

Author Biographies

About the Editor

Naren Barfield

London, United Kingdom

Professor Naren Barfield is an internationally recognised academic and research leader with more than 20 years of senior executive leadership experience. He was an inaugural Council Member and Insight and Engagement Champion for Research England, and is a Trustee of LAMDA. As Deputy Vice-Chancellor and Provost at the Royal College of Art in London, he oversaw the academic, research and international portfolios, sustaining an unbroken QS World #1 ranking for 10 consecutive years, championing innovation through the integration of science, technology, arts and humanities, and establishing partnerships with universities in Japan, China, Singapore and the USA, including co-establishing one of the world's first international research laboratories in artificial intelligence and design with a leading Hong Kong university.

Over his career he has produced more than 100 publications, keynote speeches and conference presentations to parliamentary groups, science councils and learned societies, additionally with more than 90 individual and collaborative exhibitions in the UK, Europe, USA, South Africa, Australia, China and Japan, with creative work included in collections worldwide including the Victoria and Albert Museum, the British Museum, and collections in the USA, Japan and China.

Professor Barfield's grant capture exceeds eight figures (> £10m) as PI or CoI, and he has served nationally and internationally across research councils and funding bodies as peer reviewer, strategic advisor, or chairing key sector funding and review panels. He continues to provide confidential consultancy to global advisory firms, cultural organisations, research bodies and universities on research strategy and assessment, digital infrastructure, quality assurance, student recruitment, and strategic planning.

He is a distinguished visiting professor at several international universities, a judge for the QS Reimagine Education Awards, an international jury member for the Frontier Design Prize, and has overseen over two dozen research degree supervisory completions or examinations in design, digital visualisation, motion graphics, fine art, drawing and psychology, cultural policy, education and pedagogy, virtual reality, curating, and machine learning.

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Part I

Wellbeing and Health Futures

Equira™ (VoxelPHITS): Democratising Precision Radiopharmaceutical Therapy for Global Cancer Care

Basri Johan Jeet Abdullah

Hospital Picaso, Taylors University, Malaysia

Dr Basri Johan Jeet Abdullah is a consultant interventional radiologist with over 30 years of clinical and academic experience. He is currently affiliated with PICASO Hospital and the University of Malaya Specialist Centre (UMSC) in Kuala Lumpur, Malaysia. He also serves as an Adjunct Professor at Taylor's University and is a Retired Professor from the Faculty of Medicine, University of Malaya.

Dr Basri specialises in interventional radiology and biomedical imaging, with expanding interests in PET/-CT imaging and radioligand therapy. His expertise includes advanced image-guided procedures, vascular and oncologic interventions, and prostate imaging. A committed innovator, he holds several patents, some successfully commercialised. He is also an active contributor to professional education through forums, workshops, and webinars. His extensive experience in radiological practices has established him as a leading figure in interventional radiology in Malaysia.

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Plasma Polymerized Nanoparticles: From Cell Imaging to Cancer Therapy

Behnam Akhavan

University of Newcastle, Australia

Professor Behnam Akhavan is an Australian Research Council (ARC) DECRA Fellow and an Associate Professor of Biomedical Engineering at the University of Newcastle, Australia. He leads the Plasma Bio-engineering Laboratory at the School of Engineering and the Hunter Medical Research Institute (HMRI). Since obtaining his PhD in Advanced Manufacturing from the University of South Australia in 2015, he has held postdoctoral and academic positions at the Max Planck Institute for Polymer Research and Fraunhofer Institute of Microtechnology in Germany, and the University of Sydney. Prof Akhavan's pioneering work in plasma bioengineering, published in over 90 journal articles, has led to innovative applications in healthcare and beyond. He is recognised by Engineers Australia as one of the nation's Most Innovative Engineers.

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An Affordable Brainwave Reader to Help People with Motor Neurone Disease (MND) Communicate via Thoughts Using Novel AI Technology

Amin Al-Habaibeh

Nottingham Trent University, United Kingdom

Professor Amin Al-Habaibeh is a leading academic and currently serves as Professor and Chair of Intelligent Engineering Systems within the Product Design team at Nottingham Trent University (NTU). His pioneering research is reshaping the future by making a tangible, positive impact on individuals, communities, and society at large.

Professor Al-Habaibeh has held several prestigious leadership roles, including UK National Director of the Doctoral Training Alliance in Energy (DTA- Energy). He acts as the Director of the Product Innovation Centre at NTU.

With more than 26 years of experience in industrial research and collaboration, and 8 years as an industrial placement adviser, he maintains strong and dynamic ties with industry.

An accomplished scholar, Professor Al-Habaibeh has authored over 240 international publications and patents. His work has gained widespread recognition, featured by major media outlets including CNN, BBC, The Daily Telegraph, Al Jazeera, The Guardian, The Sun, and The Daily Mail.

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IA Multimodal Platform for Objective Pain Measurement

Yacine Hadjiat

Dubai Health - Mohammed Bin Rashid University, United Arab Emirates

Dr Yacine Hadjiat, MD, PhD, is a physician and healthcare innovator specialising in pain, neuroscience, advanced healthcare technologies, public health, and health system transformation. He currently serves as the Head of Innovation in Health Science and Digital Health at Dubai Health, and is an Associate Professor of Innovation at the Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) in Dubai. Dr Yacine Hadjiat holds several international academic collaborations and affiliations, including with INSERM (Institut National de la Santé et de la Recherche Médicale), Université Paris Cité, ESCP Business School, and other global institutions. His career spans clinical practice, academic research, and executive leadership roles across the life sciences sector in Europe, the United States, Asia, and more recently, the Middle East.

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A Low-cost, Portable, and AI-powered Device for Cardiac Investigation

Ernest Nlandy Kamavuako

King's College London, United Kingdom

Dr Ernest Nlandu Kamavuako received his Master's and PhD in Biomedical Engineering from Aalborg University, Denmark, in 2006 and 2010, where he served as Assistant Professor (2010-2014) and Associate Professor (2014-2017) in the Department of Health Science and Technology. He joined King's College London as Senior Lecturer in the Department of Engineering in October 2017. From 2012 to 2013, he was a Visiting Postdoctoral Fellow at the Institute of Biomedical Engineering. Between 2017 and 2021, he was appointed Adjunct Professor in the Department of ECE, University of New Brunswick, Canada. He was an Academic Visitor in the Department of Bioengineering at Imperial College London, United Kingdom, in 2017. He has a strong publication record. His research focuses on cardiac disease diagnosis and fluid intake monitoring, with a particular emphasis on low-income settings. He is now an Associate Editor for *Frontiers in Neuroscience*, Neuroprosthetics section.

