



ABSTRACTS, TALKING POINTS & BIOGRAPHIES

Kamna Balhara, MD, Health Humanities at Hopkins EM, Johns Hopkins University, Baltimore (USA)



Biography

Dr. Kamna Balhara is an associate professor of emergency medicine (EM) at the Johns Hopkins University School of Medicine (Baltimore, USA) and holds a dual appointment in Medicine, Science, and the Humanities at the Zanvyl Krieger School of Arts and Sciences. She earned a master's degree in French Cultural Studies from Columbia University before completing medical school and residency at Johns Hopkins, where she served as chief resident. She later held residency program leadership roles at the University of Texas San Antonio and at Johns Hopkins. An innovator in the health humanities, Dr. Balhara has led humanities curricula for medical students, residents, faculty, undergraduates, and interprofessional learners. She is the director of the Program in Arts, Humanities, & Health at Johns Hopkins. She also co-leads the Health Humanities at Hopkins EM initiative, which brings humanities-based programming to institutional, community, and national audiences, and she directs the Health Humanities Fellowship in Emergency Medicine. Her scholarship spans graduate medical education, the humanities, and

social determinants of health, and she creates tools and resources for educators seeking to use the humanities to advance equity in health care and health professions education. Dr. Balhara has presented internationally on health equity and the humanities in medicine and was selected as a Harvard Macy Institute Art Museum-Based Health Professions Education Fellow. Her work has received support from the Association of American Medical Colleges, the Josiah Macy Foundation, the National Endowment for the Humanities, and the Emergency Medicine Foundation. She serves on the steering committee for the Health Humanities Consortium.



Janina Beilner, Prof., Senior Vice President Siemens AG, Munich (Germany)



Biography:

Prof. Dr. Janina Beilner is a medical doctor (MD, PhD) with two decades of experience in the healthcare space. She received her training from prestigious institutions including the Medical University Hospital Hannover, Harvard affiliated Massachusetts General Hospital (MGH) Boston, Stanford Clinics, and the National University Hospital (NUH) Singapore. She is appointed honorary professor at Friedrich-Alexander University Erlangen Nuremberg, at the Technical Faculty under the chair of Artificial Intelligence in Biomedical Engineering / Machine Learning and Data Analytics. She offers seminars on “Leading by Learning” and “AI and Digitalization in Healthcare,” and is intensively looking into quantum computing and its potential applications in healthcare. Janina is Senior Vice President of Healthcare at Siemens, having assumed the role in October 2023. In her position Janina is

responsible for defining the Healthcare Vertical Market strategy and shaping Siemens’ healthcare business. Co-creating value propositions based on Siemens’ technology ecosystem with a strong focus on digital transformation and identifying market opportunities and gaps to develop strategic growth paths. Prior to her current role, she worked in the pharmaceutical sector at Johnson & Johnson and joined Siemens Healthineers in 2008, where she held various positions including leading clinical research in North East Asia from China. As the Senior Vice President of Education and Workforce Solutions within Customer Service at Siemens Healthineers, she led a rapidly expanding and dynamic business unit. Her focus included establishing new digital businesses, utilizing AI-powered platforms and digital ecosystems to accelerate and scale business growth. In her personal time, Janina is a committed supporter of the D.R.O.P.S Foundation, a non-profit organization dedicated to health and health education in emerging countries. She also runs her own consulting business.

Abstract:

In the AI era, assessment must move from testing whether students can produce answers to testing whether they can use AI responsibly to make sound clinical decisions.

- **From knowledge recall to judgment and accountability.** Generative AI can already answer many exam questions at a level comparable to learners, which means assessments should increasingly focus on clinical reasoning, interpretation, decision making, and taking responsibility for patient-related outcomes rather than pure recall.





- **Assessing “AI literacy” as a clinical competency.** Future healthcare professionals need to know when to trust AI, when to challenge it, and how to recognize bias, hallucinations, and uncertainty. The ability to critically evaluate AI outputs should become an explicit learning outcome and assessment criterion.
- **Authentic assessments instead of AI-proof assessments.** Rather than trying to prevent AI use, universities should design assessments that mirror real clinical practice, where clinicians will work with AI tools. Students could be assessed on how effectively they use AI to solve cases, justify decisions, and communicate recommendations.
- **Simulation-based assessment enhanced by AI.** Building on the session contributions on simulation and video debriefing, AI can help create realistic patient scenarios, provide individualized feedback, and evaluate performance longitudinally. From a Siemens Healthineers perspective, this connects directly to digital and technology-enabled healthcare environments.
- **Continuous competency assessment.** AI enables assessment based on multiple observations across learning activities rather than a few high-stakes examinations. This creates opportunities to track development of clinical, communication, and professional competencies over time
- **The industry's perspective on future workforce needs.** Healthcare employers increasingly seek graduates who can collaborate with AI systems, interpret algorithm-supported results, communicate limitations, and maintain a patient-centered approach. Assessment methods should therefore align with the realities of future clinical workplaces



Stefan Benz, MD, Head Colorectal Surgery, University Hospital Tübingen (Germany)



Biography

Prof. Dr. med. Stefan Rolf Benz is a German general and visceral surgeon and surgical oncologist, internationally recognized as a pioneer of complete mesocolic excision (CME) for colorectal cancer. After leading general, visceral, thoracic, and pediatric surgery as at Klinikum Sindelfingen-Böblingen (2014–2026), he joined the University Hospital Tübingen's Department of General, Visceral and Transplant Surgery to head colorectal surgery. He is also CEO and founder of Simultare, an AI startup developing intraoperative anatomy-recognition and surgical-simulation technology, and co-founded and chaired the Association of German Colorectal Cancer Centres (addz).

Abstract

Health professions education is changing because of increasing procedural complexity, reduced working hours, limited clinical exposure. Artificial intelligence may alleviate this development through individualized learning, simulation, procedural guidance, and feedback, particularly when opportunities for direct patient-based training are limited. However, AI cannot replace clinical supervision or professional responsibility, and its use requires careful consideration of the reliability of its feedback and the competencies needed to work with it safely. This talk examines the potential role of AI as a mentor, teaching partner, simulator, and coach in hospital-based education, while considering which aspects of clinical training should remain based on human judgment, communication, and accountability.



