



01 Friday, October 18, 2024

Esplanade Hotel Zagreb
Mihanovićeva ul. 1, 10000, Zagreb**8:00 Registration****Cardiovascular engineering****9:00** Hrvoje Gasparovic, MD, Ph.D., FETCS: "Engineering Solutions for Heart Disease" (University Hospital Center Zagreb, Croatia)**9:10** Ivo Planinc, MD, Ph.D.: "Synchrotron derived X-ray imaging of the heart: from whole organ to cardiomyocyte" (University Hospital Center Zagreb, Croatia)**9:20** Tomislav Tomic, MD: "Platelet-Rich Fibrin in Surgery" (University Hospital Center Zagreb, Croatia)**9:30** Goran Medimurec, MD: "The Evolution of Mechanical Heart Valves" (University Hospital Center Zagreb, Croatia)**Opening ceremony****9:40** Petra Bonacic Bartolin, Ph.D., CEO and founder of the BioMedVetMech: "Welcoming words and opening of the Congress" (Imperial College London, UK)**9:50** Professor Ratko Magjarevic, Ph.D.: "Emerging trends and challenges in Biomedical Engineering: Data Analytics and Artificial Intelligence" (Faculty of Electrical Engineering and Computing, Croatia)**Genetic and tissue engineering****10:00** Assistant Professor Kresimir Krizanovic, Ph.D.: "Ab-initio gene detection using deep learning" (Faculty of Electrical Engineering and Computing, Croatia)**10:10** Mario Novak, Ph.D.: "Reconstructing ancient lifestyles, diseases and environments: incremental dentine isotope analysis and lead contamination analysis" (Centre for Applied Bioanthropology, Institute for Anthropological Research, Croatia)**10:20** Igor Erjavec, Ph.D.: "Bone morphogenetic proteins in tissue regeneration" (University of Zagreb School of Medicine, Croatia)**10:40** Professor Iva Dekaris, MD, Ph.D.: "Novel approach to lamellar corneal transplantation" (Polyclinic Bilic Vision, Croatia)**Bioinformatics****10:50** Visnja Stepanic, Ph.D.: "Harnessing digital technologies to explore nature's molecules for targeted human use", (Rudjer Boskovic Institute, Croatia)**11:05 Coffee Break****Orthopedic Engineering Session****12:00** Professor Andrew Amis, FEng, DSc, Ph.D.: "Treatment of sports injuries of the knee" (Imperial College London, UK)**12:20** Professor Reece Oosterbeek, Ph.D.: "Material lifetime considerations for orthopaedic implants" (University of Oxford, UK)**12:35** Stylianos Kechagias: "Design and additive manufacturing of biomimetic lattice structures for bone replacement", (Imperial College London, UK)**12:45** Richard J van Arkel, Ph.D., "Combined partial knee arthroplasty leads to better biomechanics than total knee arthroplasty" (Imperial College London, UK)**13:00** Associate Professor Katarina Barbaric Starcevic, MD, Ph.D. " Safe size of acetabular bone defect for stabile total hip arthroplasty in dysplastic hips: biomechanical considerations" (Acromion -Special hospital for orthopedics and traumatology, Zagreb, Croatia)**13:10** Alan Ivkovic "Nose2Knee Autologous Chondrocyte Implantation: From Bench 2 Bed in 2 Decades" (Department of Orthopaedic Surgery University Hospital Sveti Duh, Croatia)**13:30** Ruben J Doyle, Ph.D.: "Commercialization of innovations in orthopedic engineering" (Imperial College London, UK)**13:45** Iva Borovecki Zuti, MD, "Orthobiology: the future is now", (Arthrex Adria d.o.o., Croatia)**13:45 Lunch break****Radiological Engineering session****14:45** Mihailo Ristic, Ph.D. "In-vivo 3D tractography of collagen using a novel low-field MRI" (Imperial College London, UK)**15:00** Assistant professor Petra Margetic, MD, Ph.D.: "Challenges and advantages of applying artificial intelligence to medical image processing" (University Clinical Hospital Center "Sestre Milosrdnice", Croatia)**Rehabilitation Engineering Session****15:10** Dr. Ian Gatt PhD CMI MSc OMT MAACP MCSP SRP BSc (Hons) " Prevention and Management of Hand-Wrist Injuries in Boxing: Does Research in Biomechanics offer any insights?" (UK Sports Institute)**15:30** Lana Popovic - Maneski, Ph.D.: "Neuroskin: AI-powered FES for gait rehabilitation after stroke" (Institute of Technical Sciences of SASA, Belgrade)**15:45** Ana Aljinovic, M.D.: "Usefulness of high intensity focused electromagnetic technology in treating chronic low back pain" (St. Catherine Specialty Hospital, Zagreb, Croatia)**15:55** Martin Levatic: "The Role of Kinetics in Post-Operative Rehabilitation of ACL Injuries" (Kinesthetic centar, Zagreb)**16:05** Martha Zequera-Díaz , Ph.D.: "Innovative Considerations for Designing Optimal Diabetic Foot and Sport Insoles to Provide Comfort and Protection" (Pontificia Universidad Javeriana, Bogotá, Colombia)**16:15 Professional football player To be confirmed - A professional football player's perspective****16:30 Coffee Break****Biomedical Instrumentation****17:15** Didi Delalic, MD: "Use of Artificial Intelligence for Point Of Care Ultrasound Education and Facilitation in Emergency Medicine" (Clinical Hospital Merkur)**Veterinary engineering session****17:25** Professor Matthew Allen, Ph.D.: "Surgical Navigation in Total Joint Replacement in Animals" (University of Cambridge, UK)**17:40** Christopher James, PhD: "Ambulatory monitoring for wellness and diagnosing illness" (School of Engineering, University of Warwick, UK)