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Edge AI-enabled Smart Glasses and Companion Robots for In-home Health Monitoring and Medication Adherence

Michele Magno

ETH Zurich, Switzerland

Professor Michele Magno is currently a Senior Researcher and Privatdozenten at ETH Zürich, Switzerland at the Department of Information Technology and Electrical Engineering (D-ITET). He is head of the D-ITET Centre for Project-based Learning at ETH (pbl.ee.ethz.ch). He received his master's and PhD degrees in electronic engineering from the University of Bologna, Italy, in 2004 and 2010, respectively. He was a postdoctoral researcher at Tyndall Institute, Ireland and University College Cork, Ireland, and a visiting professor at University of Nice and ENSSAT University of Rennes, France. His current research interests include smart sensing, low-power machine learning, wireless sensor networks, wearable devices, energy harvesting, low-power management techniques, and extension of the lifetime of battery-operated devices. He has authored over 350 papers in international journals and conferences, with some publications awarded as best paper awards in the IEEE International Conference on E-health Networking, Application and Services 2018, IEEE Sensors Applications Symposium (SAS) 2018, IEEE International Workshop on Advances in Sensors and Interfaces 2017, among others. He is a senior IEEE member and an ACM member.

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Transforming Preeclampsia Care Through Cross-disciplinary Innovation: From Platelet Biomarkers to Real-time Clinical Decision Support

Patricia Maguire

University College Dublin, Ireland

Professor Patricia Maguire is a leading interdisciplinary scientist known for merging AI with Biomedical Science. She is a Professor of Biochemistry at University College Dublin (UCD) and serves as Director of the UCD Institute for Discovery, an interdisciplinary research institute focused on addressing global challenges.

Professor Maguire's pioneering work on the 'platelet releasate' has advanced the understanding of platelet biology. She utilises this knowledge to develop novel diagnostic and therapeutic strategies for inflammatory diseases, including multiple sclerosis, venous thromboembolism, and pre-eclampsia, and leads the multi-award-winning AI_PREMie, a UNESCO Global Top 100 AI Project. Her research has earned her numerous awards, collaborations with major industry, and over 70 peer-reviewed articles in prestigious journals like Nature Communications, PNAS, and Blood. She enjoys teaching and is a vocal advocate for women in STEM, with an award-winning commitment to equality, diversity, and inclusion.

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MONA: A Robotic Patient Simulator for Occupational Therapists Training

Perla Maiolino

University of Oxford, United Kingdom

Professor Maiolino is a leading expert in soft robotics and tactile sensing, serving as Associate Professor at the University of Oxford and is a senior member of the Oxford Robotics Institute. She founded the Soft Robotics Lab. Her research and innovations, such as CySkin, have led her to leadership roles in major partnerships like the SESTOSENSO project and the EPSRC 'From Sensing to Collaboration' grant, as well as keynote talks, awards, including the Queen's Anniversary Prize, features on the BBC, interviews with the Wall Street Journal and Computerphile, and exhibitions at the Science Museum in London. Her team's work on origami robotics was selected for the 2024 Prototypes for Humanity Exhibition in Dubai and showcased at the British Science Festival. Besides her research, she contributes as an Associate Editor for top journals like SoRo and RA-L and founded the Women in Robotics at ORI, promoting diversity and inclusion within the robotics community.

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PCAD: Prosthetic Comfort by Design—An Educational Innovation in Prosthetic Measurement

Anthony McGarry

University of Strathclyde, United Kingdom

Dr Anthony McGarry is a Senior Teaching Fellow within the Department of Biomedical Engineering at the University of Strathclyde and a Health and Care Professions Council registered prosthetist and orthotist. He plays a central role in the delivery and development of both undergraduate and postgraduate education with a particular focus on lower limb prosthetics. His teaching integrates clinical expertise with research-informed practice to support the development of competent and reflective healthcare professionals.

Dr McGarry completed his doctoral studies at the University of Strathclyde in 2009, where his research evaluated prosthetic shape capture systems. This work established a foundation for his continued interest in improving the accuracy and effectiveness of prosthetic design processes. His research expertise centres on clinical management strategies alongside socket design methodologies, shape capture techniques, and the assessment of residual limb interface pressures.

His current research activity focuses on the evaluation of prosthetic shape capture methods and the application of computer-aided design technologies in prosthetics. Through this work, he contributes to advancing evidence-based practice and enhancing patient outcomes. Dr McGarry has published in peer-reviewed journals and continues to engage in collaborative research that bridges clinical application and engineering innovation within prosthetics and orthotics.

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Artificial Intelligence and Quantum Computing for the Design of Novel Kisspeptin-10 Analogues and Their Experimental Evaluation in Cervical Cancer Cells

Deisy Yurley Rodríguez-Sarmiento

Universidad Autonoma de Bucaramanga, Colombia

Dr Deisy Yurley Rodríguez-Sarmiento is a Full Professor at the Universidad Autónoma de Bucaramanga (UNAB) in Bucaramanga, Colombia. She obtained her PhD in Biochemistry from the University of São Paulo, Brazil, where she specialised in peptide design, molecular pharmacology, and GPCR signaling. Her research focuses on the rational design, synthesis, and experimental evaluation of peptide-based ligands aimed at modulating G protein-coupled receptors (GPCRs), with particular interest in biased agonism, receptor structural dynamics, and the development of innovative therapeutic candidates.

Throughout her career, Dr Rodríguez-Sarmiento has led interdisciplinary projects involving chemical peptide synthesis, molecular modeling, functional assays (including BRET-based signaling), and structure–activity relationship analysis. She has contributed to advancing the understanding of GPCR-mediated signaling pathways in cancer and other pathological conditions, and her work integrates

computational approaches with experimental validation to accelerate the discovery of targeted peptide modulators.

In addition to her research activities, she teaches courses in biochemistry, pharmacology, and molecular biology, and actively mentors undergraduate and graduate students.

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PermeaSense: Rethinking How We Test Antimicrobials in the Fight Against Biofilm Infections

Eleonora Secchi

ETH Zurich, Switzerland

Dr Eleonora Secchi is Group Leader at ETH Zurich, where she leads the bioMatter Microfluidics group. Her research focuses on the physics of biofilms—bacterial communities with major implications in medicine and the environment—investigating their structure, mechanics, and resilience through microfluidics, soft matter physics, and biophysics. Trained in soft matter physics during her PhD at Politecnico di Milano, she later specialised in nanofluidics during a postdoc at ENS Paris, where she authored a Nature paper.

In 2018, she was awarded the prestigious SNSF PRIMA Grant to establish her own research group at ETH Zurich. Her work has since produced high-impact publications and a patented microfluidic platform for probing antibiotic tolerance in biofilms. Recognised as a Soft Matter Emerging Investigator in 2022, she also serves on the ESA Topical Team on Biofilms and contributes to the international committees of several leading conferences in soft matter and porous media.

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Nano Plants (Nanostructured Implants)

Bala Vaidhyanathan

Loughborough University, United Kingdom

Professor Bala Vaidhyanathan is a Professor of Advanced Materials and Processing and was the Associate Dean for Enterprise at Loughborough University (LU). He leads the Advanced Ceramics Research Group and Loughborough Materials Characterisation Centre, a £10 million state-of-the-art facility, in the Materials Department. He has authored over 200 publications (>5280 citations, H-index 40), 7 book chapters, is an inventor on 17 patents, and delivered >60 plenary, keynote, and invited presentations in international conferences. He is also the Chief Editor of *Advances in Applied Ceramics* and on the Editorial Board for four international journals. He holds >47 research grants worth >£30.5M, of which 40 had direct industrial contributions.

