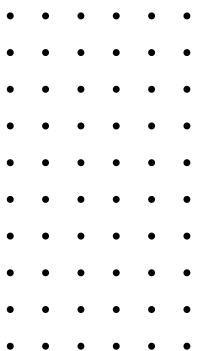


MEDTECH LINKS

Innovations in Design &
Engineering in MedTech



MEDTECH LINKS

Event Details

Tuesday 23rd September 2025

13:00 - 18:30

RSM 2.28 // RSM 3.01 (C, D, E)

Royal School of Mines

Imperial College London

South Kensington

Overview

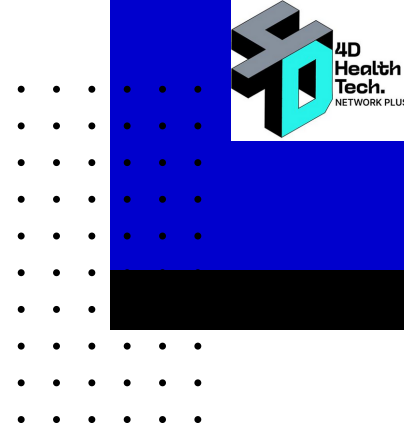
Our September MedTech Links event explores how Imperial's highly innovative research is being translated into new medical technologies for patients and their clinicians. New discoveries and advancements in medical science require novel approaches to the design and engineering of MedTech. Join us to find out how our researchers and clinicians bring new ideas and engineering approaches to medical technologies and unmet clinical needs.

Hosted in partnership with the 4D Health Tech Network.

4D HealthTech

4D HealthTech brings together pioneering researchers, engineers, clinicians, and innovators to reimagine what healthcare can be when time is embraced as a design element. This inclusive community is united by a shared mission: to create dynamic, patient-responsive medical technologies that adapt with life's rhythms.





PROGRAMME

Registration, Lunch and Exhibition

13:00 - 14:00

RSM 3.01 (C, D, E)

Introduction & Keynote Professor James Moore

14:00 - 14:15

RSM 2.28

Session 1: MedTech Tools, Interventions and Education

14:15 - 15:00

RSM 2.28

Elyse Marshall & Rusne Joneikyte “EvoTouch - Evolving touch feedback of virtual bodies for enhanced medical simulation training.”

14:15 - 14:30

Professor Lorenzo Picinali “Virtual and augmented reality for hearing rehabilitation and support.”

14:30 - 14:45

Mr Daniel Leff “Technologies for precision breast cancer surgery.”

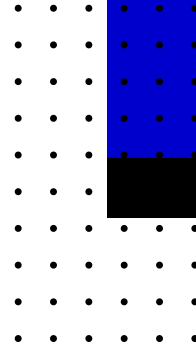
14:45 - 15:00

Break and Exhibition

15:00 - 15:30

RSM 3.01 (C, D, E)

PROGRAMME



Session 2 : Prosthetics, Wearables, Implants and Biomonitoring

15:30 - 16:15

RSM 2.28

Professor Anthony Bull “TaKeuP: Through knee prosthesis with increased function, lower cost and easy maintenance.”

15:30 - 15:45

Professor Dario Farina “AxonCtrl: Minimally invasive implant for large-scale neural interfacing.”

15:45 - 16:00

Dr Richard Jan van Arkel “Orthopaedic implants that control healing.”

16:00 - 16:15

Session 3 : Human-centred Design & Computation

16:15 - 17:00

RSM 2.28

Dr Ryan Murphy “Towards the design and optimisation of dissolvable patient-specific biomedical implants.”

16:15 - 16:30

PROGRAMME

Session 3 : Human-centred Design & Computation (cont.)

16:15 - 17:00

RSM 2.28

Dr Mark Runciman “Soft robotic devices for advanced endoscopic treatment of early gastrointestinal cancer.”

16:30 - 16:45

Dr Aravind Jayasankar & Dr Connor Myant “Developing mass customisation design pipelines for patient specific medical devices: A case study on NIV masks”

16:45 - 17:00

Reception and Exhibition

17:00 - 18:30

RSM 3.01 (C, D, E)

SPEAKERS



Professor James Moore

The Bagrit & RAEng Chair in Medical Device Design, Dept of Bioengineering

Prof. James Moore is the Bagrit Chair in Medical Device Design in the Department of Bioengineering. His research interests include cardiovascular biomechanics, lymphatic biomechanics and medical device development. He is currently developing two technologies for preventing and resolving secondary lymphoedema, which can form subsequent to cancer surgery. Along with his funding from government, charity, and industry sources, Prof. Moore has received 13 patents for medical devices and testing equipment. Prof. Moore has also co-founded four startup companies, and produced reports on the economic contributions of the UK MedTech sector. He has developed two educational programs at Imperial College in medical device entrepreneurship: a masters program that has produced 13 startups and a bachelor of science program in Biomedical Technology Ventures. Prof. Moore is a fellow of AIMBE, ASME and IMECE.



Elyse Marshall

Research Assistant, Morph Lab, Dyson School of Design & Engineering

Elyse is a 2023 Design Engineering MEng graduate from Imperial College London. She is working in the Morph Lab on a medical simulator to help students to learn critical diagnosis skills. The project focuses on developing a portable, accessible, and low-cost haptic mouse to enable realistic and multi-sensory interaction with a virtual patient. Elyse is passionate about designing with users in mind and creating efficient systems that solve problems.



