Imperial College London

Artificial Intelligence in Future Health & Care: Regulation, Evaluation & Policies

This event is hosted by
UKRI CDT AI for Healthcare and the AI Network
at Imperial College London
https://ai4health.io/ https://www.imperial.ac.uk/artificial-intelligence

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Artificial Intelligence in Future Health & Care: Regulation, Evaluation & Policies

Artificial Intelligence has already proven its potential to reshape healthcare technologies. It offers improved diagnosis, intervention, health system efficiency, and preventive medicine in the hands of health professionals, patients, carers, and the public.

However, established ways of testing and regulating technologies are not easy to apply to AI. In this symposium, presentations and panel discussions will explore:

- Evaluation and regulatory approaches, and how they can be developed to allow for faster and safer innovation.
- New horizons in AI, some of which will make it easier to ensure AI is explainable, reliable, while others will create new challenges for evaluation and regulations.

The Symposium is for researchers and professionals in healthcare, government, business and academia. Three sessions will be held on the 7th, 17th and 21st of September starting at 14.30 each day.

Hosts

UKRI Centre for Doctoral Training in AI for Healthcare
https://ai4health.io/

Artificial Intelligence Network
https://www.imperial.ac.uk/artificial-intelligence

Imperial College London is grateful for the support of the UKRI Strategic Priorities Fund for carrying out this work.

Programme

Session 1
7th September 2021

02:30 – 02:45	**Aldo Faisal** **Imperial College London** *Welcome and Introduction*
02:45 - 03:00	**Pearse Keane** **University College London** *Transforming healthcare with AI - lessons from ophthalmology*
03:00 -03:15	**Darren Treanor** **University of Leeds** *Digital Pathology: Opportunities and Challenges for Artificial Intelligence*
03:15 – 03:30	**Q&A**
03:30 - 03:45	**Johan Ordish** **Medicines & Healthcare products Regulatory Agency (MHRA)** *The future of AI as a medical device*
03:45 - 04:00	**Cliodhna Ni Ghuidhir & Harriet Unsworth** **NICE** *AI and digital: the trajectory of NICE's evidence standards framework, and joined-up regulatory policy*
04:00 - 04:15	**Nate Carrington** **Roche Diagnostics** *Approaches to the Regulation of AI Medical Devices: A Developer's Perspective*
04.15 - 04:25	**Bakul Patel** **Food and Drug Administration, USA** *AI in Future Health and Care*
	Break
04:35 -05:45	**Panel Session** **Chair: Sarah-Jane Green** Speakers joined by Deborah Ashby, Imperial College Stephen Lee, Association of British Healthcare Industries
	Event ends

Session 2
17th September 2021

02:30 - 02:40	**Aldo Faisal** **Imperial College London** *Welcome and review*
02:40 - 03:00	**Finale Doshi-Velez** **Harvard Paulson School of Engineering and Applied Sciences** *Practical considerations for Responsible AI*
03:00 - 03:20	**Yiannis Demiris** **Imperial College London** *Personal Assistive Robots*
03:20 - 03:35	**Tim Denison** **University of Oxford** *Adding Wisdom to "Smart" Biomedical Systems*
03:35 - 03:55	**Emma Brunskill** **Stanford University** *More Practical Reinforcement Learning*
03:55 - 04:15	**Laura Coombs** **American College of Radiology** *Regulating AI: Transparency, Trust, and Tracking*
04:15 - 04:30	**Aldo Faisal** **Imperial College London** *The AI Clinician: Reinforcement Learning Medical Interventions*
04:30 – 04:45	**Tobias Rijken** **Kheiron Medical Technologies** *Real World AI in Breast Cancer Screening*
	Break
04:55- 06:00	**Panel session** **Chair: Paul Matthews** Speakers joined by: Ferdinando Rodriguez Y Baena, Imperial College
	Event ends

Session 3
21st September 2021

02:30 - 02:45	**Aldo Faisal** **Imperial College London** Welcome and Review of themes from Sessions 1 and 2
02:45 - 03:05	**Ben Glocker** **Imperial College London** Safeguards in Medical Imaging AI
03:05 - 03:25	**Cynthia Rudin** **Duke University** Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead
03:25 - 03:40	**Andres Floto** **University of Cambridge** Understanding clinical trajectories in Cystic Fibrosis using machine learning
03:40 - 04:05	**Aris Tzavaras** **British Standards Institute (BSI)** Applying Standards in Practice
04:05- 04:25	**Alastair Denniston** **University of Birmingham** Are we there yet? Balancing purity, pragmatism and patient benefit
	Break
04:35 - 05:45	**Panel session:** **Chair: Paul Matthews** Speakers joined by: Hugh Harvey, Hardian Health Cliodhna Ni Ghuidhir, NICE
	Event ends

Session 1: 7th September 2021

Pearse Keane
University College London

"Transforming healthcare with AI - lessons from ophthalmology"

Pearse Keane is a consultant ophthalmologist at Moorfields Eye Hospital, London and a professor of Artificial Medical Intelligence at UCL Institute of Ophthalmology.

