam	VietMani
Van Nhan Le	Vietnam	Aquatic feed attractant preparation originated from medicinal plants

Leaders in Innovation Fellowships Advance Programme

The Leaders in Innovation Fellowships (LIF) Advance Programme is a bespoke, focused programme of relationship-building and business growth activities, which is open to alumni of the LIF programme. Participants receive tailored relationship-building opportunities in the UK with people and organisations that can help them fulfil their commercial potential. There are also opportunities to connect and collaborate with other members of the global LIF community working on complementary innovations.

The LIF Advance cohort brings together one innovator from each LIF country, and each LIF Advance cohort has a different thematic focus. The theme of this year's LIF Advance cohort was 'Disability inclusion and reducing inequalities in healthcare'.

Name	Country	Innovation title	LIF cohort
Dr Diego Oliveira	Brazil	Extremus, smart implant surface	LIF4
Professor Dr Guangyin Yuan	China	Biodegradable magnesium-based bone implants	LIF3
Professor Alher Mauricio Hernandez	Colombia	GIBIC MEDTECH, smart bedding	LIF5
Dr Sherif Abdou	Egypt	Gold/magnetic nanoparticle-based test for hepatitis C	LIF4
Dr Pankaj Parashar	India	Cutting Edge Medical Devices Ltd	LIF5
Brian Mwitw Mwenda	Kenya	Hope Tech Plus Ltd, the sixth sense	LIF6 and Africa Prize for Engineering Innovation
Dr Che Fai Yeong	Malaysia	Compact rehabilitation robot	LIF4
Andrea Siller	Mexico	Bioana, RECOPAD – urine collector device for dependent patients	LIF5
Enzo Fernando Romero	Peru	Giving a hand	LIF5
Professor Dr Nilo Bugtai	The Philippines	LAPARA, robotic articulating laparoscopic instrument	LIF3
Professor Boonrat Lohwongwatana	Thailand	Meticuly	LIF2
Dr Asiye Karakullukçu	Turkey	Aksense, diagnosis systems for healthcare-associated infections	LIF4
Dr Ngo Tat Trung	Vietnam	Sepsis@Quick-diagnosis	LIF4

LIF Community Grant Programme (LIF Champions)

The Leaders in Innovation Fellowships (LIF) Community Grant Programme supports past and present LIF participants to build and deliver high impact, collaborative community projects or activities that demonstrate the development of LIF participants networks, nationally and internationally.

Name	Country	Project title	LIF cohort
Lisane Valdo	Brazil	LIF BR forum	LIF2
Jorge Mario Patino-Acevedo	Colombia	Uno a uno (extension)	LIF4
Mahmoud Hammoudeh	Jordan	International LIF technical collaboration for community services	LIF6
Jack Oyugi	Kenya	LifChat	LIF5
Betty Wanjiru King'ori	UK	Kenya committee on engineering capacity building (KCECB)	LIF5
Dr Hazlina Selamat	Malaysia	LIFting AI – lifting AI innovations in ASEAN	LIF4
Dr Wan Fazlida Hanim Abdullah	Malaysia	Malaysia LIF support committee: prototyping to production	LIF6
Dr Hassan Mohamed	Malaysia	LiF Vlog: connecting inventors, showcasing inventions	LIF5
Alejandra Alvarado	Mexico	LIFting MX (extension)	LIF6
Giannina Honorio	Peru	RIE HUB (Research Innovation and Entrepreneurship Hub)	LIF6
Keneiloe Kganane	South Africa	An inclusive innovation ecosystem for commercialisation	LIF5
Atchara Poomee	Thailand	LIF Link Thailand	LIF5
Dr Le Thi Nhi Cong	Vietnam	Connect and sustainably develop the LIF ecosystem in Vietnam	LIF6
Zaid Mahmoud	Jordan	Growing the Jordan Leaders in Innovation Fellows club	LIF6
Jorge Luis Garcia Garzon	Colombia	Uno a uno	LIF4
Ashif Hujjatul Islami	Indonesia	LIF talks – connecting others	LIF6
Abdulkarim Albanna	Jordan	Launching the Jordan Leaders in Innovation Fellows club	LIF6
Abeer Albashiti	Jordan	LIF around Jordan	LIF6
Stephen Moses	Kenya	Project LIF pamoja (together)	LIF4
Dr Joy Nyawira Riungu	Kenya	Accelerating uptake of innovations for economic development	LIF5
Dr Paul Onyango Okumu	Kenya	The innovations and entrepreneurs (TIE) hub	LIF6
Dr Jaspaljeet Singh Ranjit Singh	Malaysia	Fostering technical entrepreneurship in research communities through localised content and industrial experts	LIF4
Dr Thariq Hameed Sultan	Malaysia	Knowledge transfer: an industry level perspective	LIF4
Luis Enrique Hernandez	Mexico	LIFting México	LIF6

Name	Country	Project title	LIF cohort
Dr Margarita Tecpoyotl Torres	Mexico	Virtual LIF conference on technology innovation, and creation of Digital LIF Community	LIF2
Monica Alexandra Chavez Llanca	Peru	Development community Linkers Latam that seeks to promote a culture of innovation and entrepreneurship in the Peruvian ecosystem spreading the culture of share to grow	LIF6
Linah Pununu Maphanga	South Africa	Digital technology training for smallholder farmers in South Africa	LIF5
Dr Emine Hande Karagedik	Turkey	Supporting the commercialisation process of entrepreneurs with public support	LIF6
Dr Ozge Cevik	Turkey	Improving the impact of COVID-19 on development in university-industry cooperation	LIF6
Dr Ahmet Can Erten	Turkey	One LIFe (Leaders in Innovation Fellows Entrepreneurs) to make a difference within the Turkish entrepreneurship ecosystem	LIF6

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 2020, as part of a call focused on sustainable infrastructure.

Lead applicant	Organisation	Country	Project title
Dr Dorothy Okello	College of Engineering, Design, Art and Technology (CEDAT), Makerere University	Uganda	Integrating resilience and sustainability in the planning for infrastructure projects in Uganda (RESULTS)
Vera Bukachi	Kounkuey Design Initiative	Kenya	Integrated and inclusive infrastructure framework (3IF) for Kenya
Professor Dr John Thuo Githaiga	Moi University	Kenya	Capacity building towards an integrated resources platform for renewable energy access in Kenya
Alex Ndibwami	University of Rwanda	Rwanda	A toolkit for built environment practitioners to measure and reduce embodied carbon in Rwanda

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 December 2020, as part of a call focused on building the capacity of spoke universities.