Vaidhyanathan has pioneered the development of field-assisted sintering methods for functional ceramics, and Loughborough is currently regarded as one of the world leaders in the utilisation of these

techniques and hosts the largest additive manufacturing (AM) ceramics group in the UK. He is also the University's Special Envoy for Internationalisation.

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Part II

Sustainable and Resilient Infrastructure

Co-creating Cities with AI and Digital Twins: A Multispecies Participatory Approach

Andrea Conserva

Institute for Advanced Architecture of Catalonia, Spain

Professor Andrea Conserva is an urban innovation expert, European project manager, and researcher with over a decade of experience at the intersection of advanced architecture, sustainable urban transformation, and digital technologies. Based in Barcelona, Andrea currently contributes to international R&D projects within the Advanced Architecture Group at IAAC and has previously worked at the CIRCE Foundation.

He has been involved in more than 20 publicly funded European projects (FP7, Horizon 2020, Horizon Europe), acting as project manager and coordinator in complex, multi-partner international consortia. His experience spans the full project lifecycle, from proposal development and strategic framing to implementation, coordination, and impact delivery.

His profile combines technical expertise in building energy modelling, simulation, and sustainability assessment with strategic roles in urban regeneration, nature-based solutions, participatory co-design, and digital innovation. He focuses on advancing participatory, data-informed urban design through Digital Twins, artificial intelligence, and gamification, supporting more resilient and inclusive urban environments.

Andrea has worked across public and private research ecosystems, developing strong skills in innovation management, stakeholder engagement, and interdisciplinary leadership. He has also contributed to capacity-building as a teacher, thesis advisor, and consultant, supporting training initiatives for public and private organisations.

He holds an MSc in Architectural Engineering from Politecnico di Milano and has completed academic programmes at the University of Mons, TU Wien, and Universidad Politécnica de Madrid. He is currently a PhD candidate at the University of Genoa, focusing on digital co-design tools for urban innovation and regeneration.

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ThermoChroma-smart Colorimetric Sensors as Cold Chain Indicators

Ahu Gümrah Dumanli-Parry

University of Manchester, United Kingdom

Dr Ahu Gümrah Dumanli-Parry is a University Lecturer (Associate Prof) in Bioinspired Soft Matter and the first recipient of the bp-ICAM Kathleen Lonsdale Research Fellowship. Dr Dumanli-Parry's research group (Bio-inspired Functional Materials-BioFuM- <https://www.biofumlab.com>) focuses on understanding the self-assembly process in nature as well as mimicking it to produce structurally ordered materials. With her research group, Dr Dumanli-Parry investigates the complex relationship between the intrinsic properties of the colloidal building blocks and the physical effects that modulate the self-assembly process to build active matter for sensing technologies and shape-morphing systems, as well as light-harvesting applications. She obtained her PhD from Sabanci University, Istanbul, and was a postdoctoral fellow at the University of Cambridge and Adolphe Merkle Institute in Switzerland. She was a teaching fellow in Advanced Characterisation of Materials at Imperial College London before taking up her role in Manchester.

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Reengineering Ancient Materials for Durable, Low-carbon Structures

Anwar Khitab

Mirpur University of Science & Technology, Pakistan

Professor Anwar Khitab is a researcher in sustainable and green construction materials, with a special focus on the analysis of ancient Indus Valley civilisation building techniques to derive eco-friendly solutions for modern use. His research promotes the integration of natural and carbon-negative materials into contemporary construction practices, aiming to reduce environmental impact and support long-term sustainability.

With over 100 research publications and two books authored, Professor Khitab has contributed significantly to the academic and practical advancement of sustainable engineering. He plays an active role in national engineering curriculum reforms and accreditation processes in alignment with international standards. As a keynote speaker and academic mentor, he advocates for sustainable construction and has supervised numerous postgraduate scholars. Beyond academia, he serves on advisory boards of several think tanks to promote research-driven, outcome-based education systems across Pakistan.

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Designing and Verifying Computational Models for Human-agent Teamwork in Future Cities

Alexandros Konios

Nottingham Trent University, United Kingdom

Dr Alexandros Konios is an Assistant Professor in Cyber Security at Nottingham Trent University. He obtained his PhD in Computer Science and MSc in Computer Security and Resilience from the University of Newcastle upon Tyne (UK). He also holds a BSc in Computer Science from the University of Piraeus (Greece). He is a Fellow of Higher Education Academy, and a member of the British Computer Society and other professional bodies. Alexandros' core research interests centre on the analysis of interactive and concurrent systems, including both the theoretical aspects of their semantics and the application of formal techniques to the modelling and verification of such systems. Further research interests include model checking and temporal logic, data analysis, analysis of network protocols, design, usability analysis, and prototyping of interactive interfaces, behavioural analysis of activities of daily living in smart environments, AI and machine learning, Internet of Things (IoT), and cryptography.

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Multifunctional Hybrid Hierarchical Composites

Patrick C. Lee

University of Toronto, Canada

Dr Patrick C. Lee is an Associate Professor in the Department of Mechanical and Industrial Engineering at the University of Toronto. He received his B.Sc. from the University of British Columbia and his M.Sc. and Ph.D. from the University of Toronto, followed by postdoctoral research at the University of Minnesota. He began his career at The Dow Chemical Company as a Research Scientist and later served as Assistant Professor at the University of Vermont before returning to Toronto in 2018. Dr Lee's research focuses on polymer processing and characterisation, particularly processing–structure–property relationships in hybrid nanocomposites and polymer foams. He has authored over 110 journal articles, 160 conference papers, six book chapters, and holds 32 patent applications. He has led numerous government-and industry-funded projects and received several honours, including the CSME G.H. Duggan Medal (2020), NSF CAREER Award (2018), and PPS Morand Lambla Award (2018).

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Building Health: Resilient Building Materials for Global Health and Sustainability

Elizabeth L. McCormick

University of North Carolina at Charlotte, United States of America

Dr Elizabeth L. McCormick is a licensed architect, educator, and researcher at the University of North Carolina Charlotte. Her work explores climatically responsive design strategies that promote health and

reduce reliance on mechanical conditioning. Her recent book, *Inside OUT: Human Health and the Air-Conditioning Era* (Routledge), examines the social and technological forces behind conditioned indoor environments and advocates for healthier, more connected alternatives. Liz leads an NSF-funded study abroad program in Tanzania focused on sustainable housing and public health. She is a WELL and LEED.

Accredited Professional, a Certified Passive House Consultant, and has over a decade of architectural practice experience spanning single-family passive houses to LEED-certified commercial projects. Liz holds a PhD in Design from NC State University, an MS in Building Technology from the Massachusetts Institute of Technology, and dual bachelor's degrees from the Rhode Island School of Design.

