

ENGINEERING ETHICS CONFERENCE



Thursday 6 September 2018, University of Leeds

Bringing engineering ethics to life in education,
professional development and industry

Conference Programme

*Join us in creating a 10 year vision for embedding
ethical principles into engineering practices*

- 0945 **Registration** *with refreshments*
- 1030 **Welcome**
Sir Alan Langlands, Vice Chancellor, University of Leeds
- 1045 **Standards for Ethical Conduct in UK Engineering**
Professor Chris Atkin CEng FRAes, Chairman, Engineering Council
- 1130 **Bringing the principles to life: making the standards stick**
Short presentations, chaired discussion and e-contributions

Chaired by Professor John Uff CBE QC FREng, Keating Chambers and Emeritus Professor of Engineering Law at King's College London
- **Royal Academy of Engineering Representative**
Richard Maudslay CBE FREng, Chairman, Ethics Working Group, Royal Academy of Engineering
 - **Ethics Representative**
Dr Rob Lawlor, Inter-Disciplinary Ethics Applied Centre, University of Leeds
 - **Industry Representative**
Dame Judith Hackitt DBE FREng FICChemE FCGI, Chair, Independent Review of Building and Fire Safety Regulations
 - **Professional Standards Representative**
Professor Chris Atkin CEng FRAes, Chairman, Engineering Council
 - **HE Representative** *nominated by the Engineering Professors Council*
Professor Raffaella Ocone FREng FRSE, Professor of Chemical Engineering, Heriot Watt University
- 1230 **Lunch**
- 1330 **Addressing current ethical issues**
Short presentations, chaired discussion and e-contributions

Chaired by Dr Kevin Macnish, Ethicist, Assistant Professor in Ethics and Technology, University of Twente, The Netherlands
- **Ethics, Big Data and Cyber Security**
Professor Kevin Jones FIMarEST FBCS FIET, Executive Dean, Faculty of Science and Engineering, University of Plymouth
 - **Ethics, Artificial Intelligence and Automated Vehicles**
Renaud Champion, Director of Emerging Intelligences, EMLyon Business School; CEO of PRIMNEXT, investment company in artificial intelligence and advanced robotics and Director of euRobotics.
 - **Ethics, Climate Change and the Environment**
Sara Parkin OBE, Founder-Director and Trustee, Forum for the Future

1500 **Break with refreshments**

1530 **Equipping engineers to tackle ethical issues: HE and CPD**

Short presentations, chaired discussion and e-contributions

Chaired by Professor Helen Atkinson CBE FREng, the Pro-Vice-Chancellor - Aerospace, Transport, Manufacturing at Cranfield University

- **The Pros and Cons of an integrated case based approach**
Dr Carl Fox, Inter-Disciplinary Ethics Applied Centre, University of Leeds
- **Engineering ethics in practice, a hands-on approach: Engineering for People Design Challenge**
Katie Cresswell-Maynard, Chief Executive, Engineers Without Borders UK
- **Engineering Ethics CPD – online or face to face?**
Martin Davies, Head of Digital Learning, IET Academy: Trusted elearning for Engineers, The Institution for Engineering and Technology (IET)

1700 **The 10 Year Vision: the next steps**

Chaired by Professor John Uff CBE QC FREng, Keating Chambers and Emeritus Professor of Engineering Law at King's College London

Including artist summary by Woven Ink

1730 **Conference close with networking and refreshments**



Supported by:



Presenter, Chair and Steering Group Biographies

Engineering Ethics Conference Presenters and Chairs *(in order of appearance)*

Sir Alan Langlands FRSE Hon FMedSci, Vice Chancellor, University of Leeds

Before joining the University, Alan Langlands was the Chief Executive of the Higher Education Funding Council for England (2009 to 2013). He was formerly the Principal and Vice-Chancellor of the University of Dundee (2000 to 2009) and Chief Executive of the NHS in England (1994 to 2000). He has a particular interest in the scientific basis of health services, and from its inception in 2004 until 2012, he chaired the board of UK Biobank – a major genetic epidemiology study. He was also the chair of the board of the Health Foundation, a UK-wide charity committed to improving the quality of healthcare, until 2017. Alan was knighted in 1998 for his services to the NHS, he is a Fellow of the Royal Society of Edinburgh, and an Honorary Fellow of the Academy of Medical Sciences.