In 2016, he initiated a formal collaboration between Moorfields Eye Hospital and Google DeepMind, with the aim of developing artificial intelligence (AI) algorithms for the earlier detection and treatment of retinal disease. In May 2020, he jointly led work, published in Nature Medicine, to develop an early warning system for age-related macular degeneration (AMD), by far the commonest cause of blindnessin many countries.

In October 2019, he was included on the Evening Standard Progress1000 list of most influential Londoners and in June 2020, he was profiled in The Economist (https://www.economist.com/technology-quarterly/2020/06/11/the-potential-and- the-pitfalls-of-medical-ai).

Darren Treanor
University of Leeds

"Digital Pathology: Opportunities and Challenges for Artificial Intelligence"

Prof. Darren Treanor MB BSc (Computing) MD PhD is a consultant pathologist at Leeds Teaching Hospitals NHS Trust, honorary professor of pathology at the University of Leeds, adjunct professor in digital pathology at Linköping University, Sweden and Digital Pathology Lead for the UK Royal College of Pathologists. He is a clinical director of the UKRI Centre for Doctoral Training in Artificial Intelligence in Healthcare at the University of Leeds.

Dual qualified in medicine and computing, Dr. Treanor runs the Leeds virtual pathology project, with a multi-disciplinary team working in digital pathology research and innovation. He has co-authored over 100 papers in the medical and computing literature, most of them concerned with the application or development of digital pathology in clinical and preclinical areas.

He is director of the National Pathology Imaging Co-operative, a £44m Industry-NHS collaboration to deploy digital pathology. At Linköping his research includes the clinical adoption and validation of digital pathology in a fully digitised department, and the development and implementation of AI.

Johan Ordish
Medicines & Healthcare Products Regulatory Agency (MHRA)

"The future of AI as a medical device"

Johan leads Software Group within the Devices Division of the Medicines and Healthcare products Regulatory Agency (MHRA). Software Group are responsible for most aspects of regulating software as a medical device, AI included. Previously he worked for the PHG Foundation, University of Cambridge on the regulation of digital and genomic technology, specifically data protection and medical device law.Johan has four degrees, the last being a BA in Law from Wolfson College, Cambridgeand is currently an Associate at Hughes Hall, Cambridge.

Clíodhna Ní Ghuidhir
National Institute for Health and Care Excellence (NICE)

"AI and digital: the trajectory of NICE's evidence standards framework, and joined- up regulatory policy"

Clíodhna is leading the development of a multi-agency advisory service for artificial intelligence (AI) and data driven technologies; a collaboration between multiple regulatory partners. It will offer information, advice and support on regulation and health technology assessment to developers and adopters of AI and data driven technologies in health and care.

Previously, Clíodhna worked on a broad range of national innovation programmes, including real-world evaluation and the NHS test beds programme. Most recently, she led the development of an online 'single front door' for innovators to the NHS, known as the innovation service. She is a fellow of the Improving Global Health through Leadership programme and undertook a quality improvement placement in 2017 at the Western Cape Department of Health in South Africa.

Harriet Unsworth
National Institute for Health and Care Excellence (NICE)

Harriet Unsworth is a Technical Advisor in the Office for Digital Health at the National Institute for Health and Care Excellence (NICE). Harriet has a strong interest in digital healthcare, including the use of artificial intelligence. She is currently completing an MSc in data science and artificial intelligence and has a PhD in molecular biology.

Nate Carrington
Roche Diagnostics

"Approaches to the Regulation of AI Medical Devices: A Developer's Perspective"

Nathan A. Carrington (Nate) is the Head of Digital Health and Innovation for the Global Regulatory Policy and Intelligence team at Roche Diagnostics, located in Indianapolis, USA. In this role, Nate collaborates with internal and external stakeholders to develop and execute strategies related to a number of regulatory policy initiatives. His current areas of focus include Digital Health-related topics such as software qualification, SaMD classification, software clinical evidence requirements, the US FDA Software Precertification Pilot Program, requirements for AI-Based SaMD products, and Real World Evidence.