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AeroFeathers: Biomimetic Propellers with 3D-printed Flexible Fibres for Quieter Drones

Bhisham Sharma

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Dr Bhisham Sharma is an Associate Professor in the Department of Mechanical and Aerospace Engineering at Michigan Tech and Director of the Mechanics, Acoustics, and Dynamics Laboratory. Dr Sharma's research vision is driven by a commitment to making engineering structures safer, quieter, and more efficient. His innovative research program is built upon creating new knowledge and overcoming technological challenges at the intersection of structural mechanics, dynamics, and acoustics. His group conducts pioneering studies on novel engineered material systems—including acoustic metamaterials, phononic structures, architected lattice structures, and stochastic foams—leveraging these insights to develop practical, performance-tailored solutions for critical engineering challenges across multiple industries. Dr Sharma also serves as Chair of the Structural Acoustics Technical Committee for the Institute of Noise Control Engineering (INCE), USA, reflecting his national leadership and impactful contributions to the field.

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Part III

Artificial Intelligence and Augmented Intelligence

Digital Twins of the Retina: A Computational Framework for Personalised Microvascular Health Assessment

Wahbi K. El-Bouri

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Dr Wahbi K. El-Bouri works at the cutting-edge of Digital Twin development as a Senior Lecturer (Associate Professor) at the University of Liverpool. With over 12 years of experience, he heads up his research team, the Virtual Vascular Human research group, where he develops Digital Twin technology of the vascular system.

An engineer by training, he received both his MEng and DPhil in biomedical engineering from the University of Oxford before transitioning to the Department of Cardiovascular Medicine in Liverpool to begin the process of translating these Digital Twins to clinical environments. Digital Twins that have been developed include simulations of stroke and its treatment, simulations of ageing retinas, and the dynamics of the heart. He has been funded by the European Union, the Royal Society, and UK research councils to continue to develop these healthcare Digital Twins. He also works as an advisor to two med-tech startups.

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The Internet of Beings: The Nightmares and Dreams of Digitalising Human Bodies

Francesco Grillo

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Professor Francesco Grillo teaches the Master of Transformative Sustainability at Bocconi University (jointly held with Politecnico di Milano) and is a Visiting Fellow at the European University Institute. He is an Affiliate Professor at Scuola Superiore Sant'Anna of Pisa and teacher at the summer school of University of International Business Economics in Beijing. He has also been a Visiting Fellow at the Oxford Internet Institute and at St. Antony's College (University of Oxford).

Grillo is the Director of the think tank Vision, through which he leads two annual international conference; The future of Europe, and Global Governance of Climate Change– which acts as a problem solving platform gathering policy makers, academics, journalist and entrepreneurs from different countries and backgrounds. A third conference on "SKILLS FOR THE AI WORLD" is being planned for 2026 and the Middle East is considered a possible location.

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Augmenting Human Empathy: AI-assisted Solutions for Cross-cultural Healthcare Communication

Jeremy Howick

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Professor Howick is the Director of the Stoneygate Centre for Empathic Healthcare. Previously, he worked at the University of Oxford and co-founded the Oxford Empathy Programme. He holds degrees from Dartmouth College, the London School of Economics, and the University of Oxford. He is currently a member of the Sigma Xi honours society and recently founded the Global Network for Empathy in Healthcare.

With over 250 peer-reviewed publications and three books, including the Amazon #1 bestseller, he is a recognised authority. His work has earned awards from the British Medical Association, European Society for Person-Centred Care, and the University of Oxford. Professor Howick has appeared on the BBC, ITV, and NPR. He regularly speaks at high-profile events, delivering keynote lectures and workshops for corporations, NGOs, and academic audiences, inspiring change in healthcare practices worldwide. Outside of academia, he is an international rowing champion with a Commonwealth Games Silver Medal.

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Baseline Evaluation for Enhancing Human–Robot Collaboration (HRC) in Industry 5.0 Manufacturing

Erick Ramírez-Cedillo

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Dr Erick Ramírez-Cedillo, PhD in Engineering Sciences, is a leader in advanced manufacturing and transformative education at Tecnológico de Monterrey, Mexico. As Director of the Innovation and Transformation Engineering Program, he bridges academia and industry. Co-founder of CUSTOMED (3DMA) and 3D FACTORY MX, Erick drives sustainable 3D printing solutions for rural and emergency settings. Leading the FrED Factory Lab with Massachusetts Institute of Technology, he advances Industry 5.0 and advanced manufacturing education.

With 39 publications, his research spans topology optimisation, digital fabrication, rapid prototyping, and smart manufacturing. His global impact includes a 2024 WUN Seed Funding Grant with the University of Sheffield and a UC Davis project for disaster relief. His 2020 ventilator, recognised by Mexico's government, addressed pandemic needs. A Level 1 member of Mexico's National Research System, Erick shapes engineering education, empowering communities through technology.

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An Integrated AR-FEM-AI System for Real-time Structural Simulations and X-ray Visualisation of Heritage and Ageing Buildings

Iasef Md Rian

Xi'an Jiaotong-Liverpool University, China

Dr Iasef Md Rian is an architect, academic, and researcher specialising in computational design, parametric structures and optimisation, performance-based architecture, and fractal-informed design. He is an Associate Professor and Research Officer in the Department of Architecture and Design at XJTU since 2019. Previously, he was an Assistant Professor at the University of Sharjah, UAE, and earned his PhD from Politecnico di Torino, Italy, focusing on architectural computation and design systems.

He is actively involved in the Council of Architecture (India), IASS, ISGG, CAADRIA, and CAAD Futures and has conducted numerous design-build workshops, with student projects at Made Expo (Milan) and Dubai Design Week (Dubai). As a reviewer for top-tier journals, including Automation in Construction, Frontiers of Architectural Research, and Computer-Aided Design, Dr Rian contributes to advancing architectural scholarship. He is the founder of Rian Architects Designers in Malda, India, delivering residential and commercial designs.

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AI-driven XR Platform for Cognitive and Motor Empowerment in Young Students with Disabilities

Mario Covarrubias Rodriguez

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Professor Mario Covarrubias Rodriguez is an Associate Professor at the Department of Mechanical Engineering at Politecnico di Milano. He leads the Virtual Prototyping and Augmented Reality Lab at the Lecco Campus, where he focuses on the design and implementation of immersive technologies. His research explores the development of Extended Reality (XR) applications across diverse domains, including engineering education, special education, industrial training, physical rehabilitation, and cultural heritage preservation.

With a multidisciplinary approach, Professor Covarrubias combines technical innovation with user-centred design to create impactful XR solutions that enhance learning, accessibility, and user engagement. His work bridges academic research and real-world applications, contributing to advancements in digital transformation and inclusive technology.

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Revolutionising Filmmaking: Artificial Intelligence-driven Motion Control with the Cinema Camera Robot

Ishwar Singh

McMaster University, Canada

Dr Ishwar Singh served as an Adjunct Professor at McMaster University's School of Engineering Practice and Technology (SEPT) from 2011 until his retirement in 2023. Before that, he had a distinguished career in teaching and administration at Mohawk College and became the founding Associate Director of the BTech McMaster/Mohawk programs, chairing the process automation program. He played a key role in securing over \$2 million to establish an automation centre and support degree programs.

At McMaster, he led curriculum design for automation, automotive, and biotechnology B.Tech programs and contributed to the energy engineering technology degree completion program. He managed the SEPT Learning Factory for Industry 4.0 education and research. Additionally, he helped establish M.Eng. programs in Systems and Technology, served as faculty lead for undergraduate and graduate projects, and was principal investigator for Future Skills Canada-funded smart systems initiatives. He has authored and coauthored more than 100 publications/presentations.