He is a science graduate of the University of Glasgow and was awarded an honorary doctorate by the University in 2001. In addition, he has a number of honorary degrees from major universities and fellowships from five medical Royal Colleges. Full biography: http://www.leeds.ac.uk/info/110000/senior_officers/212/sir_alan_langlands

Professor Christopher Atkin CEng FRAeS, Engineering Council

Professor Chris Atkin is the Professor of Aeronautical Engineering at City, University of London. He completed an MA and PhD in Engineering at the University of Cambridge and then spent four years working for BAE Systems, six years at DERA and seven years with QinetiQ. Chris joined City, University of London in 2008 and is presently Head of Engineering. Chris joined the Engineering Council Board in 2015, becoming Chairman in 2017, and is committed to effective self-regulation of the engineering profession. He previously sat on the Engineering Council's Registration Standards Committee and has undertaken several roles on behalf of the Royal Aeronautical Society, of which he was President in 2016-2017.

Professor John Uff CBE QC FEng, Keating Chambers

John Uff originally trained and practised as a civil engineer before moving to the Bar where he specialises in construction and engineering arbitration. He has maintained close links with the engineering profession through which he has written and lectured extensively on engineering ethics including the Lloyd's lecture for the Royal Academy of Engineering "Do Engineers owe duties to the public?" This led to involvement in several initiatives including the Royal Academy's Statement of Ethical Principles. He was invited to address the Institute of Professional Engineers of New Zealand on ethical issues arising from the Christchurch earthquake in 2011. He was the founding Director of the Centre of Construction Law at King's College, London, and currently continues to teach and supervise research as an Emeritus Professor. He has chaired several Public Inquiries both in UK and most recently in Trinidad and Tobago He was awarded CBE in 2002 and the ICE Gold Medal in 2003.

Richard Maudslay CBE FEng, Chair, Engineering Ethics Working Group, Royal Academy of Engineering

Richard Maudslay is an engineer with a wide-ranging business career. Following roles in the UK and Mexico, he was appointed to run Rolls-Royce's £1.3Bn Industrial Power Group, covering all Rolls' non-aero interests, and joined the Rolls-Royce plc main Board. He remained in this role until Rolls' major structural reorganisation in 1997 led to its exit from most of its land-based power interests.

Since then he has enjoyed a plural career on the boards of various private and public sector organisations including Chairman of MoD's Defence Science and Technology Laboratory (Dstl), Chairman of the National Nuclear Laboratory and Deputy Chairman of the Regional Development Agency One NorthEast.

Richard is a graduate of the University of Edinburgh. He is a Fellow of the Royal Academy of Engineering where he chairs the Academy's Engineering Ethics Working Group. He was appointed CBE in 2006 for services to business in the North East.

Dr Rob Lawlor, Inter-Disciplinary Ethics Applied Centre, University of Leeds

Dr Rob Lawlor is a Lecturer at the IDEA Centre. He divides his time between undergraduate and postgraduate teaching, the development of teaching materials, and applied ethics research.

Rob's undergraduate teaching primarily involves Engineering Ethics (including Product Design and Aviation) and Ethics in Chemistry. At postgraduate level, he is involved in the [MA in Biomedical and Health Care Ethics \(online and campus\)](#), the [MA in Applied and Professional Ethics \(online\)](#) and PhD supervision.

Rob successfully completed an AHRC funded research project on [climate change, ethics and responsibility](#) in 2016 and is continuing to conduct research on related themes. He has supported the Centre's national work on Engineering Ethics and contributed to a range of workshops and conferences. Rob also led the development of, and edited, the ebook *Engineering in Society* (Beyond the Technical...what every engineering student needs to know) which aims to raise student awareness of the wide ranging roles and responsibilities of engineers.