Lead applicant, hub university	Country	Spoke university partner	Industry partners	Project title
Dr Kaisan Muhammad Usman, Ahmadu Bello University, Zaria	Nigeria	University of Jos	Trustlub Fluid Resources Ltd (TFRL)	Academia-industry alliance for effluent management with bio-coagulants in Nigerian oil and gas industries
Professor Ibrahim Ahmad Rufai, Bayero University	Nigeria	Kano University of Science and Technology (KUST)	GB Tannery Ltd	Application of anaerobic digestion technology for tannery effluent treatment in GB Tannery Ltd, Kano
Abdullahi Abubakar Kawu, Ibrahim Badamasi Babangida University	Nigeria	Baze University, Abuja	SEDI and Seamless Multi-Links Nigeria Ltd	Development of virtual laboratory (VLAB) for science and engineering students – a post COVID-19 pilot scheme
Dr Bernadette Sabuni, Masinde Muliro Institute of Science and Technology	Kenya	Dedan Kimathi University of Technology	Institution of Engineers Kenya (IEK) and Efficient Electrical Engineers	Engineering curriculum review through industry-academic linkages to support knowledge transfer and sharing
Dina Machuve, Nelson Mandela African Institution of Science and Technology	Tanzania	Arusha Technical College (ATC)	Tanzania Engineering and Manufacturing Design Organization	Industry-academia partnership platform for addressing sustainable development challenges in Tanzania
Dr Musa Tanko Zarmai, University of Abuja	Nigeria	Usman Danfodio University Sokoto	NASENI Solar Energy Ltd	Renewable energy utilisation: accelerating diffusion of solar power systems

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, where a winner is chosen; all four finalists receive cash prizes.

Name	Country	Innovation
2020 winner		
Charlette N'Guessan	Ghana	BACE API
2020 finalists		
Aisha Raheem	Nigeria	Farmz2U
Dr William Wasswa	Uganda	PapsAI
David Tusubira	Uganda	Remot
2021 shortlist		
Orlorunfemi Jacob Azundah	Nigeria	Aevhas
Indira Aliyana Tsengiwe	South Africa	BlueAvo
Elohor Thomas	Nigeria	CodeLn
Tshepo Mangoele	South Africa	Dissolv Bioplastic
Ndeye Marie Aida Ndieguene	Senegal	I3S
Pazion Cherinet	Ethiopia	Orbit Health
Eyram Amedzor	Ghana	Jumeni Field Service Software
Kombo Ekra Noël N'guessan	Côte d'Ivoire	KubeKo
Armelle Sidje Tamo	Cameroon	Biopackaging
Olubenga Olufemi Olubanjo	Nigeria	Olubenga
Atish Shah	Tanzania	Mkono-1
Yusuf Bilesanmi	Nigeria	ShiVent
Fatou Juka Darboe	The Gambia	Make3D Medical
Faith Adesemowo	Nigeria	Social Lender
Olalekan Taofeek	Nigeria	RealDrip
George Boateng	Ghana	SuaCode.ai

Project Care: COVID-19 African Rapid Entrepreneurs

Project CARE was launched in March 2020 with a goal to mobilise the Academy's alumni of African-based entrepreneurs and leverage the Fellowship and their networks to help strengthen capacity and provide resources to address the consequences and impacts of COVID-19 in African communities in a constructive and sustainable way.

Name	Country
Arnold Achiri	Cameroon
Bernice Dapaah	Ghana
Charles Antipem	Ghana
Daniel Taylor	Ghana
Sesinam Dagadu	Ghana
Josephine Marie Godwill	Ghana
Beth Koigi	Kenya
Brian Mwenda	Kenya
Kenneth Guantai	Kenya
Wesley Micah	Kenya
Anthony Karimi Muthungu	Kenya
Eric Murithi Kithinji	Kenya
James Ochuka	Kenya
Joel Kariuki	Kenya
Joy Nyawira Riungu	Kenya
Levit Nudi Onyango	Kenya
Samwel Kimani Mwaniki	Kenya
Stephen Moses	Kenya
Zacharia Patrick Kimengich	Kenya
Catherine Wanjoya	Kenya
Chinenye Justin Nwaogwugwu	Kenya
Frida Njogu-Ndongwe	Kenya
Jack Oyugi	Kenya
Kelvin Gacheru	Kenya
Catherine Chaima	Malawi
Dr Lateef Ayodele Sanni	Nigeria
Obi Igbokwe	Nigeria
Olufemi Odeleye	Nigeria
Aishat Raheem	Nigeria
Andre Nel	South Africa
Dr Maryam Jordaan	South Africa
Kendy Madisha	South Africa
Ketlareng Polori	South Africa

Name	Country
Neo Hutiri	South Africa
Boipelo Sebesho	South Africa
Busisiwe Beryl Moloji	South Africa
Khumbulani Mpofu	South Africa
Nokulunga Zondi	South Africa
Nondumiso Grace Mthembu	South Africa
Ntokozi 'Meloh' Ntleko	South Africa
Simon Wijnberg	South Africa
Sizwe Nkululeko Mchunu	South Africa
Stephanus Viljoen	South Africa
Dr Wilfred Fritz	South Africa
Winston Nxumalo	South Africa
Zinhle Ngidi	South Africa
Linah Pununu Maphanga	South Africa
Dr Askwar Hilonga	Tanzania
Anne Rweyora	Uganda
Brian Gitta	Uganda
Brian Turyabagye	Uganda
William Wasswa	Uganda
Muzalema Mwanza	Zambia
Ian Mutamiri	Zimbabwe

Engineering X

Engineering X is an international collaboration founded by the Royal Academy of Engineering and Lloyd's Register Foundation that brings global experts together to engineer change. 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 currently running six missions and looking for new partners.