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Part IV

Environmental Sustainability and Climate Action

AI-optimized Green Hydrogen Production from Biomass and Wastewater, and Integrated CO₂ Capture Pathways via Solar-Fenton and Natural Catalysts

Shabib Al Rashdi

National University of Science and Technology, Oman

Dr Shabib Sulaiman Al Rashdi is a Senior Lecturer and Head of the Waste-to-Energy Research Lab at the National University of Science and Technology, Oman. He holds a PhD in Chemical Engineering from the University of Kuala Lumpur. Dr Al Rashdi specialises in sustainable energy technologies, focusing on waste-to-energy conversion, green hydrogen production, and circular economy solutions aligned with Oman Vision 2040. Notably, he supervised a pioneering project that transforms palm waste into recyclable green aluminium, positioning Oman as a leader in zero-waste innovation. His research integrates renewable energy and advanced materials to address environmental challenges while promoting economic diversification.

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Integration of Deep Learning with CubeSat Technologies for Environmental Monitoring

Faris A. Almalki

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Professor Almalki is a Professor in Wireless Communications and Drones in the Computer Engineering Department at Taif University, a research fellow in the Department of Electronic and Computer Engineering at Brunel University of London, and a member of the IEEE Communication Society. He holds an MSc in Broadband and Mobile Communication Networks from Kent University and a PhD in Wireless Communication Networks from Brunel.

Professor Almalki is a reviewer for many respected journals and publishers, including Springer, IEEE, Elsevier, and Oxford University Press. His research interests include UAVs and Satellites and their wireless applications. Besides topics related to AI, IoMT, ML, he has also published over 100 research articles, 1 book, participated in 4 specialised books, and secured 3 research grants from the Deanship of Scientific Research. More notably, he has been a part of Stanford's global list of the top 2% of the world's scientists since 2022 and has received many best research awards at IEEE conferences.

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Simultaneous Selective Recovery of Lithium and Cobalt from Spent Lithium-ion Batteries Using Modified Bipolar Membrane Electrodialysis

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Dr Chosel P. Lawagon is the Director of the Centre of Green Nanotechnology Innovations for Environmental Solutions and the Institute of Emerging Technologies at the University of Mindanao. She co-founded the Nano Society of the Philippines, promoting the advancement of nanotechnology for sustainability. Dr Lawagon holds a Ph.D. in Chemical Engineering specialising in Materials Science and Engineering from Myongji University, South Korea, and completed postdoctoral fellowships at Chulalongkorn University (Thailand) and the University of Bayreuth (Germany). Her research focuses on nanotechnology-based solutions for sustainable energy, environmental remediation, and agriculture. In 2021, the German Federal Ministry of Education and Research recognised her with the Green Talents Award. She was also a national finalist for the 2024 ASEAN-US Science Prize for Women. As a Balik Scientist of the Philippines' Department of Science and Technology, Dr Lawagon leads interdisciplinary research, contributing patents and publications that address pressing environmental challenges in the Philippines and beyond.

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Advancing Circular Economy Through Ad-tech for Optimising Future Manufacturing

Chinaedu Maduagwu

Pratt Institute, United States of America

Professor Chinaedu (Chinos) is an Adjunct Professor at Pratt Institute's Creative Enterprise Leadership department, teaching in the Design Management and Arts and Cultural programs. He teaches various courses starting with Strategic Technology and Design Operations Management, where they explore sustainable ways of operations within organisations using strategic technology. He also teaches the Data Analytics part of the Financing companies and new ventures course and Finance for Nonprofit Managers, a course that lets creatives analyse objectives and performances of organisations and how best to promote sustainable practices. For over 5 years he served as a faculty fellow for Pratt Institute's collaboration with Made in NYC. As a facilitator and consultant, he worked with multiple local small business companies in the New York area to refine products and solutions that were value-centric to their customers. He also enjoys working with creatives and entrepreneurs to help them start and build businesses.

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Transesterification Optimization of Vhembe Macadamia Nuts Oil into Biodiesel Using Inorganic KOH Catalyst

Mamookho Elizabeth Makhatha

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Professor Makhatha is a registered professional natural scientist (Pr.Sci.Nat-), rated by the South African National Research Foundation (NRF), and a Full Professor at the Metallurgy Department, Faculty of Engineering and the Built Environment, University of Johannesburg (UJ). She is a Physical Chemist with a PhD in Polymer Science. Professor Makhatha is now Head of School (HoS): School of Mining, Metallurgy and Chemical Engineering at UJ.

Her research explores how biodegradable plastics can socially contribute to a more sustainable economy and influence consumer behaviour towards eco-friendly products. She prepares, characterises materials (polymers and alloys), and adjusts parameters for different applications that need smart/advanced and environmentally friendly materials for high performance and a sustainable future. She is an inspirational leader, passionate about knowledge dissemination, enjoys mentoring early career researchers, and enjoys planting the seed as well as lifting others up. Her current head of school position focuses on leading cross-disciplinary research initiatives.

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SEAWEED FOAM: A Bio-foam Material for a New Type of Home-compostable Packaging Products

Austėja Platūkytė

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Professor Austėja Platūkytė is a material-design researcher and educator working at the nexus of design, science, technology, and craft. A doctoral candidate in Design at Vilnius Academy of Arts, she lectures on Biomaterial Design while investigating hybrid living materials. As founder of SEAWEED FOAM, she developed an algae-based bio-foam for home-compostable packaging, advancing Lithuania's circular-economy agenda. A pioneer of material design and zero-waste philosophy in Lithuania, she established the Biomaterials Library—the Baltic region's first sustainable-materials collection—and leads the NGO Medžiagotyra to promote zero-waste principles. Her symbiomimicry-driven practice produces symbiotic objects showcased at Milan Design Week, Dutch Design Week, and MaterialDistrict Utrecht. She has presented research at Cumulus Detroit, IEEE ICTE, MaterialDistrict Utrecht, and the EUSBSR Forum. A multi-year Lithuanian Council for Culture scholarship recipient and Green Concept Award nominee, Platūkytė collaborates with academia and industry to accelerate sustainable innovation.

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Transforming Agricultural and Plant-based Byproducts into Compostable Hygiene Materials for a Circular Economy

Rashmi Prakash

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Professor Rashmi Prakash is a biomedical engineer and adjunct professor at the University of British Columbia (UBC), where she teaches in the Faculty of Applied Science in the School of Biomedical Engineering with a focus on sustainability, circular design, and equity in engineering. With a background in medical device research and materials innovation, her work explores the intersection of environmental health, women's health, and regenerative material systems. Rashmi's research includes developing compostable fibres from agricultural waste for use in hygiene, packaging, and hydroponics. Her research-informed innovation has received multiple national and international awards, including recognition from the MaRS Women in Cleantech Challenge and Octane Medical Innovation Forum. She is passionate about applying academic R&D to address global challenges.