Dr Kevin Macnish, Assistant Professor, University of Twente, Netherlands

Kevin Macnish is Assistant Professor in Ethics and Tehnology at the University of Twente in the Netherlands. Previously, Kevin was Teaching Fellow and Consultant in Applied Ethics at the IDEA Centre. His research is in the ethics of surveillance, security and automation, and he has published a book and several articles on surveillance ethics. Kevin has been interviewed by BBC national television and radio and has spoken at both the House of Commons and the House of Lords in relation to his research. A witness to the Select Committee on Science and Technology, he was quoted several times in the committee's final report on social media and data analysis. Kevin also conducts ethical analysis for security and ICT projects. He has been involved with several European Union FP7 and Horizon2020 projects and is an independent Ethics Expert with the European Commission. Full biography: <https://people.utwente.nl/k.macnish>

Professor Kevin Jones FIMarEST FBCS FIET, University of Plymouth

Professor Kevin Jones is currently Professor of Computing Science and Executive Dean of the Faculty of Science and Engineering at the University of Plymouth, responsible for the Schools of Computing, Electronics & Mathematics, Biological & Marine Sciences, Geography, Earth & Environmental Sciences and Engineering. Prior to joining Plymouth, he was Head of Computer Science at City University London. Previously, he had spent a number of years in the Silicon Valley in CA, holding executive, managerial, technical and research positions, in both successful start-up companies and major corporations. His research and teaching interests cover the Trustworthiness of Complex Systems, including Cyber Security, with a focus on the Maritime domain. Kevin is a Fellow of the IMARest, IET and the BCS, a Senior Member of the IEEE and the ACM, and a Liveryman of the WCIT.

Renaud Champion, PRIMNEXT and Emylon Business School

After building an international career in capital markets, Renaud Champion created PRIMNEXT, an expertise company specialized in valuing disruptive technologies and investing in as well as accelerating startups operating in Advanced Robotics and Artificial Intelligence. Through PRIMNEXT, Renaud Champion founded and managed Robolution Capital, the first venture capital fund dedicated to Robotics & AI in the world. He was involved in the definition of several national robotics roadmaps and he has been an active board member of a dozen startups in this field.

Renaud is currently Executive Director of Emerging Intelligences at EMLYON Business School, in charge of designing and implementing the strategy on Artificial Intelligence. He is also Director of euRobotics AISBL, the European Association of Robotics acting as the private side of SPARC, the Public-Private-Partnership for Robotics in Europe, and an independent expert for the European Commission on innovation and investment.

An engineer fascinated by new technologies, Renaud Champion is particularly interested in the ethical, legal, socio-economic issues linked to Robotics and AI. He is in particular expert-member of the IEEE Initiative on Ethics of Autonomous and Intelligent Systems.

Sara Parkin OBE, Forum for the Future

Sara Parkin is Principal Associate of The Sustainability Literacy Project, and Co-founder Director of Forum for the Future. She has collaborated with the engineering profession for many years, including leading *The Engineer of the 21st Century Inquiry*, an influential project with young engineers. She is a Founding Fellow of the Engineering Council, honorary fellow of the Institute of Energy and the Institution of Civil Engineers and received an OBE for services to education and sustainable development in 2001. Amongst other things she advises the NUS, Chairs the Richard Sandbrook Trust and sits on the board of the Carnegie Trust for the Universities of Scotland. Her last book, based on the Masters course she designed and ran for 20 years at Forum, *Positive Deviant: Sustainability leadership in a perverse world*, is a course book in several countries.

Full biography: www.saraparkin.org

Professor Helen Atkinson CBE FEng, Cranfield University

Professor Helen Atkinson is the Pro-Vice-Chancellor - Aerospace, Transport, Manufacturing at Cranfield University. She was made CBE in the Queens New Year's Honours 2014 for services to engineering and education. Professor Helen Atkinson was the first woman President of the Engineering Professors' Council (the body which represents engineering in universities throughout the UK) in its 50-year history and has also served as a Vice President and Trustee of the Royal Academy of Engineering.