Alessandro Bertani, MD, Thoracic Surgery and Lung Transplant Unit at IRCCS-ISMETT, University of Pittsburgh Medical Center Italy, Palermo (Italy)



Biography

Dr. Bertani, born April 23rd, 1973, is a graduate of the University of Pavia School of Medicine in 1998. After completing his general surgery residency at the Department of General Surgery, Liver and Lung Transplantation in Bergamo (Italy), he trained as a clinical fellow in cardiothoracic transplant surgery (2002-2003) and Minimally Invasive Thoracic Surgery (2003-2004) at the University of Pittsburgh (USA). He also trained as a clinical fellow in Cardiothoracic Surgery (2005-2006) at ISMETT-UPMC Italy, Palermo. In 2006 he completed a PhD in Experimental Surgery and Microsurgery at the University of Pavia School of Medicine. He holds national boards in general surgery and thoracic surgery.

After joining ISMETT as an attending thoracic surgeon in 2007, Dr. Bertani was appointed in 2011 as the Chief of Thoracic Surgery and Lung Transplantation. In March 2023 he founded and was appointed as the Chair of the Chest Center at ISMETT, a multidisciplinary Department focusing on lung, mediastinal and esophageal disease.

He performed more than 3000 general and thoracic surgery operations, including oncologic and benign, open and minimally invasive pulmonary, mediastinal and esophageal cases. He performed more than 1000 airway and gastrointestinal endoscopic procedures, including endoscopic ultrasound and interventional endoscopy. He trained many junior surgeons to perform independently thoracic surgery and lung transplant procedures.

Since 2005, Dr. Bertani contributed to the development of the lung transplant program at ISMETT that grew as one of Italy's busiest programs performing approximately 15 cases/year, including cadaveric, lobar, adult, pediatric transplants and extra-corporeal supports. In 2006 Dr. Bertani performed the first case of lung transplantation in the world in an HIV-positive patient.

The clinical activity of Dr. Bertani also includes an active contribution to the development of lung transplant and thoracic surgery international activities for UPMC.

He is a member of several international medical societies including the Society of Thoracic Surgeons (STS), the European Society of Thoracic Surgeons (ESTS), the International Society for Heart and Lung Transplantation (ISHLT) and the European Society for Cardio-Thoracic Surgery (EACTS) and serves for several national scientific boards and committees. As a visiting professor, he joined different lung transplant and thoracic surgery centers worldwide. Dr. Bertani also sits on the board of directors of the European Society of Thoracic Surgeons (ESTS) and of the Italian VATS Group. Since June 2026, he is the Secretary General of the ESTS.

Dr. Bertani acts as principal investigators for several research projects in the field of thoracic surgery and





transplantation, both clinical and pre-clinical, which are mostly focused on lung cancer, minimally invasive surgery, organ preservation and clinical lung transplantation. His scopus H-index is 25. He also is the Director of the ISMETT pre-clinical research laboratories in Palermo (ISPEMI), a preclinical facility dedicated to research and education in the animal model.

From an academic stand point, Dr Bertani is a Clinical Assistant Professor of Surgery at the University of Pittsburgh since 2006. In 2025 he was recruited by the Kore Univesity in Enna (Italy) as an Associate Professor of Thoracic Surgery.

Abstract

Hospitals have traditionally represented the core environment for medical and surgical education, providing a unique setting in which theoretical knowledge, technical skills, professional behavior, and clinical decision-making converge. However, profound changes in healthcare delivery, technology, regulation, and the expectations of new generations of learners are challenging traditional models of hospital-based training.

Contemporary teaching hospitals can offer a broad spectrum of educational opportunities, ranging from lectures and dry simulation to wet laboratories, animal models, and supervised clinical training. The challenge is no longer simply to provide these resources, but to integrate them into structured curricula that ensure progressive acquisition of competencies while maintaining patient safety and educational effectiveness. In this context, proficiency-based progression (PBP) represents an important shift from training based primarily on time and exposure toward advancement based on objectively demonstrated performance.

At the same time, increasing attention to medical liability, credentialing, and standardization raises the question of how competencies should be defined, assessed, and recognized across institutions and national boundaries. In Europe, this discussion naturally extends to whether a more unified medical and surgical credentialing system could facilitate common standards while respecting differences among healthcare and educational systems. The changing profile of students, residents, and fellows adds another dimension. Today's learners have immediate access to an unprecedented volume of educational content through digital platforms, peer-to-peer networks, and social media. Consequently, hospitals and educators must reconsider not only what is taught, but also how, where, and by whom learning takes place. Scientific medical societies may have an increasingly important role in validating educational content, defining standards, supporting faculty development, and connecting institutional training with broader professional communities.

Emerging technologies—including artificial intelligence, virtual reality, and augmented reality—are likely to further transform medical and surgical education. Rather than simply replacing traditional teaching, these technologies may provide opportunities to personalize learning, improve simulation, assess performance, and expand access to expertise. Their rapid development also prompts a fundamental question: which components of medical education can be effectively delivered through technology, and which continue to require direct human interaction, mentorship, and face-to-face clinical training?

The hospital of the future should therefore be viewed not only as a site of healthcare delivery, but as an evolving educational ecosystem. Developing effective models will require integration of technology, competency-based



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training, faculty development, institutional governance, and collaboration with scientific societies. Ultimately, the challenge is to preserve the unique value of learning from patients and experienced clinicians while adapting medical education to the expectations, tools, and professional environment of a new generation.



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Wolfgang Brück, CEO University Medical Center Göttingen; Dean, Medical Faculty, University of Göttingen (Germany)



Biography:

Wolfgang Brück is Chief Executive Officer of the University Medical Center Göttingen, Germany and Dean of the Medical Faculty of the Georg-August-University Göttingen, Germany since 2019. The University Medical Center comprises the University hospital and the medical faculty in a so-called “integration model”. Wolfgang Brück has been Professor of Neuropathology and Director of the Department of Neuropathology at the University Medical Center Göttingen, Germany, from 2002 to 2019. He received his medical degree from Johannes Gutenberg University Mainz, Germany, and attained his habilitation and *venia legendi* for neuropathology from Georg-August University Göttingen. During his career, he held a professorship at the Charité, University Medicine Berlin, Germany, before he became head of department in Göttingen. Wolfgang Brück’s research focussed on the immunopathology of multiple sclerosis (MS) including major international collaborations with groups in Vienna, Austria, at

the Mayo Clinic, Rochester, USA and at UCSF, USA.