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Using Hydrokinetic Energy for Green Hydrogen and Green Oxygen Production

Patrick H. Rice

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Dr Patrick H. Rice is the Chief Science and Research Officer at the College of the Florida Keys. He is the Principal Investigator for several National Science Foundation research and education projects focused on training the 21st-century science and technology workforce. He is also the Vice President and Senior Marine Biologist for SharkDefense Technologies, LLC., an R&D company exploring shark repellent technology, which has been featured on the Discovery Channel - Shark Week, Animal Planet, BBC, National Geographic, PBS, and NOVA. Dr Rice has 15 peer-reviewed scientific publications on a variety of marine science disciplines, including marine biology/biochemistry, fisheries science, and marine aquaculture. He has a Ph.D. in Marine Biology and Fisheries from the Rosenstiel School of Marine and Atmospheric Science, University of Miami, a Master's degree in Wildlife and Fisheries Science from Texas A&M University, and a Bachelor of Science degree in Aquatic Biology from the University of Texas– Austin. From 1994-1997, he was a United States Peace Corps Volunteer in South Pacific Islands of Fiji, providing protein to indigenous people through aquaculture education.

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Mixed Waste Plastics Derived Composites for Flood and Hurricane Protection

Dipa Ray

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Professor Dipa Ray is a leading academic in the field of polymer composites with over 24 years of experience. She has published 100 papers in peer-reviewed journals, 14 book chapters, edited a peer-reviewed journal, and holds one patent.

She has over 7000 citations, an H-index of 43, and an i-10 index of 93. She is one of the recipients of Top 50 Women in Engineering awards in the UK in 2021. She is a Fellow of IOM3 (FIMMM) and the Royal Society of Chemistry (FRSC).

Dipa Ray is a member of the IOM3 Sustainability Group, Board Member of the Natural Materials Association (NMA, IOM3), and serves in the editorial boards of the *Plastics, Rubber and Composites Journal* and the *Journal of Reinforced Plastics and Composites*. She received the Young Scientist Award from the Department of Science and Technology (DST) and the Career Award for Young Teachers from All India Council for Technical Education (AICTE) from the Government of India in 2008.

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Leveraging AI-coupled Digital Twin Ecosystems for all Sustainable Development Goals in the Built Environment

Noha Saleeb

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Dr Saleeb is an Associate Professor in Creative Digital Technologies and Construction, and Programme Leader for MSc Building Information Modelling Management programmes, providing consultation for industry projects/organisations in sustainable design, construction, digital transformation, BIM, Digital Twins, AI, and onsite project management.

She is Director and Business Development Lead-BIMAfrica, Editor-in-Chief of the Smart Infrastructure and Construction Journal, and advisory board member of several Professional Body steering committees e.g., London Digital Twin Research Centre, BIM4Heritage, CIOB Innovation SIG. Dr Saleeb has also delivered many keynote/plenary speeches globally and has >100 journal/conference/industry/book chapter publications in sustainable construction technologies. She is co-author of the Chartered Institute of Building (CIOB)-UK 'Artificial Intelligence Playbook', and 'Digital Twins Position Paper for AECO' by the National Institute of Building Sciences, USA. She achieved multiple national and international awards, most recently Green Gown UK/Ireland Sustainability Champion Award 2024.

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Part V

Socio-economic Empowerment and Innovation

Tools2Thrive: A Scalable Tool Rental Model for Smallholder Farmers in Kenya

John Gershenson

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Dr John Gershenson is the Director of the Humanitarian Engineering and Social Entrepreneurship Program (HESE) at Penn State University. He is also CEO of Kijenzi, a Kenyan company using distributed digital manufacturing to democratise local manufacturing in Sub-Saharan Africa. Dr Gershenson has a B.A. in Physics from Cornell University, an M.S. in Mechanical Engineering from the Ohio State University, and a PhD in Mechanical Engineering from the University of Idaho.

Dr Gershenson's research in product/process architecture, lean/sustainable design and manufacturing, and appropriate technologies have yielded 100+ peer-reviewed publications and commensurate research funding. He has strong experience in developing technologies and their applications in Kenya, having led another company prior and helped several others launch, including those through Penn State's HESE program, which has launched six social impact companies in the last 4 years.

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The Second Act of Life: Unveiling Podcast Narratives of Purpose and Reinvention Among Midlife Entrepreneurs

Katherina Kuschel

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Dr Katherina Kuschel, Ph.D., is a researcher and Director of Research Funding at Centrum Graduate Business School and the Pontificia Universidad Católica del Perú. She also teaches Technology Entrepreneurship and Research in Entrepreneurship at the Karlsruhe Institute of Technology (KIT) in Germany. Her work focuses on entrepreneurship, entrepreneurial ecosystems, and gender dynamics, with particular emphasis on women in technology ventures and women in STEM in Latin America.

Dr Kuschel has led and coordinated multiple international research projects. These include an applied research project funded by the ASPEN Network of Development Entrepreneurs and the International Development Research Centre (IDRC), aimed at developing entrepreneurial solutions in clean energy, as well as a project funded by the German Academic Exchange Service (DAAD) and the 2021 KIT International Excellence Fellowship on university soft-landing programs for foreign startups. Her research combines perspectives from entrepreneurship, business management, social psychology, and regional economic development.

She has co-edited a Routledge volume on wellbeing and women entrepreneurs and has published extensively in leading academic journals in the fields of entrepreneurship and management. Her work contributes both to theoretical advancement and to the design of evidence-based policies and programs supporting inclusive entrepreneurial ecosystems.

In 2025, Dr Kuschel was awarded the VIWA Outstanding Researcher on Women's Entrepreneurship, recognising her interdisciplinary contributions and sustained impact on research and practice in entrepreneurship.

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The Re-habitualisation of Boycotts: From Disruption to Everyday Life

Wang-Shu Liu

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Ms Wang-Shu Liu is a postgraduate researcher based in the Sociology Department and the Sustainable Consumption Institute at the University of Manchester.

She began her academic journey at the University of Nottingham Ningbo China, where she earned a bachelor's degree in finance and management. During this time, she developed an initial interest in sustainability, particularly in the areas of sustainable finance, corporate resistance, and business sustainability. This led her to pursue a master's degree in Sociology at the University of Manchester, where she shifted her focus to the consumer's perspective, exploring sustainability through the lens of everyday life practices.

Her research interests lie broadly in the fields of sustainable consumption, everyday life, and individual resistance, with a particular emphasis on how ordinary consumers engage with and contribute to social and environmental change.

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Eco-efficient Valorisation of Spent Yeast: Protein and β -Glucan Fractions Recovery for Health-promoting Applications

Joelle Nader

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Dr Joelle Nader is a distinguished scholar and innovator at the forefront of industrial process engineering, sustainable manufacturing, and technological advancement. With over a decade of experience spanning academia, research, and industry collaboration, her work bridges emerging technologies, operations management, and circular economy practices to advance human and environmental well-being. She has authored peer-reviewed articles, secured patents, and led globally recognised, award-winning, innovative projects. At the Lebanese American University, she directs cross-disciplinary initiatives, integrating business and engineering perspectives to foster agile, sustainable solutions for complex industrial systems. She frequently presents at international conferences and collaborates with industry partners on process optimisation and sustainable product development. Her current work explores AI-integrated production systems, smart automation, and advanced value chains, with a particular focus on food, pharmaceutical, and chemical industries. Dr Nader serves on advisory boards and champions science-led development across the MENA region.

