	Monday July 15th	Tuesday July 16th	Wednesday July 17th
9:00-10:30	9:00-9:15 - Registration - 9:15-9:30 - Welcome	**Biomechanics - Chairs: Laura Baumgartner, Elham Alizadeh**	**Entrepreneurship & Innovation I - Proposed Chairs: Nuria Brunet, Javier Santamaria**
		9:00-9:25 - BT 06 - **Sandra Elzaguerri Gallardo** - Analyzing the influence of bone changes on the knee bone-cartilage interface during gait using finite element models	9:00-9:25 - BT 33 - **Ariadna Plans Bellavista** - Efficient Healthcare Resources Management in ASSIR: Powering Coordination for Quality Success in the Centres de Sexe i Reproducció de Catalunya
	9:30-10:30 - Opening Conversation - **Zina Jarrahi Cinker**, PhD, Director General MATTER, Creator PUZZLE X Barcelona	09:30-09:55 - BT 07 - **Marc Torres Vila** - Model validation of Subperiosteal Implants (SI) with Finite Element Analysis (FEA)	9:30-9:55 - BT 34 - **Ariadna Quingles Lamarca** - A Proof-of-Concept for the "MedTech Tiberina" Platform: Facilitating Access to Latest Catalan Biomedical Engineering Information
		10:00-10:25 - BT 8 - **Natàlia Franco Monteagudo** - Design of a prosthetic device for transmetatarsal partial foot amputation type	10:00-10:25 - BT 35 - **German Anashkin Kachalin** - Market analysis and prototype validation for TransCOR
10:30-11:00	**Coffee**	**Coffee**	10:30-10:55 - BT 36 - **Pol Guash Roig** - Implementation of Intellectual Property Protection Strategy and Regulatory Roadmap for TransCor: A Web-based Data Analysis Platform for Support in Clinical Decision-making in Cardiology
11:00-13:00	**Signal Analysis - Chairs: Gorka Zamora, Murat Demirtas (TBC)**	**Neuroscience - Chairs: Demetrio Ferro, Marc Grau**	**11:00-11:30 Coffee**
	11:00-11:25 - BT 09 - **Alba Pi Mas** - Phase and Morphology Analysis of Cerebral Blood Flow Signals for Intracranial Pressure Characterization	11:00-11:25 - BT 21 - **Jan Cases Gendra** - A Novel Biophysical Whole-Brain Model Explains Power Spectrum Alterations of Serotonergic Psychedelics Using Multimodal Neuroimaging	**Entrepreneurship & Innovation II - Chairs: Antoni Ivorra, Sikha Okkath**
	11:30-11:55 - BT 10 - **Pau Boncompte** - Task Engagement Modulation in the Primary Visual Cortex: A Layer and Frequency-Specific Analysis	11:30-11:55 - BT 22 - **Zaid Al Hakioui** - How synaptic transmission influences the dynamics of populations of spiking neurons	11:30 - 11:55 - BT 39 - **Gonzalo Plaza Arriola** - Neuroimaging-based machine learning estimation of biological brain age: discovering patterns of brain aging & enriching interventional trials
	12:00-12:25 - BT 11 - **Saioa Elizondo Urrutia** - Prediction of Seizure Onset Zone in epilepsy patients via a network coupling measure	12:00-12:25 - BT 23 - **Marcel Socoró Garrigosa** - Rebalancing the depressed brain: a whole-brain computational study on the effects of external perturbations in psilocybin and escitalopram treatments.	12:00-12:25 - BT 37 - **Mariam Coris Errouich** - Feasibility analysis of a microwave-based device for the diagnosis and monitoring of Rheumatoid Arthritis
	12:30-12:55 - BT 12 - **Joan Prenafeta Ribau** - Characterization of neuronal dynamics in working memory	12:30-12:55 - BT 24 - **Alba Roca de las Heras** - A Multimodal Assessment of Freezing of Gait in Patients With Parkinson's Disease	12:30-12:55 - BT 38 - **Patricia Maria Barrufet Garbayo** - Viability analysis of a microwave-based device for the diagnosis and monitoring of periodontitis and peri-implantitis
13:00-14:00	**Lunch**	**Lunch**	13:00-13:25 - BT 40 - **Núria Blanco i Quintanilla** - Real-time environment monitoring for an artificial placenta system
14:00-16:00	**Cardiovascular - Chairs: Viacheslav Danilov, Gabriele Bernardino**	**Biology - Chairs: Pilar Rivera, Maria Segarra-Queralt**	**13:30-14:30 Lunch**
	14:00-14:25 - BT 18 - **Antoni Cardona Riera** - Computational Fluid Dynamics Analysis of Thrombus Formation in the Left Atrium Post-Heart Transplantation	14:00-14:25 - BT 25 - **Samuel González Castro** - Bacterial cellulose-based scaffolds for cell attachment: a novel approach for tissue regeneration and pseudo-tissues assays	**Imaging - Chairs: Bart Bijnens, Gerard Martí**