Dr Carl Fox, Inter-Disciplinary Ethics Applied Centre, University of Leeds

Carl is a Lecturer in the Inter-Disciplinary Ethics Applied (IDEA) Centre at the University of Leeds, where he has worked since completing his PhD on hypothetical consent and social contract theory at the University of Sheffield in 2014. In 2015, Carl won the Robert Papazian Essay Prize in the *International Journal of Philosophical Studies*, and he has also published in *Res Publica*, and *Philosophy and Public Issues*. Along with a colleague, he is currently editing a collection on the topic of 'Free Speech and the Requirements of Democracy' which is due out in late 2018.

Full biography: http://www.leeds.ac.uk/arts/profile/125160/1496/carl_fox

Dr Katie Cresswell Maynard, Engineers Without Borders UK

Katie is Chief Executive of Engineers Without Borders UK, an NGO dedicated to focusing engineering on achieving sustainable development. To do this Engineers Without Borders UK drives a movement for change in how engineering is perceived, taught and practiced to emphasise social and environmental impacts and addresses unequal access to water, sanitation, energy and built environment provisions with partners in Africa, Asia and Latin America. As Chief Executive, Katie has overall responsibility for leading the organisation to achieve its strategic aims and all aspects of operational performance.

Prior to taking on this role in 2017, Katie was Head of Education at Engineers Without Borders and before that worked as a Consultant for Arup. Katie graduated from Durham in 2008 with a First in New and Renewable Energy.

Martin Davies MIET, The Institution of Engineering and Technology

Martin Davies MIET is Head of Digital Learning at The Institution of Engineering and Technology. He has worked in educational publishing for over 25 years and has specialised in digital education solutions for over 10 of those years. Martin heads up the IET Academy, a digital professional education solution (www.academy.theiet.org). Martin and his team have been working with the University of Leeds to prepare two courses in the field Engineering Ethics, the first of which launched in June 2018. This first course offers a comprehensive introduction to Engineering Ethics whilst the second course, which is in preparation, offers a more detailed overview of Computing Ethics.

Engineering Ethics 2018 Steering Group

Dr Andrew Chilvers, Royal Academy of Engineering

As a Senior Policy Advisor at the Royal Academy of Engineering (RAEng), Andrew works to advise UK government across a number of areas in engineering policy. He also supports the RAEng's leadership role in the engineering profession, for example, overseeing a review of the Statement of Ethical Principles for the Engineering Profession, undertaken with the Engineering Council. Prior to joining the RAEng, Andrew trained as an environmental engineer before undertaking doctoral research at University College London (UCL). This research focused on how engineers engage with social and environmental considerations in and through their work. This was sponsored by the global design and engineering consultancy, Arup. Andrew is an Honorary Lecturer at UCL's Department for Science, Technology, Engineering and Public Policy (STePP).

Deborah Seddon, Engineering Council

Deborah Seddon has held standards-related posts over the past fourteen years at the Engineering Council, the UK regulatory body for the engineering profession, and previously at the Institution of Civil Engineers. Currently, Deborah is leading on ethics-related work at the Engineering Council, building on the 2017 refreshed Statement on Ethical Principles, jointly published by the Engineering Council and the Royal Academy of Engineering.

Deborah has a background in HE and education for professionals. Before working in engineering, she was at the Architects Registration Board where her work included developing the principles and arrangements for continuing professional development (CPD).

Whilst on the Board of the Intellectual Property Regulation (IPReg) Board 2014-2017, Deborah was instrumental in its provision of ethics training for practitioners, which was developed with the IDEA Centre at Leeds. Ethics for practitioners continues to be a theme during Deborah's current role on the Board of the Chartered Institute for Archaeologists.

Johnny Rich, Engineering Professors Council

Johnny Rich is Chief Executive of the Engineering Professors' Council, which is the voice of engineering in UK higher education, representing over 7,500 academics in 84 universities as an influential force in national policy in HE, skills and industrial strategy. Johnny holds a number of other roles including Chief Executive of award-winning outreach organisation Push and a consultant in higher education and careers with recent clients including the European Commission, HEFCE and a host of recruiters, education bodies, charities and media organisations.