Previous roles Nate has held at Roche include Vice President of Quality and Regulatory Affairs for Roche's Diagnostic Information Solutions (DIS) business area located in Santa Clara, USA, leading the Centralized and Point-of-Care Solutions (CPS) and Solution and Integrated Services (SIS) regulatory affairs teams at Roche's Rotkreuz Switzerland site, and Director of Regulatory Affairs for Roche Diabetes Care in Indianapolis, USA.

Nate received his Ph.D. in Analytical Chemistry from the University of Tennessee. His doctoral research examined novel approaches to electrochemical and photometric sensing, and he began work at Roche Diagnostics in 2007 as a Principal Scientist in Roche's Diabetes Care team.

Bakul Patel
Director, Digital Health Center of Excellence - US FDA

"AI in Future Health and Care"

Bakul Patel is the Director for Digital Health Center of Excellence, at the Food and Drug Administration (FDA), providing leadership, strategic direction and regulatoryfor digital health, software and emerging technologies.

Prior to joining FDA, Mr. Patel held key leadership positions in several sectors including telecommunications industry, semiconductor capital equipment industry,wireless industry and information technology industry. Mr. Patel earned an MS in Electronic Systems Engineering from the University of Regina, Canada, and an MBAin International Business from The Johns Hopkins University.

In 2013, he created the term “software as a medical device” (SaMD) and under his leadership the International Medical Device Regulators Forum (IMDRF) establishedthe globally harmonized definition of SaMD, and later a globally harmonized regulatory framework for SaMD.

He is currently leading the development of an innovative software precertification program to reimagine regulation for Digital health and ensure timely access to safe
and effective digital health products

Sarah-Jane Green
Head of AI Regulations and Policy for NHSX

A qualified legal professional, Sarah-Jane is now the Head of AI Regulations and Policy for NHSX. She has a keen interest in Artificial Intelligence and its future application in the Healthcare space. NHSX are currently running a number of projects in partnership with the regulating bodies to ensure the safe and effective deployment of AI in health care.

Sarah-Jane is an experienced Defence Professional who spent a number of years with the Royal Air Force, before taking on a number of high-profile civilian roles including being the Head of International Defence Training, and later taking on new leadership roles during the COVID pandemic.

She was selected, and successfully completed the Advanced Command and Staff Course, which prepares students for a variety of senior leadership positions and also completed a Masters at King's College London, focusing on the legal implications of AI.

Deborah Ashby
Director of the School of Public Health, Imperial College London

Professor Deborah Ashby is Director of the School of Public Health at Imperial College London where she holds the Chair in Medical Statistics and Clinical Trials, and was Founding Co-Director of Imperial Clinical Trials Unit. She is a Chartered Statistician and her research interests are in clinical trials, risk-benefit decision making for medicines, and the utility of Bayesian approaches in these areas.

She is the immediate Past President of the Royal Statistical Society. She has sat on the UK Commission on Human Medicines and acted as adviser to the European Medicines Agency. She has recently chaired the Population Research Committee for Cancer Research UK and the National Institute for Health Research HTA Commissioning Board, and was Deputy Chair of the HTA Programme. Deborah was awarded the OBE for services to medicine in 2009, appointed an NIHR Senior Investigator in 2010, and elected to the Academy of Medical Sciences in 2012.

Stephen Lee
Director, Diagnostics Regulation, Association of British Healthcare Industries

Steve joined ABHI as Director of Diagnostics Regulation in 2020.
After completing his degree in Biochemistry and Biology at Aston University, Stevetrained as Biomedical Scientist, working in hospital microbiology before moving toindustry to work as company microbiologist. Steve joined MHRA in 1996 when it was still the Medical Devices Agency and when the IVD Directive had yet to be implemented.

While at MHRA, Steve worked with manufacturers, Notified Bodies, other Competent Authorities, Trade Associations, standards bodies and government departments. Steve was Chair

of the European Commission's IVD working group when the IVD regulations where being developed. In 2019, Steve was presentedwith the TOPRA award for regulatory excellence.