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 that are highly interconnected and interdependent on one another. As the COVID-19 pandemic has demonstrated, when one complex infrastructure system fails many other complex systems are also affected and this can have catastrophic consequences for people's lives. The Safer Complex Systems mission aims to enhance the safety and resilience of complex infrastructure systems globally.

The Safer Complex Systems mission held two international workshops – *Exploring the safety of super-sized structures* (May 2020) and *Safer Complex Systems* (September 2020). Workshop participants identified a lack of case studies for engineering education and professional development relevant to complex systems. The mission has now awarded 19 case study awards.

Project lead name	Project lead organisation	Project lead country	Project title
Matías René Rojas De Luca	Socialab	Chile	Social Innovators as a human sensing network solving humanitarian challenges of the 21 st century
Dr Giuliano Punzo	University of Sheffield	UK	Cyber-physical system shortfalls in the 2011 Brisbane flood
Dr Jonathan Gosling	Cardiff University	UK	Complex systemic failures in the Edinburgh schools case
Professor Richard Taylor	University of Bristol	UK	Improving resilience to major safety events in industry
Professor Chengji Kuo	University of Strathclyde	UK	Ferry disaster provides vital global safety lessons
Dr Chris Elliott MBE FREng	Pitchill Consulting	Switzerland	Bexley train crash – a system failure
Dr Richard Judge	Bartlett Judge Associates	UK	Planned adaptive regulation – as applied to the Dutch 'Delta Programme'
Professor Roger Kemp MBE FREng	Lancaster University	UK	The Hatfield derailment – a problem of governance?
Brian Tomlinson	Network Rail	UK	A systems approach to reducing train accident risk
Danielle Antonellis	Kindling	USA	A comparative study of fire risk emergence in informal settlements in Dhaka and Cape Town

Project lead name	Project lead organisation	Project lead country	Project title
Dr Yin Jin Janin	TWI	UK	Structural integrity management of energy infrastructure
Professor Steve Gwynne	Movement Strategies	UK	Vulnerability and evacuation strategies of rural communities threatened by wildfire
Dr Kristen MacAskill	University of Cambridge	UK	Australian climate extremes and building transport network resilience
Professor Andrés L. Medaglia	Universidad de Los Andes	Colombia	Understanding the dynamics of an emergent cycling transport system during the COVID-19 pandemic
Dr Richard Judge	Bartlett Judge Associates	UK	Beyond the limits of knowledge – navigating uncertainty in complex systems
Claire Travers	Field Ready	Sweden	Analysing humanitarian supply chain crashes, recovery and alternatives during COVID 19
Professor Dr Joachim Sturmborg	Newcastle University	Australia	Systemic failures in nursing home care
Dr Brian Haddock	Network Rail	UK	Delivering a seasonally agnostic railway
Professor Francis Livens	University of Manchester	UK	Nuclear safety in organisations and operations – improvement through simplification

Safer End of Engineered Life

The Engineering X Safer End of Engineered Life programme (£5 million, five years) seeks to address the challenges of decommissioning, dismantling and disposal of products and structures at the end of their life to improve safety globally. In its first year, the programme 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.

Organisation	Partners	Project name
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
Newcastle University in Singapore	Bangladesh University of Engineering and Technology (Bangladesh) Kabir Steel Ltd (Bangladesh)	Safety envelope for ship recycling practices in Bangladesh: hazard identification and risk evaluation
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 and South Asia regions
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
Sustainable Shipping Initiative		The ship recycling transparency initiative
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

This grant programme from the Academy and the Lloyd's Register Foundation 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. In addition, the programme has awarded grants of up to £50,000 each to 19 projects in 14 different countries across Africa, Asia, the Middle East and South America to support the delivery of skills and education programmes.

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
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
1Billion Africa (IBA)	Ghana		STEM4Africa (S4A) project
WomEng (Women in Engineering)	South Africa		Providing fourth 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

Lead applicant organisation	Lead applicant country	Partner country	Project title
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
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 other stakeholders to find solutions to society's most pressing sustainable development challenges. It is run through the Newton Fund.

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
SmartEnEd (Smart Energy Education): Scaling up user-centred, smart and local energy business models in Colombia through collaboration and education	Universidad EIA	University College London	NEU (CO), ERCO Energia (CO), Ministry of Mines and Energy	Colombia
Nano-sensor design and development for characterising nitrous oxide (N ₂ O) emissions from agricultural crops in Colombia and UK	Pontificia Universidad Javeriana Cali	National Institute of Agricultural Botany (NIAB EMR)	Cenicana (CO), NIAB EMR (CO)	Colombia
Multifunctional engineered layers based on absorption dynamics of responsive natural hydrogels for capturing greenhouse and toxic pollutants in animal farming and fertilizer industry	Universidad Industrial De Santander	Northumbria University	Inntekie (CO)	Colombia
Training for the prevention of fires and explosions through data analysis and simulation	Universidad Nacional de Colombia – Medellín Campus	UCL	Soluciones Energeticas y de Automatizacion (CO) Agencia Nacional de Minería (Colombian National Mining Agency) (CO)	Colombia
Assessment of state-of-health for second-life (Li-ion) batteries through non-destructive ultrasound testing	Universidad Pontificia Bolivariana	University of Oxford	Verasonics SAS (CO), BATx SAS (CO)	Colombia
Epidemiological impact of sustainable urban development	Universidad del Rosario	University of Glasgow	Servinformacion (CO), World Bank	Colombia
GHG-intensive-industry medium-scale capture and utilisation solutions assessment in Colombia	Universidad Nacional de Colombia	Heriot-Watt University	Cementos Argos (CO)	Colombia