Miguel Castelo-Branco Sousa, Dean of the Faculty of Health Sciences, University of Beira Interior (Portugal)



Biography:

Miguel Castelo-Branco Sousa is a medical doctor, Ph.D. in Medicine, full professor at the University of Beira Interior, Senior doctor of the Cova da Beira Academic Health Local Unit, Specialist in Internal Medicine, Intensive Care Medicine and Medical Emergency, has exercised clinical care functions as a specialist since 1994. As CEO and in other roles, he has also performed hospital management functions at Cova da Beira Academic Hospital Centre, now the Local Health Care Unity of Cova da Beira. He has been a member of several scientific and pedagogical bodies and was President of the Faculty of Health Sciences (FCS) from 2009 to 2011 and again since November 2017. He is a clinical professor and the scientific director of the Laboratory of Competences

at FCS. He teaches Medicine, Patient Safety, and Telemedicine. He is a researcher in teaching applied to health sciences, hypertension, cerebrovascular disease, patient safety, telemedicine, and telemonitoring. He has more than sixty published articles and book chapters and has participated in numerous workshops, round tables, communications, and clinical trials. He has been the scientific supervisor of Ph.D. and Master's Degree students and has integrated several Scientific Committees. He won the Santander UBI Clinical Research in Health Sciences Award in 2013. European Expert for Hypertension by the European Society of Hypertension, is also a member of several national, European, and international scientific societies. Member of the Portuguese National Academy of Medicine.

Abstract:

The Integrated Master in Medicine at the University of Beira Interior is a six year medical program designed to prepare future physicians with a strong scientific foundation, early clinical exposure, and a deep understanding of the human dimensions of illness. The curriculum emphasises communication, empathy, ethical reasoning, teamwork, social responsibility, and lifelong learning. Students are trained to integrate biomedical knowledge with psychological, social, and ethical perspectives, applying evidence based medicine while engaging with patients and communities.



Maurizio Cecconi, Vice Scientific Director for Clinical Research, Humanitas Research Hospital, and Coordinator of PhD PRIME, Humanitas University (Italy)



Biography:

Maurizio Cecconi is an anesthesiologist, intensive care specialist, and Chair of Anesthesia and Intensive Care Units at Humanitas Research Hospital in Milan, Italy. He is the Vice Scientific Director for Clinical Research and the Coordinator of the PhD PRIME (Personalized Care and innovation in Medicine and Engineering) at Humanitas University in Milan. Previously Vice President of MEDTEC School, the joint Medicine–Bioengineering degree at Humanitas University, he has long worked at the interface of medicine and engineering, a mission he now leads through PRIME, bringing innovation and engineering thinking into clinical medicine and training a new generation of clinician-scientists.

He studied in Italy (University of Udine), Spain (Universidad Autonoma de Madrid), the UK (St George's University of London), and the USA (Harvard Medical School). He worked for 14 years as an NHS Consultant in the UK before joining Humanitas in Milan, Italy in 2018.

He has authored more than 500 peer-reviewed articles and has an H-Index of 107. His research focuses on improving outcomes in perioperative care, data science and artificial intelligence, and the physiology of shock, acute respiratory failure, and sepsis.

He is the Past President of the European Society of Intensive Care Medicine, which he led through the COVID-19 pandemic. He designed and directed the EU-funded C19_SPACE training course, which provided 20,000 healthcare workers with practical training in record time during the pandemic. He is part of the Surviving Sepsis Campaign, co-authoring its 2026 International Guidelines for the Management of Sepsis and Septic Shock, and has collaborated with WHO on the COVID-19 and Influenza Clinical Guidelines.

He has been named by JAMA as one of the most influential healthcare leaders of the pandemic. In 2020, the Italian president nominated him Knight of the Order of Merit (O.M.R.I) of the Italian Republic. In 2025 he received the ESICM Society Medal.

Abstract:

Health systems in Europe and worldwide face a demographic challenge of unprecedented scale: populations are ageing, chronic disease is rising, the workforce is shrinking and resources are constrained. Artificial intelligence is widely offered as the answer, and it will be part of it, but only if the people using it are prepared. This talk opens with an episode from the history of medicine that shows, better than any algorithm, what it really means to think with data, and what separates an association from a cause; the lesson is more than a century old and remains the one students most need today. Teaching people to use AI is therefore not a technical addition to the curriculum



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but a core educational task. The argument then turns to a previous crisis: an EU funded emergency training programme that used virtual reality and other digital tools to upskill 20,000 healthcare workers in record time during the pandemic, and that has since been shown to return 478% on the investment made in it, evidence that training can be measured and that it pays. That evidence matters for a second reason: institutions that are active in research deliver better outcomes for patients, so teaching the value of research is itself a clinical intervention. The talk closes with two programmes built on these convictions, MEDTEC School, the joint degree in medicine and engineering of Humanitas University and Politecnico di Milano, and PRIME, the joint PhD of the same two institutions, and what they suggest about the professionals health systems will need.



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Georg Dorffner, Prof, Institute of Artificial Intelligence, Medical University Vienna (Austria)



Biography

Georg Dorffner is Associate Professor at the Institute of Artificial Intelligence, Center of Medical Data Science, Medical University of Vienna. He holds master's degrees in computer science and communication engineering, as well as a PhD in Computer Science, and has performed research in AI since the 1980s, when he was one of the Austrian pioneers in applying neural networks for both machine learning and as a cognitive model of language acquisition. Since 2014 he has been the curriculum director of the Master program "Medical Informatics" at the Medical University of Vienna. From 2020-25 he was head of the project "Digital Skills, Knowledge and Communication for Students of Medicine", funded by the Austrian Ministry of Education, developing novel curriculum elements for Digital Medicine. He is also one of the vice presidents of the Austrian Society of Artificial Intelligence (ASAI).

Abstract

As a panelist I will give a brief overview on the different levels a general introduction to AI can be situated on. I will argue that many courses offered as providing the necessary background for AI literacy actually fall short of doing that, as some technical understanding is necessary to fully assess the applications and limits of AI, also for non-technical students. I will then briefly describe how we approach the topic of AI education at the Medical University of Vienna



Anne Farmakidis, Senior Director, Digital Medical Education at Association of American Medical Colleges



Biography:

Anne Farmakidis is the senior director of digital medical education, leading a portfolio of medical education mission area scholarship, data, and educational technology programs at the AAMC. Previously serving as managing editor of Academic Medicine and senior director of publishing at the AAMC, Anne has focused most of her career on the intersection of medical education scholarship and technology disruptions. She has led major digital strategy and technology initiatives at the AAMC; most recently, co-leading the team building out the AAMC's strategic response to AI in medical education. Her current portfolio includes both AAMC journals, Academic Medicine and MedEdPORTAL, the Curriculum Resources unit, which administers the largest medical school curriculum survey in the United States, AAMC CareerConnect, and the

MedBiquitous program, which offers the health professions education community a trusted place for guidelines, best practices, and collaborations around data and technology advancement and innovation.