Session 2: 17th September 2021

Finale Doshi-Velez
Harvard Paulson School of Engineering and Applied Sciences

"Practical considerations for Responsible AI"

Finale Doshi-Velez is a Gordon McKay Professor in Computer Science at the Harvard Paulson School of Engineering and Applied Sciences. She completed her MSc from the University of Cambridge as a Marshall Scholar, her PhD from MIT, and her postdoc at Harvard Medical School. Her interests lie at the intersection ofmachine learning, healthcare, and interpretability.

Selected Additional Shinies: BECA recipient, AFOSR YIP and NSF CAREER recipient;Sloan Fellow; IEEE AI Top 10 to Watch.

Yiannis Demiris
Imperial College London

"Personal Assistive Robots"

Yiannis Demiris is a Professor of Human-Centered Robotics at Imperial College London, where he holds the Royal Academy of Engineering Chair in Emerging Technologies. He directs the Personal Robotics Lab, which investigates multimodal perception, multiscale user modelling, and cognitive architectures, for developing effective and trustworthy robot assistants, with a particular interest for applications in healthcare and assisted living. He has published more than 200 peer-reviewed journal and conference papers on these topics, while maintaining multidisciplinary national and international collaborations with academic and commercial organisations in human-robot interaction projects, including most recently the UKRI Trustworthy Autonomous Systems Node on Trust. In addition to assistive robotics research, he maintains a strong interest in robotics education, having received multiple teaching awards at Imperial including the Rector's Award on Teaching Excellence. He is a Fellow of BCS, IET and RSS.

Tim Denison
University of Oxford

"Adding Wisdom to "Smart" Biomedical Systems"

Professor Denison holds a joint appointment in Engineering Science and ClinicalNeurosciences at Oxford, where he explores the fundamentals of physiologic closed-loop systems in collaboration with the MRC Brain Network Dynamics Unit. Tim also serves as an advisor to several governments and industry boards on the field of translational medical devices; in particular, helping define strategies for mapping scientific discovery to product development roadmaps within the regulatory and economic constraints of medical systems. Prior to Oxford, Tim was a Technical Fellow at Medtronic PLC and Vice President of Research & Core Technology for the Restorative Therapies Group, where he helped oversee the design of next generation neural interface and algorithm technologies for the treatment of chronic neurological disease. In 2015, he was elected to the College of Fellows for the American Institute of Medical and Biological Engineering (AIMBE). He has a PhD from MIT in electrical engineering, and an AB in Physics and MBA from the University of Chicago.

Emma Brunskill
Stanford University

"More Practical Reinforcement Learning"

Emma Brunskill is an associate professor in the Computer Science Department at Stanford University where she leads the AI for Human Impact group. Her work focuses on reinforcement learning in high stakes scenarios-- how can an agent learn from experience to make good decisions when experience is costly or risky, such as in educational software, healthcare decision making, or people-facing applications. She was previously a professor at Carnegie Mellon University. She is the recipient of a multiple early faculty career awards (National Science Foundation, Office of Naval Research, Microsoft Research) and her group has received several best research paper nominations (Computer Human Interaction, Educational Data Miningx3) and awards (Uncertainty in AI, Reinforcement Learning and Decision Making, Intelligent Tutoring Systems).

Laura Coombs
American College of Radiology

"Regulating AI : Transparency, Trust, and Tracking"

Laura P. Coombs, PhD, is the Vice President of Data Science and Informatics at the ACR. She is responsible for the informatics portfolio of the ACR including the Data Science Institute (DSI). Services provided by the DSI for which she is responsible include AI algorithm evaluation and monitoring, use case development, and AI education. She provides product oversight of the development of the AI-LAB and the Data Archive and Research Toolkit (DART), and other informatics products including ACR Assist and ACR Common. Laura started at the ACR as Director of Data Registries and was an Assistant Research Professor at Duke Clinical Research Institute and George Washington University Biostatistics Center prior to joining theACR. She received her PhD in Statistics from Oklahoma State University.

Aldo Faisal
Director of UKRI CDT AI for Healthcare, Imperial College London

"*The AI Clinician: Reinforcement Learning Medical Interventions"*

Professor Aldo Faisal is the Professor of AI & Neuroscience at the Dept. of Computing and the Dept. of Bioengineering at Imperial College London. He wasawarded a UKRI Turing AI Fellowship. Aldo is the Director of the UKRI Centre for Doctoral Training in AI for Healthcare.