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
CO2_BioMaCaS. Development and evaluation of nanomaterials obtained from Colombian organic waste and biomass for enhanced CO ₂ capture and geo-storage process at shallow reservoirs conditions (e-CCS) or conventional CCS at deep reservoir conditions (CCS)	Universidad Nacional de Colombia – Sede Medellin	Coventry University	Petrorocas S.A.S. (CO), Instituto Tecnológico Metropolitano ITM (CO)	Colombia
Disinfecting indoor air against diseases such as COVID-19 and TB in cities in the Indian subcontinent	IIT Madras	Queen Mary University of London	Magneto Cleantech (IN)	India
Development of autonomous heterogeneous robotic swarm simulator for faster disaster reconnaissance and mitigation	Hindustan Institute of Technology and Science	University of Leicester	Menzel Vision and Robotics Pvt. Ltd (IN), Yagen Robotics (IN)	India
IA, IoT and digital technologies for future sustainable smart cities	Parul University	University of Surrey	Nirvedha Technology Solutions LLP (IN), L&T Sargent and Lundy Ltd (IN), NASSCOM – CoE Gandhinagar (IN)	India
Impact on emission reduction through replacement of coal by renewable energy source, paddy straw for industrial applications	Indian Institute of Technology Ropar, Rupnagar, Punjab	Aston University	A2P Energy (IN), Prodigy Numbers (IN)	India
Capacity building in collaborative research, academic curriculum development and outreach towards additively-manufactured electric scooter for addressing sustainability challenges in India and UK	Vellore Institute of Technology	Glasgow Caledonian University	National Institute of Technology Tiruchirappalli (IN), Dorle Controls (IN), Wattz Automotive Pvt. Ltd (IN), Power Integrated Solutions Pvt. Ltd (IN)	India

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
Novel laser-based monitoring of key environmental parameters – addressing well-being, livelihood and a healthier environment in developing regions of India	IIT Gandhinagar	City, University of London	Robert Bosch India (IN), Sengen Ltd (UK)	India
Urban benchmarking action for sustainable energy (UBASE)	CEPT University	University College London	Delhivery Pvt. Ltd (IN), Bentley Systems Inc. (Multinational), COLEAD (IN), C40 (multinational)	India
Smart nanomaterials for protection and remote-controlled delivery of active ingredients in skin care products	Royal Scientific Society	King's College London	Al-Mawared Natural Beauty Products Corp. (JO), ECQ Technical and Management Consultants (JO), Al Zaytoonah University of Jordan	Jordan
Digital twin software to control part of Jordanian electrical networks with considering the cyber-security aspect	Middle East University	Newcastle University	ETA-max (JO), JEPCO (JO), Al-Anwaa (JO)	Jordan
Decarbonising Jordanian energy systems utilising smart solutions based on energy storage	Mutah University	Newcastle University	MEMR (JO), SEPCO (JO), Sadeem (JO), NEPCO (JO)	Jordan
Automated smart and sustainable irrigation and inspection system for rural farms in Jordan (ASSIIS-Jo)	The Hashemite University	University of South Wales	Elentec Ltd (UK), National Agricultural Research Centre (JO), Volt Automatic Company (JO), Fardthakh (JO)	Jordan
Development of a nature-based solution for pharmaceutical wastewater treatment in Jordan	Royal Scientific Society	Cranfield University	Jordan Sweden Medical and Sterilization Company (JO), Dar Al-Dawa Group (JO) SOLVillion Company (JO)	Jordan
Integrating and digitizing resource efficient cleaner production (RECP) in food industries: towards circular economy in Jordan	Royal Scientific Society	University of the West of England	Decapolis Company (JO), The Farm Dairy Co. (JO), Gheras Trading Co. (JO)	Jordan
Modelling and intelligent control of battery-supercapacitor hybrid energy storage systems in electric vehicles	University of Pretoria	Northumbria University	Average Technologies (ZA), Green Scooter (ZA)	South Africa

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
'Fibre' before the fibre: Bridging the digital divide in informal settlements	University of the Witwatersrand, Johannesburg	University of Glasgow	PeCo Power (ZA)	South Africa
Development of innovative integrated engineering curricula across partner SA HE institutions	University of Pretoria	UCL	S.A. Industry Consortium (Liaison Dr Karinn Wolff)	South Africa
Adoption of the 'fall cone' as the standard method of determining the index parameters and shear strength in South Africa	Central University Technology, Free State	University of East London	GeoCalibre (ZA)	South Africa
Development of a R&D platform for the field testing and implementation of solar thermal drying technologies for the treatment of faecal sludge from onsite sanitation facilities	University of KwaZulu-Natal	Swansea University	Khanyisa Projects (ZA), eThekweni Municipality Water and Sanitation Division (ZA), EnviroSan Sanitation Solutions (ZA)	South Africa
Cost-effective freight transport emissions reduction	Stellenbosch University	University of Cambridge	CSIR (ZA), RTMS (ZA)	South Africa
Enabling digital transformation for SMEs from the food and beverage sector	University of Johannesburg	London South Bank University	Foodbev SETA (ZA), City of Johannesburg Dept. of Economic Development (ZA), Gov. of S. A. Technology and Innovation Agency (ZA), Process, Energy and Environmental Technology Station (PEETS) (ZA)	South Africa
Developing an Afro-centric neighbourhood assessment framework to enhance the sustainability and inclusivity of communities in South African urban precincts using community-based facilities management and cyber technologies	University of Cape Town	University of Huddersfield	Communicare (ZA)	South Africa
Novel low-modulus titanium alloy for biomedical applications	National Metal and Materials Technology Center	University of Leicester, University of Oxford	Alloyed (OxMet Technologies) UK, SmartMed Group Co. Ltd (TH), Taisei Kogyo Co. Ltd (TH)	Thailand

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
A novel electrochemical reactor for direct synthesis of renewable CH ₄ from CO ₂	King Mongkut's University of Technology North Bangkok	Imperial College London	PTT Plc (TH), SCG (TH), Wonnapob Thailand (TH)	Thailand
Establishing a bioprocess workforce in Thailand to deliver affordable biological medicines through biomanufacturing education and industrial-research integration	KMUTT	UCL	KinGen Biotech Co. Ltd (TH)	Thailand
Circular system innovation for polyurethane foam: catalytic approach to upcycle foam waste from mattresses and beyond	Asian Institute of Technology	University of Cambridge	Circularity Co. Ltd (TH)	Thailand
Thai speech acoustic virtual reality (SAVR) test for the detection of early dementia	Department of Physics, Faculty of Science, Chulalongkorn University	UCL	Otolaryngology Dept., King Mongkut's Memorial Hospital (TH), Eartone (Thailand) Co. Ltd (TH)	Thailand
Digital materials design and additive manufacturing for helping patients with bespoke 3D-printed implants	Chulalongkorn University	University of Leicester	Alloyed (OxMet Technologies) UK, Meticuly Co. Ltd (TH)	Thailand
Thermal energy storage in building elements (TESBE): Development of novel and low-cost sustainable composites for enhanced building energy efficiency and occupant thermal comfort	Middle East Technical University	University of Glasgow	Vicat Group, CAVU Group, Phase Change Material Products Ltd	Turkey
Adaptive facade for building energy conservation	Gaziosmanpaşa Üniversitesi	University of Nottingham	Istanbul Teknik (TR), Brinell Vision Ltd (UK)	Turkey
Microfluidic device for rapid, low-cost detection of streptococcus pneumoniae	Atilim University	University of Leicester	Ligant Ltd (TR)	Turkey