Abstract:

As part of the panel Learning and teaching with AI and other new technologies, I could share perspectives from AAMC member institutions in the United States as they grapple with the challenges of budgeting for this “token economy”; determining when to introduce AI tools into the curriculum realizing learners will face new AI tools in clinical practice, yet ensuring there is sufficient “learning friction.” I also can offer up our most recent data on the rate of AI integration in the undergraduate medical education curriculum in the United States.



Roman Hari, PD MD, Dean of Education, Medical Faculty, University of Bern
(Switzerland)



Biography:

PD Dr. med. Dr. phil. Roman Hari is the Dean of Education at the Faculty of Medicine in Bern/Switzerland and the project leader for the 4S4+ curriculum reform in Bern (2025–2034). Alongside his academic work as a lecturer, curriculum designer and educational researcher, specialising in ultrasound and peer teaching, he works part-time as a GP in Burgdorf.

Talking points:

Clearly identifying and distinguishing the different domains in the discussion:

- AI literacy as a learning outcome
- AI as a learning support tool
- AI as a tool for curriculum design and planning

AI literacy as a learning outcome: As part of our curriculum reform in Bern, we aim to establish a longitudinal **"Digital Skills"** theme throughout the curriculum. This would include learning objectives such as:

- Using digital reference resources and electronic patient information systems effectively
- Incorporating AI tools into clinical decision-making
- Understanding the risks, limitations, and biases of AI-assisted systems



Sebastian Hochreiter, medical Student, Medical University Vienna (Austria)



Biography:

Sebastian Hochreiter is a medical student at the Medical University of Vienna with a background spanning human medicine, medical informatics, and business informatics. He serves as Chairman of AIM Austria, Austria's leading interdisciplinary network at the intersection of medicine and technology and as Partner and Senior Platform Architect at Dermonaut, a clinical AI platform developed at MedUni Vienna, where he leads the technical development. In 2025, he was part of the MedUni Vienna team that won second place at the NIH-organised SPARC FAIR Codeathon for advancing FAIR data principles in biomedical research. His work consistently bridges clinical practice and technological implementation: he is a practitioner who builds clinical AI products.

Abstract (Session 1 – Learning and teaching with AI and other new technologies):

Traditional health professions education teaches AI as a subject. This contribution argues that the most durable AI literacy comes from building with it under real

clinical constraints. Drawing on hands-on experience leading the technical development of Dermonaut, a clinical AI platform at MedUni Vienna, and founding AIM Austria as an interdisciplinary ecosystem for medical and computer science students, this panel contribution offers a practitioner's perspective on what changes when students move from passive AI consumers to active developers. The central thesis: exposure to the full stack of clinical AI development, problem scoping, regulatory constraints, stakeholder alignment, and deployment realities, produces a fundamentally different kind of AI-literate clinician than any lecture-based curriculum can.



Kurt Hoeller, Senior Director Digital Affairs, Healthcare Vertical Market, Siemens,
Munich (Germany)



Biography:

Dr. Kurt Hoeller is Senior Director of Digital Affairs at Siemens AG, driving digitalization and sustainability strategies for smart hospitals. From 2015 to 2024, he served on the Executive Management Team of EIT Health, where he led the Accelerator supporting 1,000+ startups that attracted over €3B in investment, later becoming Managing Director of its investment and regional organizations. Previously, he founded FAU's Central Institute of Biomedical Engineering and several health-tech spin-offs. Kurt holds a Diploma in Electrical Engineering, a PhD in Computer Science and an MBA in Entrepreneurship, and serves as vice-chairman of the supervisory board of ESTW AG.

Abstract:

Drawing on Dr. Kurt Höller's experience as Founding Managing Director of the Central Institute for Healthcare Engineering (ZiMT) at Friedrich Alexander University Erlangen Nürnberg and as a Director at EIT Health, this contribution will discuss how medical education must evolve to prepare future healthcare professionals for smart hospitals. At ZiMT, he developed an interdisciplinary healthcare engineering curriculum across engineering, natural sciences, medicine, economics, and humanities. At EIT Health, he helped initiate and support numerous European education and innovation programmes focused on the future of healthcare.

Building on these experiences, Dr. Höller will explore how future clinicians need competencies that go beyond AI-supported process optimisation and encompass digital patient journeys, clinical dashboards, bedside technologies, data-driven care pathways, and autonomous hospital buildings. He will argue that interdisciplinary education and digital literacy are essential to fully realise the potential of patient-centred, smart hospitals.



Alexander Hoffelner, MD, Pediatrics, Medical University Vienna (Austria)



Biography

Alexander Hoffelner, MD, is a pediatric resident in neonatology and pediatric intensive care at the Medical University of Vienna, where clinical practice, research, and teaching intersect around technology-enhanced medical education. His research focuses on simulation-based and immersive learning, virtual and augmented reality, and increasingly artificial intelligence, with particular attention to interprofessional teamwork, psychologically safe learning environments, and patient safety. He leads VR and simulation-based teaching formats within university curricula and research group.

Abstract

Immersive technologies are frequently showcased in medical education, yet their value in the hospital setting depends far less on the technology itself than on how deliberately it is embedded in the curriculum. Drawing on VR and AR formats developed for neonatology and pediatric intensive care, this contribution argues for treating immersive simulation not as a standalone event but as a recurring, transfer-oriented curriculum building block. Talking points include: designing scenarios that are psychologically safe and reflection-driven rather than performance-anxious, as well as using VR/AR to rehearse interprofessional teamwork and role clarity in high-acuity situations that are hard to train at the bedside. Also integrating emerging AI, for example via adaptive scenarios, automated debriefing support, without letting the technology drive the pedagogy and evaluating these formats against learning transfer and patient safety outcomes rather than novelty or satisfaction alone. The aim is a pragmatic account of what makes technology-enhanced teaching sustainable within the everyday realities of a demanding hospital.