In his two departments, Aldo leads the Brain & Behaviour Lab focussing on AI & Neuroscience and the Behaviour Analytics Lab at the Data Science Institute. Heis Associate Investigator at the MRC London Institute of Medical Sciences and is affiliated faculty at the Gatsby Computational Neuroscience Unit (University College London).

He is the Elected Speaker of the Cross-Faculty Network in Artificial Intelligence representing AI in College on behalf of over 200 academic members, serves as an Associate Editor for Nature Scientific Data and PLOS Computational Biology and has acted as conference chair, program/area chair, chair in key conferences in the field (e.g. Neurotechnix, KDD, NIPS, IEEE BSN). In 2016 hewas elected into the Global Futures Council of the World Economic Forum.

Tobias Rijken
Kheiron Medical

"Real World AI in Breast Cancer Screening"

Tobias Rijken is the Co-Founder & CTO at Kheiron Medical Technologies, a medicalimaging company that uses advanced machine learning technologies to develop and provide intelligent tools for radiologists, radiology departments, imaging centers and hospitals to improve efficiency, consistency and accuracy of radiologyreporting.

Kheiron Medical Technologies was founded with the sole focus of helping detectbreast cancer earlier.

Paul Matthews
Head of the Department of Brain Sciences, Imperial College London

Paul Matthews, OBE, DPhil, FRCP, FMedSci is the Edmond and Lily Safra Professor of Translational Neuroscience and Therapeutics, Head of the Division of Brain Sciences, an Associate Director of the UK Dementia Research Institute and an Associate Director of the Data Science Institute at Imperial College London. He is an NIHR Senior Investigator.

Since 2009, he has been on the Steering Committee of UK Biobank and chairs the Imaging Enhancement Working Group, which has supported UK Biobank for creating the world's largest imaging epidemiological dataset. He recently has led the development of the OPTIMISE Pharmacovigilance Study, an academic initiatedacademic-industry partnership to prospectively acquire real world date concerningthe safety of disease modifying therapies for multiple sclerosis.

His laboratory-based research addresses neuroinflammatory mechanisms of neurodegeneration in dementia and progressive multiple sclerosis. Previously, Matthews spent almost 9 years as a Vice President in GlaxoSmithKline, holding a variety of senior portfolios, including those for the GSK Clinical Imaging Centre andthe later Global Imaging Group. He founded the Oxford FMRIB Centre, which he directed from 1995-2005. He now sits on the Scientific Advisory Board for Ipsen Pharmaceuticals and regularly acts an external consultant for pharma and academic centres.

He is a Fellow of the Academy of Medical Sciences, a Fellow by Special Election ofSt Edmund Hall, Oxford and a Fellow of the Academea Europea. He was awarded an OBE in 2008 for services to Neuroscience.

Ferdinando Rodriguez y Baena
Imperial College London

Ferdinando Rodriguez y Baena is Professor of Medical Robotics in the Department of Mechanical Engineering at Imperial College, where he leads the Mechatronics inMedicine Laboratory and the Applied Mechanics Division. He has been the Engineering Co-Director of the Hamlyn Centre, which is part of the Institute of Global Health Innovation, since July 2020. He is a founding member and great advocate of the Imperial College Robotics Forum, now the first point of contact forroboticists at Imperial College.

His 20-strong team of staff and PhD students has a translational focus, though theirwork encompasses both "blue skies" research and "near-to-market" development. He is the Chair of the Programme Committee for the International Society for Computer Assisted Orthopaedic Surgery (CAOS International), CAOS UK, and the Hamlyn Symposium; He is also the founding Chair of the IET's recently established Communities Committee for Technical Networks (CC TN), a Leverhulme Prize winner (engineering), a former ERC grant holder, and the coordinator of an €8.3M European project on robotic-assisted neurosurgical drug delivery (EDEN2020). He has published over 160 papers and secured in excess of £12M in research funding to date.

Session 3: 21st September 2021

Ben Glocker
Imperial College London

"Safeguards in Medical Imaging AI"

Ben Glocker is Reader (eq. Associate Professor) in Machine Learning for Imaging atthe Department of Computing at Imperial College London where he co-leads the Biomedical Image Analysis Group. He also leads the HeartFlow-Imperial Research Team and is scientific advisor for Kheiron Medical Technologies.

He holds a PhD from TU Munich and was a postdoc at Microsoft and a Research Fellow at the University of Cambridge. He is a member of the Young Scientists Community of the World Economic Forum and a member of the AI Task Group ofthe UK National Screening Committee advising the Government on questions around clinical deployment of AI for screening programmes. His research is at theintersection of medical imaging and artificial intelligence aiming to build computational tools for improving image-based detection and diagnosis of disease.