Project name	Name	UK partner	Industry/government/civil society partner(s)	Country of collaboration
Tissue engineered in vitro models to transform the pre-clinical development pathways for pelvic floor repair materials used in surgical treatment of women with urinary incontinence	Hacettepe University School of Medicine	University of Sheffield	Doku Biotechnology Co. Ltd (TR), Sheffield Teaching Hospitals, Female and Reconstructive Urology Clinic (UK), DC Medical/Symimetic Ltd (UK)	Turkey
Improvement of engineering curriculum considering green economics with industry aspects	Bahçeşehir University	Keele University	Reengen Energy (TR), Gates Energy (TR), Lpschain (TR)	Turkey
Remote respiration monitoring through wearable textile-based sensors	Istanbul Technical University Aerospace Research Center	Royal College of Art, School of Design, Textiles	Ertunç Özcan Medical Devices Marketing and Technical Services LC (TR)	Turkey
Nanocellulose for bioadhesives (NanoBio)	Koc University	University of Nottingham	Kastamonu Entegre AS (TR)	Turkey

Engineering X Pandemic Preparedness grants

The Engineering X Pandemic Preparedness programme is supporting the UK and global engineering community to learn from the current COVID-19 pandemic through global sharing of lessons on disruptive solutions and best practice approaches in the prevention, preparedness, response and recovery from pandemics. The grant scheme is funding innovative engineering that tackles the new challenges created by COVID-19, building connections between engineers across the world responding to the pandemic.

Grantee	Project	Country
Universidad EIA	VBraille, a platform to connect schools and engineers for quality education	Colombia
Escuela Colombiana de Ingenieria Julio Garavito	COVIBOT: robotic strategies for monitoring and disinfection of COVID-19 environments	Colombia
ICIA (Ghana)	The common emergency campus (EM-Campus Anywhere)	Ghana
Hexpressions Pvt. Ltd	Hexpressions	India
Coeo Labs Pvt. Ltd	Saans_Pro with helmet: a safe CPAP/HFNC for low resource settings	India
Solar e-Cycles Kenya	Solar E-Cycles: Empowering people	Kenya
Lilongwe University of Agriculture and Natural Resources	Construction of modern toilets to enhance sanitation for COVID-19 prevention	Malawi
Centro de Investigación y de Estudios Avanzados del IPN	Temperature surveillance system for prevention of COVID-19 in schools	Mexico
Federal University of Nigeria	Promoting hand washing hygiene among primary school pupils in Nigeria	Nigeria
Zenafri Ltd	Koyamu – an interactive local-content educational platform for African kids	Nigeria
Universidad Peruana Cayetano Heredia	Resp-IoT: IoT device for evaluation of respiratory risk from COVID-19	Peru
Ideabatic Ltd	Upgrade of SMILE last-mile vaccine carrier for remote areas	UK
University of Birmingham	Development of anti-viral air filters to protect passengers on trains	UK
University of the West of Scotland	FemaleINSPIRES: international network and support platform for interdisciplinary research engineers /scientistss	UK
Imperial College London	Efficient and interactive scheduling of cancer treatments during a pandemic	UK
Cranfield University	Ambulance interior flow visualisation for COVID-19 active virus filtration	UK
University of Edinburgh	Digital microfluidics for low cost COVID-19 diagnostic systems in Latin America	UK
Queen Mary, University of London	Novel air filter to suppress viral load in confined space	UK
London South Bank University	Screening, manufacturing, testing and benchmarking of antiviral health-friendly bio-coating	UK
University of Cambridge	4D-customised respirators to protect healthcare workers from COVID-19	UK
Imperial College London	JAMVENT – a ventilator design constructed for rapid production	UK
Oxford Dynamics Ltd	Air2: an innovative personal air purification system	UK
University of Bristol	Project Clean Access: a toolkit for transition out of lockdown	UK

Distinguished International Associates

The Distinguished International Associates programme aims to develop a broad international community or network of excellent diverse engineers across countries and disciplines, with research and innovation links to the UK, to work alongside the Academy to enhance progress towards achieving its goals for an inclusive economy and sustainable society.

Award Holder	Country	Institution	Project name
Dr Ali Mohammad Ali Hayajneh	Jordan	The Hashemite University	Ultra low-cost machine learning enabled iot devices on the edge (MLEIoT)
Professor Rania Aburamadan	Jordan	Middle East University	Initiative sanitation and hygiene networking in Jordan (poverty pockets) (ISNJ)
Dr Nico Frederik Fischer	South Africa	University of Cape Town	NECatS – novel empowered catalyst supports
Dr Bhupesh Kumar Lad	India	Indian Institute of Technology Indore	Strengthening collaboration in the area of smart manufacturing (Industry 4.0)
Dr Nipon Pisutpaisal	Thailand	King Mongkut's University of Technology North Bangkok	Sustainovative development of polyhydroxyalknaoates biodegradable plastics from palm oil
Dr Devendranath Ramkumar Kasinath	India	Vellore Institute of Technology (VIT), Vellore	Promoting a transdisciplinary research approach for diversified engineering applications utilising multi-functional materials and advanced processing technologies through industry and academic partnership
Dr Arup Lal Chakraborty	India	Indian Institute of Technology Gandhinagar	UAV-based laser spectroscopic monitoring of greenhouse gas emissions in urban and rural India
Dr Timothy Gibbon	South Africa	Nelson Mandela University	Nurturing excellence, opportunity and equity through digital education for engineering and science
Professor Abimbola Windapo	South Africa	University of Cape Town	Strategies for improving the awareness of local building materials in housing construction

Global Grand Challenges Summit 2020 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
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 offgrid 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
Zhiqi Wang	University of Cambridge	Plantern	Device that allows families to grow spirulina easily, supplementing their diet to tackle micronutrient deficiency

UK-Germany Energy Systems Symposium

As an outcome of this virtual symposium hosted by the Academy in October 2020, awards were made to 10 awardees to each lead a one-year project on an aspect of the energy transition. Each project involves a coalition of energy professionals from both countries and is committed to delivering a novel contribution to common policy priorities.