Lisa Howley, PhD, Senior Director, Transforming Medical Education, AAMC,
Washington (USA)



Biography:

Lisa Doyle Howley, PhD is an educational psychologist and a national leader in medical education. She serves as the Senior Director for Transforming Medical Education at the Association of American Medical Colleges (AAMC), where she drives advancements in competency-based medical education (CBME), new and emerging areas including AI, and fosters innovation and creativity in teaching and learning. In 2018, she founded the AAMC FRAHME initiative - the fundamental role of the arts and humanities in medical education.

With more than three decades of experience in academic medicine, Dr. Howley has held leadership roles at institutional, regional, and national levels. She currently

leads a diverse portfolio and team dedicated to transforming models of teaching and learning across the continuum of medical education. Her work accelerates the adoption of CBME, advances faculty development, and ensures that new and emerging areas of medicine are effectively integrated into curricula across AAMC's member schools and teaching hospitals. Dr. Howley holds an adjunct faculty appointment at the University of North Carolina School of Medicine. Earlier in her career, she was a member of the medical education faculty at the University of Virginia School of Medicine, where she designed and implemented performance-based assessments and simulation-enhanced curricula. She earned both her M.Ed. and Ph.D. in Educational Psychology from the University of Virginia. A frequent speaker and thought leader, she is dedicated to shaping the future of medical education through strategic collaboration, scholarship, and innovation.

Abstract:

Arts and humanities offer essential ways of developing the capacities clinicians need to understand patients, themselves, and the complex human contexts in which health and illness occur. In this brief presentation, I will share the story of the AAMC's Fundamental Role of the Arts and Humanities in Medical Education (FRAHME) initiative—why it was launched, what it sought to accomplish, and for whom.

FRAHME began with a recognition that preparing health professionals requires more than scientific and technical expertise: learners also need opportunities to develop observation, interpretation, empathy, perspective-taking, communication, creativity, and comfort with ambiguity. I will highlight how the AAMC FRAHME (which is open to all) continues to bring together educators, learners, artists, humanists, and other partners to articulate the value of



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these approaches, build an evidence-informed framework, and encourage their meaningful integration across medical education. I will conclude by considering what this experience suggests about the role of arts and humanities in preparing health professionals for increasingly complex, technologically enabled, and ethically challenging environments.

By the end of this brief presentation, participants will be able to:

1. **Articulate why arts and humanities matter** in preparing health professionals, including their contribution to observation, interpretation, empathy, communication, perspective-taking, and navigating ambiguity.
2. **Describe the purpose and evolution of the FRAHME initiative** and how it sought to move arts and humanities from enrichment activities toward intentional integration within medical education.
3. **Consider how the FRAHME experience can inform their own institutions**, including who should be involved and how arts and humanities can address emerging educational needs in an era of rapid technological and societal change.



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Jonathan Jaffery, Chief Health Care Officer, AAMC, Washington (USA)



Biography:

Jonathan B. Jaffery, MD, MS, MMM, FACP, serves as chief health care officer at the AAMC, where he leads efforts to improve health care access, quality, affordability, and clinical leadership while working with member institutions, federal agencies, and partners to support high-value patient care, academic missions, and financial sustainability. Prior to joining the AAMC, he was chief population health officer at UW Health and president of the UW Health Accountable Care Organization, guiding the organization's transition to value-based care while serving on the faculty of the University of Wisconsin School of Medicine and Public Health. Dr. Jaffery also served as chief medical officer for Wisconsin Medicaid, was a Robert Wood Johnson

Foundation Health Policy Fellow with the Senate Finance Committee, and has been a commissioner on the Medicare Payment Advisory Commission (MedPAC) since 2018. A board-certified nephrologist and Fellow of the American College of Physicians, he is active in several professional organizations and holds degrees from the University of Michigan, The Ohio State University, the University of Wisconsin, and the University of Southern California, with residency and fellowship training completed at the University of Vermont Medical Center.



Oliver Kimberger, Prof, Clinical Division of General Anaesthesia and Intensive Care Medicine, Medical University Vienna (Austria)

**Biography:**

Oliver Kimberger, MD, MSc, MBA, is Professor of Perioperative Information Management and Vice Chair of the Clinical Division of General Anaesthesia and Intensive Care Medicine at the Medical University of Vienna. He is also co-leading the Ludwig Boltzmann Institute for Digital Health and Patient Safety and serves as a senior emergency physician. He completed his medical training at the University of Vienna, obtained specialist certification in anaesthesiology and intensive care medicine, and holds an MSc in Statistics and Biometry from

Heidelberg University and an MBA in Health Care Management from the Medical University of Vienna. Following a research fellowship at Inselspital Bern, his clinical and scientific work has focused on perioperative medicine, thermoregulation, fluid management, microcirculation, digital health, clinical decision support, and artificial intelligence.

Abstract:

In his contribution, Oliver Kimberger will describe the development and implementation of the new four-semester, 120-ECTS MSc (Continuing Education) programme in Digital Medicine at the Medical University of Vienna, established within the EU-funded DS4Health initiative. He will explain how the curriculum was designed specifically for healthcare professionals, including participants without a technical background, by combining foundations in computer science and biostatistics with artificial intelligence, clinical information systems, interoperability, data security, telemedicine, medical apps, wearable technologies, robotics, and the ethical, legal and social dimensions of digital medicine. Particular attention will be given to the interdisciplinary governance required to align clinical, technical and academic perspectives, the integration of internships and a master's thesis, and the practical lessons learned in progressing from an international educational concept and formal curriculum approval to a fully online, English-language postgraduate programme.



Harald Kittler, Professor for dermatology, Medical University Vienna (Austria)



Biography

Harald Kittler, MD, is Professor of Dermatology and senior physician at the Medical University of Vienna, where he leads the Vienna Dermatologic Imaging/Informatics Research (ViDIR) group and coordinates the dermatology curriculum. His research focuses on skin cancer diagnosis, dermoscopy, medical education, and artificial intelligence. He has been involved in international studies on human–AI collaboration, explainable AI, and AI-supported clinical

decision-making, as well as the development of gamified approaches to diagnostic training.

Abstract

Artificial intelligence in medicine is usually conceived as a tool that supports clinical decisions, but it may also become a tool from which clinicians can learn. Via a gamified reader platform we demonstrated that high-quality AI support improved diagnostic accuracy, particularly among less-experienced clinicians, whereas erroneous AI advice could mislead even experts. Importantly, we also demonstrated that knowledge can be transferred from AI to humans: analysis of the AI's attention revealed that surrounding sun-damaged skin was an important clue for recognizing pigmented actinic keratoses. When we taught this previously underappreciated clue to medical students, their diagnostic performance improved. Building on these findings, I will discuss how gamification could provide an engaging environment for systematic human–AI interaction, allowing learners to solve cases, compare their reasoning with AI, receive immediate feedback, and discover diagnostic clues identified by AI. In this way, AI could evolve from a system that simply provides answers into a training partner that helps humans become better diagnosticians.