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Innovative Invasive Cactus Management: A Sustainable Solution for Kenya's Rangelands

Willis Owino

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Professor Willis is a distinguished scholar in Food Systems research, with over 20 years of combined academic and industry expertise. His work explores the intersection of Food and Nutritional Sciences and Animal Sciences, aiming to enhance sustainable food production while minimising environmental impact—particularly for pastoralist farmers in Kenya's semi-arid regions. His research includes efficient feed systems and long-term food security solutions.

A prolific researcher, he has secured funding for projects from leading global donors, including USAID, World Bank (KAPAP, KCSAP), RUFORUM, BMBF, BLE, DFG (Germany), Rockefeller Foundation, BioInnovate Africa (SIDA-funded), JSPS Japan, GCRF-UK, DANIDA, ERASMUS+, Kenya-France PHC Partnership, and dryGrow Foundation (Italy). He has supervised 37 Master's and 11 PhD graduates and authored 125 peer-reviewed articles, five book chapters with internationally recognised publishers, and

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Next-generation Community Hubs for Socio-economic Empowerment: A Pilot Human-centred Framework and Participatory Digital Twin Approach

Alejandro Lozano Robledo

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Professor Alejandro Lozano Robledo is Director of the Future Mobility Design Lab at the University of Cincinnati, where he leads cutting-edge research at the intersection of human-centred design, technology, and social innovation. With over a decade of experience across academia and industry, Alejandro has collaborated with global organisations including NASA, the U.S. Department of Transportation, Boeing, Hyundai, and MIT.

His work focuses on creating transformative solutions that address access to mobility, healthcare, education, and employment, using technologies such as Digital Twins, AR/VR, and UX/UI. Alejandro has secured significant funding for high community impact research and innovation, earned eight U.S. patents, and mentored more than 400 students, integrating industry partnerships into the academic sphere. His projects span the U.S., Latin America, Europe, Africa, and Asia, advancing global innovation through multi-sectoral collaborations.

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Weaving Economic Dignity: A Framework for Re-engineering Value with Botswana's Heritage Basketry Artisans

Keiphe Setlhatlhanyo

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Dr Keiphe Nani Setlhatlhanyo is a Lecturer in Design at the University of Botswana, specialising in cross-disciplinary design research. Her work integrates design and craft heritage with community development, focusing on culturally significant products. She holds a PhD in Design (University of Leeds), where her research examined Botswana's culturally significant motifs, an MA in Product Design Innovation Management (Nottingham Trent University, Commonwealth Scholarship), and a Bachelor of Design (University of Botswana).

Dr Setlhatlhanyo actively collaborates with artisan communities, such as basket weavers, to improve designs and co-create solutions that enhance livelihoods. Involved in several funded research projects, she brings experience in product development, intellectual property, and project management. She has authored numerous peer-reviewed journal articles and book chapters.

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Part VI

Open

Beyond the Object: Product and Furniture Design as Critical and Social Practice

Jason Cleverly

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Dr Jason Cleverly is a designer, artist, and academic whose work explores how interaction, participation, and interpretation can be enriched through socially engaged design. His practice involves creating interactive installations for public and cultural spaces, using a variety of materials and embedded technologies to support inclusive and meaningful experiences. He often works collaboratively, using co-creative methods that value shared authorship and active participation.

Jason's work has been shown in a range of national and international exhibitions, highlighting the cross-disciplinary nature of his practice. His research has been published across fields including design, museology, and creative knowledge, contributing to wider discussions around affordances and the role of the artist-designer in socially responsive contexts. He is the Course Leader for BA Product and Furniture Design at the University of the Arts London, where his teaching is grounded in inclusive design principles and informed by ongoing research and critical practice.

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Prototype of the Sustainable Tourism Promotion Model Based on Technology 4.0 in Post-conflict Regions. Case Study: La Palma and Yacopí (Colombia)

Melva Inés Gómez-Caicedo

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Professor Melva Innes Gómez Caicedo is currently affiliated with the Los Libertadores University Foundation (Bogotá, Colombia) as an Associate Professor and consultant on research and organisational development for various institutions and companies. She is a Senior Researcher (ISr) according to the classification of the Ministry of Science, Technology and Innovation (Minciencias) and Leader of the Research Group on Economic, Administrative, and Accounting Reflection (REAC), which underscores her leadership in scientific production and her impact on the academic community. Her publications cover topics such as the impact of digital technologies on business competitiveness, the analysis of public transportation behavior in Latin America, sustainability, and business analytics approaches applied to artificial intelligence, contributing to the strengthening of institutional, academic, and research capacity. She is a PhD candidate in Public Management and Social Policy, with a Master's degree in General Management and a Bachelor's degree in Economics. She has led public and private projects related to tourism and agribusiness, combining her experience in applied research, high-impact academic production, and leadership in technological innovation and sustainable development projects. Her

career reflects a commitment to generating useful and replicable knowledge, geared towards solving real-world problems in local and global contexts.

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Study of Intergenerational Craft and Revival in Himalayan Communities

Gauri Karanjkar

MIT ADT University, India

Ms Gauri Karanjkar is an Assistant Professor at the MIT Institute of Design, ADT University in Pune. With a background in fashion design, she holds a B.Des from NIFT Mumbai and is currently pursuing a PhD in Art and Design. Her research explores the revival and sustainable growth of India's handloom and handicraft traditions, engaging with questions of cultural continuity, identity, and innovation within indigenous practices.

She is committed to bridging academic inquiry with grassroots narratives, aiming to foreground the voices and techniques of traditional artisans in contemporary discourse.

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Agentic AI for Sustainable Behaviour: A Coaching Framework and Workflow

Dario Krpan

London School of Economics and Political Science (LSE), United Kingdom

Dr Dario Krpan is an Associate Professor of Behavioural Science at LSE, where he is also affiliated with the LSE's Data Science Institute. He received his MPhil and PhD in psychology from the University of Cambridge. Doctor Krpan has strong expertise in a wide range of research methods, from experimental and quasi-experimental designs to predictive approaches such as machine learning. His research has been published in leading academic journals, including *Nature Human Behaviour*, *The Lancet Planetary Health*, and *Artificial Intelligence Review*.

Dario's primary research focus is on transformative behavioural change—specifically, how individuals can shift their lifestyles in response to major global challenges, such as climate change, and the societal impacts of technological transformation, including increased automation and the rise of artificial intelligence. Within this context, he also explores how AI and advanced technologies can be used to better understand and influence human behaviour.

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Eco-friendly and Biocompatible Materials for Noise Reduction in Healthcare Environments

Jesús Carbajo San Martín
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Dr Jesús Carbajo is an Associate Professor at the Department of Physics, Systems Engineering and Signal Theory of the University of Alicante in Spain, where he received his international PhD with cum Laude and Extraordinary Doctorate Award. His research activity is focused on the modelling, design, and characterisation of acoustic materials for noise-reduction applications. Over the last few years, he has participated as a Principal Investigator and researcher on multiple public and private projects.