Lead applicant name	Institution	Project name
Dr Colin Nolden	University of Oxford	Energy demand governance for zero carbon
Dr Aram Kalhori	GFZ German Research Centre for Geosciences	Quantifying nature-based carbon storage potentials by various management scenarios
Dr Adriano Sciacovelli	University of Birmingham	Realizing the whole-system value of energy storage in UK and German future low carbon grids – initial assessment of long duration storage through Liquid Organic Hydrogen Carrier (LOHC) and thermal energy storage
Professor Xiaohong Li	University of Exeter	Flow battery and green hydrogen as energy storage system in coupling renewable energy source
Dr Hawal Shamon	Forschungszentrum Jülich	Effectivity of decarbonisation measures in the household heating sector in UK and Germany
Dr Conrad Kunze	Free University of Berlin	Mainstreaming community energy and renewable energy efficient measures with state programmes – a collaboration between the UK and Germany (MCEEM)
Dr Danny Otto	Helmholtz Centre for Environmental Research – UFZ	Trust in technologies for a zero-carbon future
Dr Aidan Rhodes	Imperial College London	A comparison of consumer attitudes and incentives for demand response and flexible tariffs in the UK and Germany
Dr Aruna Sivakumar	Imperial College London	Sustainable and multi-modal urban freight logistics
Dr Lars-Peter Lauen	University of Kassel	Integration of offshore wind power

Ingenious Public Engagement Awards

Round 15 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	Primary organisation	Project title
Peter Woolaghan	The REACT Foundation	ICanToo: Inspirational, educational, unique
Natalie Wint	College of Engineering, Swansea University	Engineering in your future: sustainable city
Marloes Peeters	Newcastle University	Build-a-Bear 2.0 : your favourite animal made from plastic waste
Laura Killeen	The Play House (B'ham) Ltd	Daughters of Invention primary schools engineering partnership with the University of Birmingham
Leah-Nani Alconcel	University of Birmingham	Engineering sustainable photographic processes
Anna Ploszajski	Clever Make Funny Productions	Bedtime stories for very young engineers
Hugh Mackay Thomas	The Bristol Initiative Charitable Trust	Engineering heroes of the future, card game and online activity
Lorna Dougan	University of Leeds	Creatively creating the materials of the future
Helen Bridle	Heriot-Watt University	Engineering play: activity design for pre-school innovators
Matt Murphy	University of Liverpool	The future food engineering and enterprise challenge
Lewis Hou	Science Ceilidh	New Scots connect
Claire Duffield	Leeds Libraries	Urban NatureBots: exploring the natural world through engineering and technology
Giovanni Biglino	University of Bristol	REACH – researchers' and engineers' alliance for communication in healthcare
Melanie Riddell	SCDI	Regional community celebrations of STEM
Sarah Affleck	National Literacy Trust	Inspiring young, disadvantaged children to the world of engineering work
Thomas Edmund Flint	Edinburgh Napier University	Let's Play Wester Hailes: community produced video games of Edinburgh
Andrew Goodman	Bangor, Gwynedd	Ingenious engineering
Lis Payne	Loughborough University	The Janus Project – engineering the past and the future
Merlyne De Souza	University of Sheffield	Engineer your future: a taster in careers in electronics
Mary Meehan	Manufacturing NI	Engineering: take a closer look
Janet Stevens	Isle of Wight College	Engineering for all
Ric Brame	University of Central Lancashire	Engineering humans
Joshua Payne	National Farmers' Union	Anytime, anywhere engineers
Kirsty Allpress	Bloodhound Education	Programme to train, equip and mentor innovative technology engineering ambassadors
Heather MacRae	Ideas Foundation	Engineer the story with TikTok
Anita Elizabeth Shervington	BLAST Fest Ltd	BLAST Fest youth media fellowships: grand challenges, local goals

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 Isaac Akintaro	University of Sheffield	Civil and structural engineering
Shafae Noaman 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 Simon Bignell	University of Bath	Electronics with space science
Oscar Bond	University of Bristol	Engineering design
Rachel Brown	Imperial College London	Design engineering
Zara Burton	University of Bristol	Engineering design
Liam Nigel Bushrod	Durham University	Engineering
Judith Cameron	Queen's University Belfast	Mechanical engineering
Kirsty Carlyle	University of Glasgow	Engineering design
Kai Chelliah	University of Bristol	Engineering design
Jamie Clark	University of Edinburgh	Civil engineering
Luke Collinson*	University of Manchester	Mechanical engineering
Isabella Cecilia Frances Curtis	University of Warwick	General engineering
Alina Dragancea	University of Bristol	Civil engineering
Thomas Henderson Edwards	University of Southampton	Civil engineering
Maisie Edwards-Mowforth	University of Edinburgh	Mechanical engineering
Leena Sarah Farhat	Aberystwyth University	Computer science
Umar Farooq*	Newcastle University	Automation and control engineering
Floriane Fidegnon-Edoh	University of Warwick	Manufacturing and mechanical engineering
Angus Firth	University of Bristol	Engineering design
Benjamin Foster	Imperial College London	Aeronautical engineering
Adrien 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

Name	University	Subject
Thomas Gonda	Imperial College London	Design engineering
Nicola Graham	University of Bristol	Engineering design
Shannon Martha Graham	Queen's University Belfast	Product design engineering
Layla Jodie Marina Graham*	Sheffield Hallam University	Electronic engineering
Dylan Hall	Imperial College London	Materials science and engineering
Grace Handley	Lancaster University	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
Michael Hofmann	University of Sheffield	Mechanical 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
Frances Louisa James	University of Bristol	Engineering design
Benjamin William James*	University of Cambridge	Engineering
Shahidurahman Janatmir	University College London	Chemical engineering
Emma Elizabeth 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 Jerzy 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 Robert Loudon	Queen's University Belfast	Mechanical engineering
Topaz Maitland	University of Bristol	Engineering design
Samuel George Maxwell	University of Sheffield	Electronic engineering
Joseph Robert McFarlane	University of Bristol	Engineering design
Naomi Michelle McGregor	Queen's University Belfast	Product design engineering