Georg Langs, Prof, Head of the Comprehensive Center for AI in Medicine, Medical University of Vienna (Austria)



Biography

Georg Langs is Full Professor for Machine Learning in Medical Imaging at Medical University of Vienna. Since 2011, he is the founding director of the Computational Imaging Research Lab (CIR) at the Department of Biomedical Imaging and Image-guided Therapy, with a 25 strong interdisciplinary team. CIR develops machine learning methodology for medical image analysis, the quantification of predictive markers in imaging data and connected patient information, and the identification of phenotypes in large-scale heterogeneous clinical routine data. Over the last two years CIR has won competitive grants for project funding exceeding €6Mio with G.

Langs as PI.

Since 2023 he is the director of the Joint Initiative on AI in Medical Imaging of the European Institute of Biomedical Imaging Research (EIBIR), and is the scientific lead of the Respiratory Disease Phenotype Observatory, Zoonotic Disease Integrated Action (ZODIAC), UNO, IAEA. Since 2011, he is Research Associate at the Computer Science and Artificial Intelligence Lab at MIT, where he held a Research Scientist position from 2009-2011. and Associate Faculty at the Complexity Science Hub Vienna. He was a post-doctoral researcher at the Applied Mathematics Laboratory at the Ecole Centrale de Paris (Paris, France, 2007-2008). He finished his PhD in Computer Science at the Graz University of Technology in 2007, and his Master of Science in Mathematics at the Vienna University of Technology (2003).

He is co-author of more than 200 peer-reviewed papers. Georg Langs is co-founder of a contextflow GmbH, a MedUni spin-off developing machine learning software for medical imaging data.



Pedro Mateus, Prof, Director of the Medical Education Department, Católica Medical School, Lisbon (Portugal)



Biography

He began his career as a Psychoeducator at Miguel Bombarda Hospital, later joining the National Coordination for Mental Health at the Ministry of Health and, subsequently, the Directorate-General for Health. He represented Portugal for a decade in the European Commission Group of Governmental Experts in mental health, as well as in a similar group at WHO-Europe.

He holds a PhD in Mental Health and is currently Associate Professor of Medical Education at Católica Medical School, where he heads the Department of Medical Education and teaches in the Integrated Master in Medicine and the Medical Sciences PhD programme. He has also taught at NOVA Medical School, King's

College London, and the University of Concepción (Chile), and held a postdoctoral fellowship on an ERC project at the London School of Economics.

His educational work also includes clinical supervision, training-of-trainers in Behavioural Family Therapy, and national trainer roles in Case Management for Early Psychosis and Family Psychoeducation under the Ministry of Health.

Abstract

Católica Medical School is a young institution still building its educational infrastructure. The Department of Medical Education leads the effort to move curriculum implementation beyond isolated course changes toward a coherent, competency-based approach grounded in the scholarship of teaching and learning. Drawing on this experience, the talk will discuss system wide curriculum implementation as a tool to shift teaching away from lecture-based models toward active, evidence-based approaches, and how implementation fidelity is tracked to ensure reform takes hold in practice. It will also address the challenge of embedding a scholarly, evidence-generating culture within a new medical school, sharing lessons learned about navigating curriculum reform in the AI era.



Christoph Minichsdorfer, PhD, Division of Oncology, Medical University of Vienna (Austria)



Biography

Christoph Minichsdorfer, MD, PhD, is a medical oncologist at the Division of Oncology, Department of Medicine I, Medical University of Vienna, where he combines clinical work at the Comprehensive Cancer Centre with translational research and undergraduate teaching. He graduated in medicine at the Medical University of Vienna in 2007 and completed a PhD in molecular signal transduction in 2012 on statin-induced apoptosis in melanoma; he qualified in internal medicine in 2016 and has worked as a specialist in medical oncology since 2018. His research has been supported by the Medical Scientific Fund of the Mayor of the City of Vienna, the Anniversary Fund of the Austrian National Bank, and a Roche Young Scientist Award, and ranges from preclinical work on statins in cancer to serum biomarkers in checkpoint inhibitor therapy. In medical

education he works on digital teaching formats at the Department of Medicine I. His most recent project, developed jointly with the Digital Teaching team of the Medical University of Vienna, uses AI-generated virtual patients to train science communication with patients who are sceptical of evidence-based treatment; it has been selected for the Ars Docendi, the Austrian State Prize for Excellent Teaching in Higher Education, to be conferred in September 2026.

Abstract

Physicians increasingly meet patients whose treatment decisions are shaped by health misinformation, yet undergraduate curricula rarely offer deliberate practice for these conversations. At the Medical University of Vienna we developed a science communication teaching unit for fourth-year medical students built around two AI-generated interactive virtual patients: a woman with breast cancer who wishes to decline neoadjuvant chemotherapy in favour of high-dose vitamin C, and a vaccine-hesitant parent seeking advice on measles immunization. Both were produced with generative AI as branching video dialogues in which the virtual patient reacts to every communicative choice the student makes, and in which the consultation can go well or badly. The design deliberately makes failure visible: students see, rather than are told, how an encounter ends when concerns are dismissed rather than addressed. In a survey of the cohort, students rated the format highly for realism and teaching value while positioning it as a complement to, not a replacement for, encounters with real patients. The scenarios were developed in close collaboration with the Digital Teaching team of the Medical University of Vienna: the branching video dialogues, the AI-generated patient characters and their integration



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into the learning platform would not have been possible without their media production expertise, and the project has been selected for the Ars Docendi, the Austrian State Prize for Excellent Teaching in Higher Education, to be conferred in September 2026. My contribution to the panel uses this example to ask what “high quality teaching” can mean when the technology is inexpensive, the scenarios are emotionally demanding, and the learning objective is a conversation rather than a fact.



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Tabea Ott, Prof, Deputy Head of the Institute of Ethics and Law in Medicine,
University of Vienna (Austria)



Biography

Tabea Ott is Assistant Professor of Medical Ethics and Diaconal Sciences at the University of Vienna. Her research focuses on areas where digital technologies shape people's lives and decision-making situations. This concerns, for example, the use of digital health applications, AI-supported diagnostics, or data-based decision-making processes in nursing and medicine. In her work she researches the associated issues of justice, participation, autonomy, and vulnerability.