Cynthia Rudin
Duke University

"Stop explaining black box machine learning models for high stakes decisions anduse interpretable models instead"

Cynthia Rudin is a professor of computer science, electrical and computer engineering, and statistical science at Duke University, and directs the Prediction Analysis Lab, whose main focus is in interpretable machine learning. She is also anassociate director of the Statistical and Applied Mathematical Sciences Institute (SAMSI). Previously, Prof. Rudin held positions at MIT, Columbia, and NYU. She holds an undergraduate degree from the University at Buffalo, and a PhD from Princeton University. She is a three-time winner of the INFORMS Innovative Applications in Analytics Award, was named as one of the "Top 40 Under 40" by Poets and Quants in 2015 and was named by Businessinsider.com as one of the 12 most impressive professors at MIT in 2015. She is a fellow of the American Statistical Association and a fellow of the Institute of Mathematical Statistics.

Andres Floto
University of Cambridge

"Understanding clinical trajectories in Cystic Fibrosis using machine learning"

Andres Floto is a Wellcome Trust Investigator and Professor of Respiratory Biology in the Molecular Immunity Unit of the University of Cambridge (based at the MRC Laboratory of Molecular Biology), Co-Director of the Cambridge Centre for AI in Medicine (CCAIM), Research Director of the Cambridge Centre for Lung Infection at Royal Papworth Hospital, and Director of the UK Cystic Fibrosis (CF) Innovation Hub.

His basic research is focused on understanding how bacteria interact with the immune system.

His clinical research is centred around using machine learning to understand and predict pulmonary exacerbations, and applying deep learning methods to provide individualised clinical forecasting for patients with CF.

Aris Tzavaras
British Standards Institute (BSI)

"Applying Standards in Practice"

Dr. Aris Tzavaras is a BSI Technical Specialist and Scheme Manager within the Active Devices team at BSI. As part of his work as Technical Specialist, he has reviewed MDR and MDD active devices including AI software devices. He has more than 20 years' experience in Medical Devices including Academic lecturing for BSc and MSc Biomedical Engineering programs. He holds a PhD in Health Informatics from City University of London on Artificial Intelligence.

Alastair Denniston
University of Birmingham

"Are we there yet? Balancing purity, pragmatism and patient benefit"

Professor Alastair Denniston is a consultant ophthalmologist (eye specialist) at University Hospitals Birmingham NHS Foundation Trust, and the Centre for Regulatory Science and Innovation (Birmingham, UK), leading a programme of work in health data research and the application of digital healthcare (includingartificial intelligence) to improve patient care in the 'real world'. He is also the Director of INSIGHT, the UK's Health Data Research Hub for Eye Health and a Member of the UK Government's Regulatory Horizons Council.

Alastair leads a team committed to ensuring that the best innovation within the broad field of 'artificial intelligence' is translated safely, efficiently, equitably and inclusively to patients. This includes improving the design and reporting of clinicaltrials in this area (CONSORT-AI and SPIRIT-AI), highlighting issues of representativeness including the risk of *health data poverty*; developing tools to support safe deployment (including validation datasets); and working with regulators and other stake-holder groups to support the best of these innovationsright through the implementation pathway to routine patient care and public health.

Paul Matthews
Head of the Department of Brain Sciences, Imperial College London
[See Session 2]

Hugh Harvey
Hardian Health

Dr Harvey is an experienced clinician and health technology consultant. He is a board certified consultant radiologist and academic, trained in the NHS and Europe's leading cancer research center, the Institute of Cancer Research, where he was twice awarded ICR Science Writer of the Year.

He has held leadership roles at two flagship UK startups, leading to successfully gaining the world-first CE marking for an AI-supported triage service, and the first UK CE mark for a deep-learning medical device.

He was a co-opted member of the Royal College of Radiologists informatics committee and sat on their AI policy reference group. He also acted as co-chair to the Topol health technology review for Health Education England commissioned by the Secretary of State for Health and Social Care, and sat on the editorial board at Nature: Digital Medicine.

He now serves as Managing Director at Hardian health, a multi-disciplinary digital health technology consultancy, and holds an honorary research fellowship at the Institute of Cognitive Neurosciences at UCL.

Cliodhna Ni Ghuighir
NICE
[See Session1]