He has also performed research stays in prestigious world-renowned institutions such as the Massachusetts Institute of Technology and Purdue University in the USA, the Institute of Sound and Vibration in the UK, and the Universidade de Coimbra in Portugal.

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Design for Change: Transformational Cross-cultural and Transdisciplinary Learning Experiences to Solve Global Healthcare Sustainability Challenges

Lisa Scharoun
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Professor Scharoun is a multi-award-winning teacher, researcher, and designer with expertise in visual communications with a focus on design for health and cross-cultural design. Lisa has received a number of national and international awards for her teaching and research, including the QS Wharton Re-imagine Education Global Award, the ACEEU Triple-E Award, and the Australian Awards for University Teaching. She has won many national and international prizes for her design work, including a top 10 finalist in the Bill and Melinda Gates 'Records for Life' competition.

She was also awarded the 'Ease of Adding Information' prize for a design solution created to assist mothers in developing countries to remember to vaccinate their children; a Good Design Australia Award for Social Design for her work on the Healthcare Excellence Accelerator (HEAL) project at QUT, and an A'Design Award for Strategic Design for her work on healthcare improvement in prisons.

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Part VII

Speculative

GameShift Futures: Reimagining the University Through Speculative Play

Livia Alexander

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Professor Livia Alexander is a Brooklyn-based curator, writer, and Associate Professor of Visual Studies at Montclair State University. Her work focuses on global perspectives in modern and contemporary visual art, cinema, and expanded media, with an emphasis on Southwest Asia and North Africa. She has curated exhibitions and programs at leading institutions, including MoMA, Tate Modern, and the Brooklyn Museum.

She currently curates the digital screens program at Moynihan Train Hall in New York and previously served as Chief Curator of the Film Criticism Forum launched by the Saudi Film Commission. She is the co-founder of ArteEast, a nonprofit supporting artist from the Middle East and North Africa. A Higher Education Academic Leadership Fellow and Visiting Scholar at the NYU Game Center, Alexander is developing an immersive game-based platform to rethink learning models in higher education.

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Prototypes of Personalisation and Customisation for Next-generation Medicines

Subham Banerjee

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Dr Subham Banerjee is an Associate Professor in the Department of Pharmaceutics, NIPER, Guwahati, India. He is also a Visiting Staff Faculty of the University of Texas (UT) at Austin, US. Due to his seminal contributions to the field of Pharmaceutical Additive Manufacturing (PAM), he featured in 'World Top 2% Scientist List' prepared by Stanford University, US.

Dr Banerjee has published more than 110+ peer-reviewed research articles with over 3000+ citations and an H-index of 31. He has 9 granted patents and has transferred 1 healthcare technology to the industry. Dr Banerjee has received several National and International competitive prestigious awards. He has successfully completed several Extramural Research (EMR) project grants funded by premium funding bodies in India. He has delivered 50+ invited talks at prestigious institutions worldwide. His pioneering work continues to shape the future of pharmaceutical 3D/4D printing, next-generation personalised medicine, and new materials exclusively for PAM.

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The Role of Design in Challenging Exclusionary Urban Spaces

Adrienne Bennie

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Dr Adrienne Bennie is a London-based designer, researcher, and educator whose work sits at the intersection of spatial justice, socially engaged practice, and critical design pedagogy. She is currently Senior Lecturer in Product and Furniture Design at University of the Arts London, where she leads Critical Practice within the BA (Hons) Product and Furniture Design programme.

Her research examines how design participates in systems of exclusion, with particular attention to hostile architecture and the material regulation of public space. Through interrogative, practice-led methods, their work explores how everyday urban objects shape access, behaviour, and belonging. Recent projects focus on critical making, digital fabrication, and pedagogical interventions as tools for exposing spatial inequality and generating public and professional debate.

Alongside their academic role, Adrienne contributes to cross-sector conversations across design education, policy, and civic contexts. Their work foregrounds ethical responsibility in the public realm and advances critical approaches to design that foreground ethical responsibility in the public realm.

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Gastroludology: Gastronomy Meets Ludology

Yoram Chisik

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Dr Yoram Chisik is a Senior Lecturer and Co-Program Lead of the MSc in User Experience (UX) Engineering at Goldsmiths, University of London. His work explores the ways in which people interact with technology and the means through which the physical and the digital can be woven together to create novel interactions and experiences. Yoram has over 30 years of experience in research, development, teaching, and consulting in both industry and academia across continents (Europe, Asia, and North America). Yoram has served as chair and editor for several academic conferences and journals in human-computer interaction and design. His work has been published in high-impact conferences, journals, and edited volumes. His most recent works explore the notion of playing with food, examining people's perceptions of electricity, investigating how people present themselves on social networks, and studying the adaptation of participatory design to working with children.

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From Walls to Worlds: Co-creating Heritage Narratives with AR Murals

Agnes Michalczyk

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Ms Agnes Michalczyk is a visual artist based in Cairo. She graduated from the Academy of Visual Arts in Leipzig, Germany in 2011. She teaches at the Faculty of Applied Sciences and Arts at the German University in Cairo and leads various art workshops. Her artwork explores the urban landscape of Cairo through a feminist lens. She employs a variety of media, contributing to numerous art projects both locally and internationally. Her recent endeavours explore immersive technologies in relation to urban heritage.

Michalczyk is pursuing her PhD research in the UNA Europa joint PhD program at Freie Universität Berlin and the University of Edinburgh.

Michalczyk is passionate about teaching art and design and introducing diverse artistic tools and techniques to her students. She aims to foster an open and inclusive space that encourages personal inquiry, experimentation, and creativity, meeting her students wherever they may be on their artistic journeys.

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Design for Emergency and Disaster Scenarios: Concepts that Serve Humanity

Owain Pedgley

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Professor Owain Pedgley is Professor of Industrial Design at Middle East Technical University (METU), Turkey. He received B.Sc. and Ph.D. degrees in industrial design from Loughborough University, UK in 1995 and 1999. His expertise and research centres on interfaces, interactions, and experiences, with special crossovers into materials and design, and musical instrument innovation. Owain is a long-time practitioner, supervisor, and advocate of research through design as an approach to academic research.

He is co-editor of the book series 'Materials Experience' (Elsevier, 2021; 2014) and was a founding member of the Industrial Design B.Eng. program at the University of Liverpool (2014-2017). Currently, he serves as Co-Director of UTEST Product Usability Test Unit at METU, as well as Design Director of Sonixpace, a new start-up developing wireless audio recording solutions. Prior to his academic career, Owain worked as a designer of sports equipment and musical instruments.

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Back to the Future: Exploring the Untapped Potential of Freehand Weaving

Tania Ursomarzo

American University of Sharjah, United Arab Emirates

Professor Tania Ursomarzo is an Assistant Professor of Architecture and Interior Design at the American University of Sharjah. She is an architect, multidisciplinary designer, and material fabrication specialist who works across various scales of design, from the urban to the artefact.

Professor Tania's interdisciplinary approach to creative practice centres on the design and fabrication of space and objects that explore the hybridisation of analogue and digital technologies using environmentally sensitive material processes. Tania holds degrees from the University of Toronto (BArch) and Cranbrook Academy of Art (MArch).

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