02 Saturday, October 19, 2024

Croatian State Archives
Trg Marka Marulića 21, 10000, Zagreb

8:00 Registration

Neuroengineering session

9:00 Hrvoje Budincevic, MD, Ph.D., FEAN, FESO: "Ultrasonography in neurological disorders" (Department of Neurology, Clinical Hospital "Sveti Duh", Croatia)

9:10 Vida Demarin, MD, Ph.D., FAAN, FAHA, FESO, FEAN, FWSO: "Ultrasound Subclinical Markers In Assessing Vascular Changes In Cognitive Decline and Dementia" (Academy of Sciences and Arts, Croatia)

9:25 Assistant professor Sandra Morovic, MD, Ph.D.: "The Role of Digital Tools in Improving Patient Health Outcomes" (Arsano Medical Group, Croatia)

9:35 Latica Friedrich, MD: "Leveraging Technology to Assess Cerebrovascular Risk in Obstructive Sleep Apnea" (Department of Neurology, Clinical Hospital "Sveti Duh", Croatia)

9:45 Vladimira Vuletic, MD, PhD: "DBS technical improvement and outcomes in neurodegenerative diseases" (University Hospital Centre Rijeka)

10:00 Professor Marina Roje Bedekovic, MD, Ph.D.: "Cerebrovascular Neurology and Neurointensive Care 2024: Navigating the Crossroads of Technology" (University Hospital Center)

10:10 Assistant Professor Jelena Bozek, PhD: "Machine learning approaches for neuroimaging" (Faculty of Electrical Engineering and Computing, Croatia)

Medical Robotics

10:20 Filip Suligoj, Ph.D.: "Implementing Machine Vision and Robotics in Modern Medical Practices" (Faculty of Mechanical Engineering and Naval Architecture, Croatia)

10:30 Domagoj Dlaka, MD: "Robotics in stereotactic neurosurgery - our experience with Ronna robotic system" (University Hospital Dubrava, Zagreb)

10:40 Tvrtko Hudolin, MD: "Robotic radical prostatectomy", University Hospital Center Zagreb

Application of surgery in the treatment of ACL session

10:50 Petra Bonacic Bartolin, Ph.D.: "ACL repair techniques as a future gold standard potential" (Imperial College London)

11:05 Lee Herrington PhD MCSP: "Optimization of ACL injuries treatment and harmonization of the rehabilitation protocol with the application of high-tech solutions" (University of Salford)

11:30 Coffee Break

Biomedical Imaging

12:30 Professor Ivica Klapan, M.D., Ph.D.: "Do we have "biomechanics" of the new era in our personalized contactless hand-gesture non-invasive surgeon-computer interaction: does our current technologic advancement represent the future in innovative contactless noninvasive surgery?" (Klapan Medical Group)

Regenerative engineering

12:45 Professor Natasa Kovacic, MD, Ph.D.: "Biomedical Characterization of Osteochondroprogenitors in Inflammatory and Degenerative Joint Disorders" (University of Zagreb School of Medicine, Croatia)

Computational Medicine session

12:55 Associate Professor Alan Jovic, Ph.D.: "How to achieve accurate and interpretable machine learning models for biomedical time series analysis?" (Faculty of Electrical Engineering and Computing, Croatia)

Medical Devices session

13:05 Bruno Cok, mag.ing.mech.: "Design verification for medical devices", (Independent expert for the design of medical devices)

Biomedical Signal Processing

13:15 Associate Professor Zeljka Lucev Vasic, Ph.D.: "Wireless networks based on intrabody communication" (Faculty of Electrical Engineering and Computing, Croatia)

Gynecological session

13:25 Tena Kovacevic Janko, MD: "State-of-the-art ultrasound technology in fetal diagnosis and treatment", (Polyclinic Dr. Tena Kovacevic, Croatia)

13:35 Tricia Adjei, Ph.D.: "FemTech Innovations", (Imperial College London, United Kingdom)

13:45 Lunch break

Biomaterials

14:30 Vladimir Prpic, DMD, PhD, MS "Individualized Biodegradable Scaffold for Alveolar Bone Augmentation" (University of Zagreb School of Dental Medicine)

Congress Closing Lecture

14:40 Mario Medvedec: "Recent Milestones of Biomedical Engineering Profession in Croatia" (University Hospital Centre Zagreb)

Session of young researchers

14:50 Josipa Lipovac: "Strain-level metagenomic analysis" (Faculty of Electrical Engineering and Computing, Croatia)

14:55 Krunoslav Jurcic: "Towards better activity and state detection using sensor signal analysis" (Faculty of Electrical Engineering and Computing, Croatia)

15:00 Tomislav Balen: "Characterization of early markers of osteoarthritis" (University of Zagreb School of Medicine, Croatia)

15:05 Miha Keber: "Natural Language Processing from Neuro-symbolic AI Viewpoint" (Faculty of Electrical Engineering and Computing, Croatia)

15:15 Congress closings