Abstract

The digitalization of healthcare, driven by artificial intelligence (AI), is creating new forms of visibility. Visibility encompasses both physical perceptibility of a person and the visibility necessary for recognition and social participation. This article argues that two phenomena compromise recognition and social participation: (digital) invisibility and (digital) exposure. Consequently, the governance of AI in medicine must consider these phenomena.



Oleksandr POKANEVYCH, MD, MPA, MSc, President, Kyiv Medical University (Ukraine)



Biography

Oleksandr Pokanevych is President of Kyiv Medical University (KMU) and a physician specializing in orthopaedics and traumatology. He is actively involved in the University's strategic development, international cooperation, and the expansion of academic and institutional partnerships in Ukraine and internationally. His professional interests include the development and internationalization of medical education, knowledge transfer, healthcare

system strengthening, and public health. He is also actively engaged in research in the field of public health, with particular interest in health systems, healthcare workforce resilience, medical education, and the challenges facing healthcare in Ukraine during and after the war.



Anita Rieder, Prof, Vice Rector for Education, Medical University Vienna (Austria)



Biography

Prof. Dr. Anita Rieder graduated with an M.D. from the University of Vienna and has extensive experience in social medicine, public health, and prevention. She is a medical specialist by training specialist in social medicine/public health in 1995. Prof. Dr. Rieder has held various academic positions, including visiting professor at the Ottawa Heart Institute, Goeppert-Mayer professor at medical school Hannover and full professor at the Medical Faculty Vienna, where she also served as Director of Medical Studies. Since 2015 she is the Vice-Rector for Education and since 2012 chair of the center for public health and chair of the department of Social – and Preventive Medicine at the Medical University Vienna.

Her research and teaching focuses on public health and digital public health, health policies and public health strategies, health promotion and prevention and medical education. She has received several awards, including the Order of Merit from the

Chamber of Physicians Vienna and the Austrian Cross of Honor for Science and Art. Dr. Rieder has been involved in multiple scientific advisory boards and committees abroad and in Austria, emphasizing her role in public health policy and education. She has memberships in notable organizations and boards, contributing to various health initiatives and accreditation processes.



Bernhard Rössler, MD, Anaesthesiology, Medical University of Vienna (Austria)



Biography:

Bernhard Rössler, MD is an Associate Professor of Anaesthesia and Critical Care Medicine at the Medical University of Vienna, senior consultant and leading critical care physician of a transplant intensive care unit, director of the Academic Simulation Center Vienna, and Head of the Medical Simulation and Emergency Management research group. His clinical, academic, and leadership work focuses on medical simulation, patient safety, emergency and crisis management, and the development of innovative, interprofessional training programmes. With extensive experience in simulation-based education and healthcare leadership, including a fellowship in Medical Simulation in Perth, Australia, he brings a practical perspective on how technologies can strengthen learning, teamwork, and patient care in the hospital environment.



Frank Rühli, Dean Faculty of Medicine, University of Zurich, AAHCI European Regional Office Ambassador (Switzerland)



Biography:

Frank Rühli, Dr med, PhD is Dean of the Medical Faculty and Founding Chair (Full Professor) and Director of the Institute of Evolutionary Medicine, University of Zurich (UZH), Switzerland. He is faculty member of both, the medical and the science faculty of the University of Zurich. He is Co-Head of the Center for Crisis Competence" at the Faculty of Business, Economics and Informatics, University of Zurich. He holds the Toh Chin Chye Visiting Professorship at the Yong Loo Lin Medical School, National University of Singapore and a Honorary Adjunct Professorship at the Faculty of Health and Medical Sciences, The University of Adelaide, Australia. He was a.o. an Honorary Visiting Professor at the Lee Kong Chian School of Medicine, Nanyang Technological University Singapore and a visiting professor at the Medical Faculty of the University of Geneva, Switzerland. He is a member of the Advisory Board of the School of Medicine, University of t.

Gallen (HSG), Switzerland; also he is co-founder and steering committee member of the One Health Institute, board member of the Europa Institute and of the "Competence Center Medicine - Ethics - Law Helvetia", all at the UZH. His main interests are evolutionary medicine (esp. diagnostic imaging of ancient mummies) academic governance and health care policy. Frank Rühli has acquired ca. 20 million USD of third-party funding and has a total of ca. 300 scientific publications. He serves in multiple professional bodies (e.g. as past-president of the leading international society of evolutionary medicine, as a member of scientific museum advisory boards or as president of an archeology foundation), editorial boards and political organizations (e.g. he is a former member of the Parliament of the City Zurich). Prof Rühli holds also an Executive MBA degree and serves in the rank of a colonel in the militia staff of the chief of the Swiss Armed Forces.

Abstract:

Medical Humanities and Ethics are essential in health professions education for fostering critical reflection on the humanistic, cultural, and ethical dimensions of healthcare, especially in an era increasingly shaped by artificial intelligence (AI). At the University of Zurich (UZH), the novel medical curriculum integrates these disciplines alongside emerging AI technologies to prepare students for the ethical challenges and human-centered decision-making required in modern medicine. This interdisciplinary approach combines clinical training with insights from history, philosophy, and ethics, while critically examining AI's impact on patient care, data privacy, and professional responsibility. The rich medical collection at UZH further supports this education by providing historical context on



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medical practice and ethical standards, enabling students to thoughtfully assess how AI transforms healthcare delivery while maintaining compassion and integrity. Together, these components equip future healthcare professionals to navigate the complexities of AI integration with empathy, ethical awareness, and cultural sensitivity.



