ICCAI 2025

Clinical decision support in critical care: creating value beyond the hype

Sponsored by

NIHON KOHDEN
Digital Health Solutions

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Time	Day 1 Thu, 18 Sep	Day 2 Fri, 19 Sep	Day 3 Sat, 20 Sep
8:00 - 8:30		**Poster Viewing**	**Poster Viewing**
8:30 - 9:00	**Opening Ceremony**	**Poster Viewing**	**Poster Viewing**
9:00 - 10:00	**Keynote** **Prof. Peter Klimek** Complexity Science Hub, Medical University of Vienna "Systems medicine approach to population-wide disease trajectories. From phenotypes to molecular basis"	**Keynote** **Patrick Walker, MD, FACS** Walter Reed National Military Medical Center, USA "Can in silico modeling distinguish reversible death from irreversible death?"	**Keynote** **Prof. Clemens Heitzinger** TU Wien, Austria "Optimal treatment policies and their evaluation"
10:00 – 12.00	**Session 1: Multiscale modeling (Data)** Chairs: David Albers "Reimagining Critical Care Through AI: From Sensing to Decision Support" Prof. Parisa Rashidi, University of Florida, USA "Lung injury: from clinical ventilator waveforms to the alveoli of mice" Prof. Bradford Smith, University of Colorado, Anschutz Medical Campus, USA "A longitudinal Model to Predict Delayed Cerebral Ischemia (DCI) in Subarachnoid Hemorrhage" Prof. manuela Keller, Universitätsspital Zürich, CH Panel Discussion	**Session 3: Clinical decision support systems: recent advances and new challenges** Chair: Vitaly Herasevich "Decision support in modern EMR" Prof. Adel Bassily-Marcus, MD, YNHHS Chief of Surgical Critical Care, Yale School of Medicine, USA "CDS implementation that works" Svetlana Herasevich, MD, MSc, Mayo Clinic, USA "Uncertainty-enabled decision support in Critical Care" Finneas Catling , MBChB, MSc, Queen Mary University of London, UK Panel Discussion	**Session 5: Regulatory & Ethical Aspects of CDS** Chairs: Oliver Kimberger, Sven Zenker "Ethical and regulatory challenges of clinical applications of high-dimensional ML models" Prof. Stephen Henry Gilbert , TU Dresden, Germany "Computer Vision at the bedside. Regulatory and Ethical challenges" Prof. Vitaly Herasevich, MD, PhD, Mayo Clinic, USA "Practical experiences with the regulatory pathway for CDS " Part I: HemoRisk Prof. Gilles Clermont, MD, MSc, University of Pittsburgh, USA Part II: WounDX Prof. Seth Schobel, Uniformed Services University of the Health Sciences, USA
12:00 - 12:30	**Abstract Session A1**	**Formal Poster Presentations**	Panel Discussion

	Abstract Session A1 1) Riccardo Asnaghi, *Waveform Analysis of Central Venous Pressure in Infants undergoing Tetralogy of Fallot repair* 2) Ebenezer Tolman, *Beat-to-Beat Blood Pressure Variability in PCI Cohort* 3) Ryan B. Felix, *Development of a photoplethysmography-derived cardiovascular age metric for trauma and intensive care risk stratification*		
12:30 - 14:00	**Lunch break and poster viewing**		
14:00 - 15:30	**Session 2: Challenges in Multi-modal Data** Chairs: Maximilian Oremek, Manuela Ferrario "Leveraging Foundation Models for the Analysis of Time Series Data in the ICU" Prof. Robert Stevens, MD, FCCM, Johns Hopkins Medicine, USA "Leveraging of Wearable Devices" Dr. Filipe Da Conceição Barata, ETH Zurich, CH "Using Continuous Multimodal Data for Real-Time Inference and Action" Timothy Ruchti, Director Algorithms at Nihon Kohden Digital Health Solutions, USA	**Session 4: Human-computer interaction** Chairs: Oliver Kimberger, David Tscholl "Federated Learning in Critical Care: Applications in Weaning and Blood Transfusion" Mathias Kaspar, University Hospital Augsburg, Germany. "Improving Situation Awareness in Patient Monitoring with Visual Patient Avatar" David Tscholl, MD, Universitätsspital Zürich, CH. Beyond Buttons and Beeps: What HCI Can (and Cannot) Do for Healthcare Prof Paweł W. Woźniak, TU Wien, Austria	**Session 6: Clinical decision support and clinical workflows** Chairs: Gilles Clermont, Ian Wong "How do you trial/RCT an AI tool?" Feras Hatib, Vice-President R&D BD Advanced Patient Monitoring (APM) "Why cognitive computing is necessary for meaningful progress in acute care decision making" Prof. Brian Pickering, M.B., B.CH., Mayo Clinic
15:00-15:30			**Concluding Remarks and Prize award ceremony** (Sven Zenker)
15:30 - 16:00	**Abstract Session A2** 1) Mohammad Mahdi Azarbeik, *Learning and Evaluating Improved Reinforcement Learning-based Policies for Sepsis Treatment on MIMIC-IV* 2) Shiming Yang, *Early prediction of life-saving interventions using pre-hospital vital signs* 3) Armin Podtschaske, *Pre-operative risk stratification from admission data:Clustering and KNN-modelling for identifying high-risk patients before surgery*	**Abstract Session A3** 1) Seyedmostafa Sheikhalishahi, *Quantifying Multi-Database Heterogeneity in Critical Care: Implications for Federated Learning* 2) Konstantinos Kalpakis, *Predicting Ventricular Tachycardia in ICU Patients Using a Timeseries Foundation Model and Multimodal Waveforms* 3) Seth A. Schobel, *Leveraging RNA-Seq Data to Identify Molecular Distinctions in Patients with Complex Traumatic Injuries: Foundations for Advanced Clinical Support*	
16:00 - 18:00	**SCAI Business Meeting (all attendees)**		
19.00- 21:00		**Banquet**	