	14:30-14:55 - BT 20 - **Marina Ribera Pascual** - Multi-scale model for simulating thrombus formation and anticoagulant treatment	14:30-14:55 - BT 26 - **Paul Mihai Cozmuta Mihut** - Mathematical and computational modelling of a multicellular synthetic associative learning circuit	14:30 - 14:55 - BT 13 - **Esther Guillén Buisán** - Assessing the viability of generating Synthetic 7T MRI scans from 3T Clinical MRI: implications for estimating brain-derived measures in Multiple Sclerosis
	15:00-15:25 - BT 19 - **Eva Maria Ferrer Beltran** - Enhanced Prioritization and Reporting for Coronary Artery Disease Diagnosis	15:00-15:25 - BT 27 - **Roger Torra Vaquero** - Implementation of genetic circuits in Cutibacterium acnes	15:00-15:25 - BT 14 - **Laura Martínez Pérez** - Analysis and quantification of MRI sequences in a mouse model with multiple sclerosis, and correlation of the results with a histopathology study
	15:30-15:55 - BT 17 - **Adriana Royuela Bermúdez** - Artificial intelligence-based algorithm for left ventricular hypertrophy prognosis classification using magnetic resonance imaging cine sequences	15:30-15:55 - BT 28 - **Mariana Alexandra Gomes Del Castillo** - A Novel Genetic Architecture to Enhance Probiotics: Integrating a Thermoinducible Bioswitch with Intermediate Recombinase	15:30-15:55 - BT 41 - **Laura Salort Benejam** - 3D reconstruction of endoscopic tissues by unsupervised neural rendering
16:00-16:30	**Coffee**	**Coffee**	16:00-16:25 - BT 16 - **Irene Freire Barbará** - Development of Software for the Extraction of Omic Features from Radiotherapy Treatment Plans and Application in the Creation of a Predictive Model for 6-Month Progression-Free Survival
16:30-18:30	**Data, Machine learning & Stratification - Chairs: Oscar Camara, Miguel Ángel González Ballester**	**Medical Devices - Chairs: Laura Becerra, Sergio Sánchez**	**Picture + Farewell Apero**
	16:30-16:55 - BT 01 - **Martín Méndez Lopez** - Trajectory Generation Framework for a Upper Limb Impairment dataset	16:30-16:55 - BT 29 - **Aïda Jiménez Ordoñez** - Electromechanical evaluation of novel cardiac resynchronisation therapy pacing techniques in an in silico left bundle branch block population	
	17:00-17:25 - BT 02 - **Arig Kamalmaz Zahir** - Cost-effectiveness analysis of advanced therapies for acute ischemic stroke using the QALY measure through natural language processing	17:00-17:25 - BT 32 - **Nil Palomé Bartrina** - Design of a thoracic arrangement of superficial electrodes to wirelessly power implanted sensors for heart failure remote monitoring	
	17:30-17:55 - BT 03 - **Nerea Berbel Casado** - Deep Learning-based pipeline for automated analysis of fetal echo biometry images	17:30-17:55 - BT 30 - **Anna Barredo Porta** - Machine learning-driven optimization of left atrial appendage occlusion device selection	
	18:00-18:25 - BT 15 - **Selma Ibn Tahar Ben Tahar** - Deep Brain Stimulation electrode localization and computer reconstruction: correlation of activation region with clinical motor improvements	18:00-18:25 - BT 31 - **Laura Triay Jorda** - Designing a Characterization System for Electrospun Patches to treat Aortic Dissections	**CONFIDENTIAL PRESENTATIONS**

Dr. Zina Jarrahi Cinker is a recognized Frontier Tech strategist, condensed matter physicist, MATTERVerse thought leader & Deep Science advocate. She serves as the Director General of MATTER, an international think tank of 30 country chapters, and Chief Creator of PUZZLE X-- the leading international event for Frontier Tech for the future--. PUZZLE X Barcelona supported by the Government of Spain, Generalitat de Catalunya, and Barcelona City Hall--, drives stakeholder dialogues among industry, governments, academia, and capital on how Frontier Technologies can shape the next chapter for cities, citizens, industries, and societies.

Dr. Cinker received a Ph.D. in Condensed Matter Ultrafast Spectroscopy from Vanderbilt University and has spent the past decade helping the materialization of deep science into technologies with broader impact. She previously served as the Executive Director of the U.S. National Graphene Association, the main organization, and body in North America with over 5,000 international members and organizations.