As a contributor to various think tanks and policy bodies, Johnny contributes widely to debates on education, employability, wider participation and social mobility. He recently spearheaded projects on school-leaver recruitment, international university rankings and on work-related learning.

With degrees from the Universities of Durham and East Anglia, his background also includes journalism, publishing, media relations, television and digital platforms. He appears regularly on television and radio and is author of the highly acclaimed novel *The Human Script*.

Twitter: @JohnnySRich | @EngProfCouncil | LinkedIn | johnnyrich.com

Richard Maudslay CBE FEng, Royal Academy of Engineering

Richard Maudslay is an engineer with a wide-ranging business career. Following roles in the UK and Mexico, he was appointed to run Rolls-Royce's £1.3Bn Industrial Power Group, covering all Rolls' non-aero interests, and joined the Rolls-Royce plc main Board. He remained in this role until Rolls' major structural reorganisation in 1997 led to its exit from most of its land-based power interests. Since then he has enjoyed a plural career on the boards of various private and public sector organisations including Chairman of MoD's Defence Science and Technology Laboratory (Dstl), Chairman of the National Nuclear Laboratory and Deputy Chairman of the Regional Development Agency One NorthEast.

Richard is a graduate of the University of Edinburgh. He is a Fellow of the Royal Academy of Engineering where he chairs the Academy's Engineering Ethics Working Group. He was appointed CBE in 2006 for services to business in the North East.

Katie Cresswell Maynard, Engineers Without Borders UK

Katie is Chief Executive of Engineers Without Borders UK, an NGO dedicated to focusing engineering on achieving sustainable development. To do this Engineers Without Borders UK drives a movement for change in how engineering is perceived, taught and practiced to emphasise social and environmental impacts and addresses unequal access to water, sanitation, energy and built environment provisions with partners in Africa, Asia and Latin America. As Chief Executive, Katie has overall responsibility for leading the organisation to achieve its strategic aims and all aspects of operational performance.

Prior to taking on this role in 2017, Katie was Head of Education at Engineers Without Borders and before that worked as a Consultant for Arup. Katie graduated from Durham in 2008 with a First in New and Renewable Energy.

Dr Jim Baxter, Inter-Disciplinary Ethics Applied Centre, University of Leeds

Jim Baxter manages IDEA's consultancy portfolio, providing ethical review and consultancy services, training and continuing professional development (CPD) and applied research. Past and current clients include the Royal Academy of Engineering, the Institution of Engineering and Technology, the National Nuclear Laboratory, the Royal Institute of Chartered Surveyors, the Institute and Faculty of Actuaries and the Banking Standards Board. As part of this work, he has written and presented on topics including professional ethics, integrity and organisational culture. Jim completed his PhD in 2017, investigating whether psychopaths are morally responsible for their actions.

Full biography: http://www.leeds.ac.uk/arts/profile/125160/1129/jim_baxter

Dr Rob Lawlor, Inter-Disciplinary Ethics Applied Centre, University of Leeds

Dr Rob Lawlor is a Lecturer at the IDEA Centre. He divides his time between undergraduate and postgraduate teaching, the development of teaching materials, and applied ethics research.

Rob's undergraduate teaching primarily involves Engineering Ethics (including Product Design and Aviation) and Ethics in Chemistry. At postgraduate level, he is involved in the [MA in Biomedical and Health Care Ethics \(online and campus\)](#), the [MA in Applied and Professional Ethics \(online\)](#) and PhD supervision.

Rob successfully completed an AHRC funded project on [climate change, ethics and responsibility](#) in 2016 and is continuing to conduct research on related themes. He has supported the Centre's national work on Engineering Ethics and contributed to a range of workshops and conferences. Rob also led the development of and edited the ebook *Engineering in Society* (Beyond the Technical....what every engineering student needs to know) which aims to raise student awareness of the wide ranging roles and responsibilities of engineers.