Rusne Joneikyte

Research Assistant, Morph Lab, Dyson School of Design & Engineering

Rusne has been developing medical simulators to help students to learn critical diagnosis skills, including her Final Year Project titled "Granular Jamming Based Variable Size Nodules for Breast Examination Training". She also focused on creating an interactable virtual patient which acts as an interface for a portable, accessible, and low-cost haptic enabled physical examination simulator. Currently she is working on a soft robotic colon simulator to help test the development of a kirigami inspired self-propelling colonoscopy probe, funded by the ARIA Robot Dexterity programme.

SPEAKERS



Professor Lorenzo Picinali

Professor in Spatial Acoustics & Immersive Audio, Dyson School of Design & Engineering

Professor Picinali leads the Audio Experience Design research group with the Dyson School of Design Engineering at Imperial. His current work includes SONICOM, looking at developing the next generation of immersive audio technologies using AI; BEARS, looking at helping teenagers with bilateral cochlear implants using a VR-based auditory training approach; as well as other projects focused on exploring spatial hearing mechanisms, developing spatial acoustics and immersive audio technologies, and using these in real-life applications.



Mr Daniel Leff

Reader in Breast Surgery, Dept of Surgery & Cancer

Mr Leff is Co-PI on the CRUK funded “REI-EXCISE” trial which is a first in human trial seeking to validate a mass-spectrometry based intelligent knife or “iKnife” as an immediate margin detection system to improve the precision of breast conserving surgery, reduce re-operative intervention, and enhance quality of life. He is PI on the “MAMMOBOT” project, which is a multicentre, multidisciplinary study that aims to develop a flexible growing robotic for early ductoscopic diagnosis and treatment of breast cancer. He also co-chairs the “Precision Therapy” theme of Imperial’s CRUK Centre and represents cancer surgery for the Imperial ECMC and co-leads the “Precision Surgery” theme of the NIHR Oncology Translational Research Collaborative (O-TRC).



Professor Anthony Bull

Professor of Musculoskeletal Mechanics, Dept of Bioengineering

Anthony is the convening co-director of the newly formed School of Health and Technology working on large-scale, impact driven research across the whole of Imperial College to create a fairer, healthier and more resilient future. His personal research spans biomechanics and design, creating technology solutions for musculoskeletal conditions. Anthony is a fellow of the Royal Academic of Engineering and is one of 50 members of the World Council of Biomechanics.

SPEAKERS



Professor Dario Farina

Chair in Neurorehabilitation Engineering, Dept of Bioengineering

Professor Farina's research focuses on biomedical signal processing, neurorehabilitation technology, and neural control of movement. He has been the President of the International Society of Electrophysiology and Kinesiology (ISEK) (2012-2014) and is currently the Editor-in-Chief of the official Journal of this Society, the Journal of Electromyography and Kinesiology. He is also currently an Editor for IEEE Transactions on Biomedical Engineering and the Journal of Physiology, and previously covered editorial roles in several other Journals.



Dr Richard Jan van Arkel

Senior Lecturer, Dept of Mechanical Engineering

Richard van Arkel is a Senior Lecturer in the Department of Mechanical Engineering with a research focus in orthopaedic systems and preclinical testing. He applies engineering science to advance orthopaedic interventions, investigating implantable sensors, the impact of surgery on joint and bone biomechanics, implant function, additive manufacturing, ultrasound and new methods for preclinical analysis.



Dr Ryan Murphy

Research Associate in Optimisation of 3D-printed Structures, Dept of Aeronautics

The primary focus of Dr Murphy's work is to apply structural optimisation and generative-design methods to generate patient-specific orthopaedic implants, with a particular emphasis on biodegradable spinal implants. A core element of this work is reducing manual elements of the design process by creating an end-to-end multimodal pipeline that integrates agentic workflows, covering everything from medical-image segmentation through to topology-optimisation and boundary-condition application, to produce low-cost, seamless implants directly from CT/MRI data with minimal skilled intervention.

SPEAKERS



Dr Mark Runciman

Research Associate in Soft Medical Robotics

Dr Runciman is a Research Associate at the Hamlyn Centre for Robotic Surgery based in the Department of Surgery and Cancer, St Mary's Hospital.

This has lead to opportunities to begin translation of his research from the benchtop towards patients, considering the broader challenges such as medical device regulatory strategy, intellectual property, the commercial landscape, as well as both user and customer needs.

Dr Runciman's research interests include:

Novel manufacturing techniques, particularly laser welding of thin films, and includes sensing and control of soft robots, and self-propelling soft robotic devices.



Dr Aravind Jayasankar

Research Associate in Advanced Design Engineering, Dyson School of Design Engineering

Dr. Aravind Kumar Jayasankar's research lies at the intersection of structural biomechanics, materials science, and medical technology. His work focuses on leveraging AI-driven tools and 3D printing to design patient-specific medical devices. With a strong background in biomechanics and materials science, Dr. Jayasankar applies his expertise to optimize the design and functionality of medical devices, ensuring they meet clinical requirements while being cost-effective and accessible. A key aspect of his research is automating the design process from data processing to prototype creation, reducing the need for manual intervention. By collaborating closely with clinicians, he strives to develop technologies that improve patient care and contribute to the future of medical device innovation.



Dr Connor Myant

Associate Professor of Digital Manufacturing Systems, Dyson School of Design Engineering

Dr Myant is a Senior Lecturer and group lead in the Advanced Manufacturing Group at the Dyson School of Design Engineering. His general research interests include: Design for Additive Manufacture, Mass Customisation, development of 3D Printing technology and software, and Tribology.



CONTACT INFO

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