Name	University	Subject
James E. McKeivitt	Loughborough University	Aeronautical engineering
Jade McMorland	University of Strathclyde	Electronic and electrical engineering
Bruno Kacper Mlodozieniec	University of Cambridge	Engineering
Sophie Myers	University of Bristol	Engineering design
Victoria Laila Neill	Heriot-Watt University	Chemical engineering
Munira Patel	Newcastle University	Chemical engineering
Weronika Pawlowska	University of Sheffield	Civil and structural engineering
Nicolaas Philip Pickard	University of Birmingham	Mechanical engineering
Andrew Pogue	Queen's University Belfast	Mechanical engineering
Matthew Price	University of Southampton	Electronic engineering
Ryan Rafferty	Queen's University Belfast	Mechanical engineering
Alexander James Reeve	University of Bristol	Engineering design
Victoria Yan 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
Daniel Rodrigues	University of Bristol	Engineering design
Amy Ruffley	University of Bristol	Engineering design
Isabelle Russell	University of Bristol	CAME/civil engineering
Jonathan Saad	University of Warwick	Engineering
Ilham Said	University of Bristol	Aerospace engineering
Isabelle Sambles	University of Bristol	CAME/civil engineering
Thomas Santini	University of Bath	Design engineering
Roberto Dario Sesia	Cardiff University	Electrical and electronic engineering
Samuel Shannon	University College London	Biochemical engineering
Alexander Sheard	University of Bristol	Engineering design
Kyle Sheehan-McLean	University of Sheffield	Civil and structural engineering
Agata Skoneczna	University of Edinburgh	Structural engineering with architecture
James Smith	University of Surrey	Aerospace engineering
Matthew James Smith	University of Sheffield	Materials science and engineering
Michal Stepkiewicz	University of Sheffield	Mechanical engineering
Patrick John Sullivan	University of Bristol	Engineering design
Ashley Taillepierre Tsoka	University of Sheffield	Chemical engineering
Samuel Tiller	University of Bristol	Engineering design
Elvis Tinago	University of the West of England	Aerospace engineering
Duncan Trenholm	University of Nottingham	Civil engineering

Name	University	Subject
Jack Trevail	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 James Watkins	University of Strathclyde	Electrical and mechanical engineering
Nathan John 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

This industry-into-academia initiative aims to utilise the experience of Visiting Professors (with backgrounds as industrialists, entrepreneurs, consultants, or innovators) to enhance teaching and learning as well as the employability and skills of UK engineering degree students whilst strengthening external partnerships with industry.

The programme currently supports 93 Visiting Professor roles at 59 universities. The list below includes all Visiting Professors for the 2020/21 academic year.

Name	University
Salim Akhtar	University of Bradford
Yewande Akinola MBE	University of Westminster
Dr Blanca Antizar-Ladislao	University College London
Mr Timothy Askew	University of Hertfordshire
Dr Andrew Atkins	University of Brighton
Professor Ben Azvine	City, University of London
Faye Banks	Open University
Dr Phil Brooke	Northumbria University
Shahana Buchanan	University College London
Jackie Butterfield and Jacqui Murray	University of Leicester
Kate Cairns	Durham University
Adrian Campbell	University of Southampton
Dr Tao Chen	University of Kent
Dawn Childs FEng	Kingstone University London
Dave Cleverley and Martin Milner	Edinburgh Napier University
Dr Laura Cohen	University of Manchester
Dr David Cooper	Liverpool John Moores University
Dr Kevin Dean	University of Salford
Colin Deddis	University of Strathclyde
Dr Helen Dudfield	Nottingham Trent University
Stewart Edmondson	Aston University
Professor Arthur Ekwue	Brunel University London
Caroline Field	Loughborough University
Ian Firth	University of Warwick
Dr Andrew Garrad CBE FEng	University of Bristol
Dr Pierre Gauthier	Cranfield University
Christopher Gear	University of Bath
Dr Barnali Ghosh	University of Cambridge
Bernadette Gibbs	University of Central Lancashire
Vincent Glancy	Brunel University London
Dr Liucheng Guo	University of South Wales
Professor Christopher Hancock	University College London
David Harra	University of Sheffield
Dr Christopher Harrison	University of West England
Dr Peter Harrod	Imperial College London
Dr Thoralf Hartwig	University College London

Name	University
Dr Graham Hawkes	University of Surrey
Gillian Horn	University of Reading
Dr Adrienne Houston and Dr Donka Novovic	University of Birmingham
Dr Penny Jeffcoate	University of Southampton
Dr Paul Johnson	Newcastle University
Peter Jones	Aston University
Jessica Leigh Jones	University of Wales Trinity Saint David
Professor Hanif Kara	TEDI-London
Steven Kear	Anglia Ruskin University
Dr Mark Keene	University of Birmingham
Gregory Kelsall	University of Sheffield
Sue Kershaw	University College London
Alexandra Knight	Brunel University London
Patrick Kniveton	University of Derby
Andrew Lawrence	Staffordshire University
Andrew Lawrence	University of Cambridge
Professor Andrew Lewis	Queen Mary University of London
Peter Loftus	University of Edinburgh
Mark Logan	University of Glasgow
Zygmunt Adam Lubkowski	University College London
Roderick Macdonald OBE	Heriot-Watt University
Dr Sarah Main	University of Westminster
Dr Carol Marsh	Edinburgh Napier University
Derek McNab	University of Strathclyde
David McNaught	University of Strathclyde
Dr Daniel McStay	Queen's University Belfast
Dr Steven Meers	University of Southampton
Steven Morris	Bangor University
Nick Munro	Imperial College London
Sir John O'Reilly	University of Huddersfield
Brian Palmer	University of Manchester
Dr Suresh Paul	Harper Adams University
Dr Jan Peters	Open University
Dr Lee Potts	University of Sheffield
Daniel Powell	University of Oxford
Dr Behzad Rahimzadeh	Aston University
Dr Aminur Khosru Rahman	University of Greenwich
Cesar Rendora	University of Portsmouth
David Richards	Glasgow School of Art
Lucienne Roberts	University of Southampton
Dr Lucy Rogers FEng	Brunel University London
Dr Tony Russell-Rose	University of Essex
Dr Jaspal Sagoo	Aston University
Dr Vania Santos-Moreau	University College London