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Luciano Saso, Faculty of Pharmacy and Medicine, Sapienza University of Rome,
Academic Guest, University of Zurich, AAHCI European Regional Office Co-Ambassador



Biography:

Prof. Luciano Saso is Full Professor of the Faculty of Pharmacy and Medicine of Sapienza University of Rome in Italy and Academic Guest at the Institute of Evolutionary Medicine of the University of Zürich. He is author of more than 400 original scientific articles published international journals (H-index Google Scholar = 85) working mainly in the field of pharmacological modulation of oxidative stress. In 2022 and 2024 he was listed among the HIGHLY CITED SCIENTISTS (<https://clarivate.com/highly-cited-researchers/>). He coordinated several international research projects and has been referee for many national and international funding agencies and international scientific journals in the last 30

years. He has been Editor and Guest Editor of Special Issues of different international journals. Prof. Luciano Saso (luciano.saso@uniroma1.it) has extensive experience in international relations and in the last 30 years he has been speaker and chair at many international conferences. He has been Deputy-Rector at Sapienza University of Rome (<https://www.uniroma1.it/en/>) (2015-2022) and currently serves as Co-Ambassador of the European Office of AAHCI <https://www.iem.uzh.ch/en/AAHCI-European-Regional-Office.html>

More information is available at

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<https://loop.frontiersin.org/people/613175/overview>

Abstract

The impressive recent development of GenAI (AI) is offering universities the opportunity to innovate very significantly teaching and learning. In many cases, higher education institutions still teach in a very traditional way while many changes are necessary. Students could now learn only the main elements of the subject without memorizing by heart details that can be easily found by AI tools. During the exams (oral when possible) we can ask students more complex questions which require a very good knowledge of the subject without necessarily knowing all technical details. That will also help to make curricula more interdisciplinary. When possible, it's very useful to "flip the classroom", i.e. to ask the students to prepare at home before coming to the class and discuss the



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assignment with the teacher and other students. AI tools will soon perform many activities done today by humans and that should be taken into account when preparing our graduates. Very soon, many professionals will benefit from AI machines in such a way that even if “machines will not replace immediately humans”, most probably, humans using intelligent machines will replace soon humans NOT using them”. Of course, these very fast developments are also creating serious ethical problems which require appropriate answers. There is a lot of anxiety at the moment among students and teachers in relationship to what is allowed and what is not and we need to prepare (and update very frequently) detailed guidelines and provide AI literacy courses to both students and educators. Solutions are often not easy and transparency is essential whenever AI is involved.



Tereza Vafkova, MD, Vice-head at the Department of Simulation Medicine, Faculty of Medicine, Masaryk University, Brno (Czech Republic)



Biography

Tereza Vafkova, MD, is Vice-head of the Department of Simulation Medicine at the Faculty of Medicine, Masaryk University Brno, and a physician. She is currently pursuing doctoral studies in Healthcare Simulation. Her work focuses on faculty development in simulation-based education, debriefing, and medical education methodology, including co-founding the Student as Teacher programme and co-authoring several e-learning courses on medical education, first aid, and palliative care.

Abstract

Simulation-based education enables learners to practise high-stakes or infrequently occurring situations in a safe environment, free from the pressures and risks of real patient care. In my contribution, I will demonstrate how simulation can complement hospital-based teaching by transferring certain learning objectives, such as communication skills, procedural training and crisis management, to a controlled environment. This frees up clinical time for activities that genuinely require a real patient. Drawing on my experience of bridging a simulation centre and hospital practice, I will demonstrate how this division of learning settings can strengthen teaching in the hospital rather than replace it.



Michael Wagner, MD PhD, Pediatrics, Medical University of Vienna (Austria)



Biography

Michael Wagner is a neonatal consultant at the Medical University of Vienna, Austria. In addition, he completed his PhD with a focus on pediatric simulation, resuscitation, and patient safety. He is responsible for the Pediatric Simulation Training Center, which provides simulation courses in pediatric medicine for students, physicians, midwives, and nurses.

His research focuses on improving pediatric and neonatal resuscitation as well as patient safety, cognitive behavior and on innovative future training. In terms of simulation training, he is interested in introducing and evaluating new teaching practices.

Abstract

His talk will focus on videorecording and debriefing in a clinical setting with information on how to build such a program in your own unit.



Roland Wiest, MD, Vice-Director, Department of Digital Medicine (DDM), University of Bern (Switzerland)



Biography

Prof. Dr. med. Roland Wiest is Professor of Advanced Neuroimaging at the University of Bern. He is Vice Director of the University of Bern's Department of Digital Medicine and Medical Director of the Translational Imaging Center in Bern, with a particular focus on advanced MRI at 3T and 7T.

His research focuses on advanced and quantitative neuroimaging, artificial intelligence, and multimodal brain imaging, with particular emphasis on epilepsy, cerebrovascular disease, neurodegeneration and other neurological disorders, development and clinical validation of innovative neuroimaging technologies and computational methods.

Prof. Wiest is involved into translating advanced MRI, functional imaging and AI-based image analysis into clinical neuroscience. His work combines neuroimaging, neurophysiology, machine learning and clinical data to improve diagnosis, risk

prediction and personalized treatment.

He is internationally active in neuroimaging research and currently serves as Scientific Secretary of the Swiss Society of Neuroradiology and as a member of the AI task force of the European Academy of Neurology (EAN).

Abstract

Knowledge Training in digitalized healthcare: Challenges, emerging professions, and opportunities

The adoption of artificial intelligence (AI) and the restructuring of clinical workflows require structured change management at multiple levels. For healthcare professionals, this includes foundational knowledge of technological implementation methods, ranging from undergraduate education for medical students and trainees to specialized educational programs at the executive level. Conversely, engineering education needs to be complemented by fundamental theoretical and practical knowledge in key medical domains affected by digitalization and AI implementation. Emerging concepts such as immersive shadowing can further facilitate collaboration between healthcare institutions and industry partners. During the panel discussion, the concept of "AI in the Clinics", as implemented in technical master's programs and Certificate of Advanced Studies (CAS) programs in AI for medical professionals at the University of Bern, will be briefly introduced and discussed.

Within an early-adopter program for AI implementation in our neuroradiology department, we implemented a dual-track socio-technical strategy combining vendor-neutral automated workflow orchestration and multi-application deployment with a structured change-management program. The latter included user education,





workflow standardization, documentation, feedback mechanisms, and governance. We observed an increase in the validation of AI-derived data from 13.9% during a period in which AI applications were used as standalone tools to 61.1% following the implementation of integrated AI platforms.

At the trainee level, validation behavior was strongly influenced by the supervising consultant. Trainees supervised by high-adoption consultants demonstrated substantially higher validation rates than those supervised by consultants with minimal AI adoption. This finding suggests that consultant behavior serves as a role model and strongly influences trainee practice. It highlights the importance of investing not only in trainee education but also in preparing consultants to model effective and responsible AI use, thereby embedding new technologies within the clinical culture. We conclude that dual-track sociotechnical implementation strategies are essential prerequisites for the sustainable adoption of AI in healthcare. Successful implementation requires not only appropriate technological infrastructure but also structured education, clinical leadership, workflow integration, governance, and a culture of continuous learning.