Name

Anusha Shah
 Dr Peter Adrian Sharples
 Tanja Waaser
 Dr Tao Wang
 James Wardman
 Paul Westbury
 Mike Westlake
 Dr Stewart White
 Jon Whitehouse
 Dr Stuart Wicks

University

King's College London
 University of Kent
 Abertay University
 University of Kent
 University of Bradford
 University of Cambridge
 University of Warwick
 University of Glasgow
 University of Birmingham
 Loughborough University

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 2020, 11 fellowships were awarded.

Name	Business school
Mihir Bhushan	MIT – Sloan School of Management
Josef Bromovsky	Harvard Business School
Mario Carandente	MIT – Sloan School of Management
Kieran Chandler	INSEAD
Mahmoud Gawish	INSEAD
Rebecca Grady	London Business School
Gordon Irving	London Business School
Rauf Khan	Stanford University – School of Business
Ahmad Khattab	Imperial College Business School
Jayshan Ratnakumar	Imperial College Business School
Sam Vennin	London Business School

Connecting STEM Teachers programme

Connecting STEM Teachers is the Academy's flagship schools programme delivered by 50 teacher coordinators across 48 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
Simon Brown	North West – Greater Manchester
Claudia Clarke	South – West Oxfordshire
Trish Colley	North East – North Yorkshire, Hull
Amanda Courtney	South East – Kent/East Sussex
Michael Cronk	South West – Devon
Naomi Diamond	North West – Liverpool
Clare Doherty	Northern Ireland – Derry/Londonderry
Lorraine Drybrough	South West – Cornwall
Lauren Evans	Midlands – Nottingham and Mansfield
Kate Finlay	East of England – Norfolk
Andrew Gilbert	West Midlands – Shropshire
Iain Goodart	Scotland – Glasgow
Philip Goodland	North Devon
Emma Harvey	South East – Kent
Arthur Harwood	East Midlands – Northamptonshire
Stuart Higham	South – Hertfordshire
Neil Humphreys	North Wales
Graeme Jackson	North West – Cumbria
Glyn Jones	North West – The Wirral
Thomas Lavery	Northern Ireland – Belfast
Sam Lawrence	South West – Bristol
Holly Leat	South – Southampton
Edward Lyell	North East – North Yorkshire, Scarborough
Beverly Maloney	East of England – Ipswich
Jed Marshall	London – North
Judith Munro	Scotland – Highlands and Islands
Lynne Mylet	Scotland – Glasgow
Michael Nelson	North East – Newcastle upon Tyne
Beth Nicoll	Scotland – Aberdeenshire
Tracey O'Connor	West Midlands – Birmingham
Tunde Orelaja	London – South

Teacher coordinator	Area covered
Krissi Pink	South East – Medway Towns
Susan Quirk	South Wales – Carmarthenshire
Gareth Richards	East Midlands – Peterborough, Cambridgeshire
Margaret Ritchie	Scotland – Edinburgh, Angus, Perth and Kinross
Gaynor Sharp	West Midlands – Coventry
Martin Simmons	North West – Greater Manchester
Peter Swann	South – Isle of White
David Thomas	North East – Northumberland
Peter Thomas	South East Wales – Cardiff
Matthew Thomas	North West – Blackpool
Daniel Toms	North East – Leeds
Anthony Vaughan-Evans	East of England – Lowestoft, Suffolk
Chris Wallis	North West – Preston, Lancashire
Laura Watford	South – Portsmouth
Emily White	West Midlands – Stoke on Trent, Staffordshire

Lord Bhattacharyya Higher Education Bursaries

The Lord Bhattacharyya Higher Education Bursary Scheme aims to support the progression of A-level, BTEC and OCR students from eligible programme schools, academies, and colleges across the West Midlands who wish to study degree level engineering at a UK university.

Students from low-income households, and those who are under-represented in the engineering sector, receive a significant bursary to support their studies.

Name	University
Abdulhakim Fundikira	Coventry University
Farid Moulaye	Coventry University
Jessica Oliver	Coventry University
Saman Salih	Coventry University

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 FREng FRS.

Name	Job title	Country
Professor Sir Christopher Snowden FREng 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 FREng 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 and 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 FREng	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	Country
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

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University	Programme
Anglia Ruskin University	<i>This is Engineering</i>
Aston University	<i>This is Engineering</i>
Bangor University	<i>This is Engineering</i>
Cranfield University	<i>This is Engineering</i>
Heriot-Watt University	<i>This is Engineering</i>
Imperial College London	<i>This is Engineering</i>
Manchester Metropolitan University	<i>This is Engineering</i>
University of Exeter	<i>This is Engineering</i>
University of Glasgow	<i>This is Engineering</i>
University of Leeds	<i>This is Engineering</i>
University of Oxford	<i>This is Engineering</i>
University of Southampton	<i>This is Engineering</i>
University of Strathclyde	Areas of greatest need
WMG (University of Warwick)	<i>Ingenia</i>

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In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

What we do

TALENT & DIVERSITY

We're growing talent by training, supporting, mentoring and funding the most talented and creative researchers, innovators and leaders from across the engineering profession.

We're developing skills for the future by identifying the challenges of an ever-changing world and developing the skills and approaches we need to build a resilient and diverse engineering profession.

INNOVATION

We're driving innovation by investing in some of the country's most creative and exciting engineering ideas and businesses.

We're building global partnerships that bring the world's best engineers from industry, entrepreneurship and academia together to collaborate on creative innovations that address the greatest global challenges of our age.

POLICY & ENGAGEMENT

We're influencing policy through the National Engineering Policy Centre – providing independent expert support to policymakers on issues of importance.

We're engaging the public by opening their eyes to the wonders of engineering and inspiring young people to become the next generation of engineers.