**MSM (11:45-13:15)**  
Medical simulation  
*Chairs: Jerzy Rozenblit & Minsik Hong*

A NOVEL HYBRID AUTOMATON FRAMEWORK FOR MULTI-PHASE EPIDEMIC MODELLING  
Eva Navarro and Nurdan Cabukoglu

APPLICATION OF 3D PRINTING IN THE DEVELOPMENT OF LUMBAR PUNCTURE AND EPIDURAL SIMULATORS  
Lori Lioce, Kim Budisalich, Cooper Gunter, Marquis Myler, Gary Maddux, Ishella Fogle and Bernard Schroer

A RISK ESTIMATION SYSTEM TO PREDICT POSTPARTUM CIGARETTE SMOKING RELAPSE  
Minsik Hong, Jerzy Rozenblit, Alicia Allen, Uma Nair and Sharon Allen

COMBINING CLINICAL AND SOCIAL DETERMINANTS TO IMPROVE DOD/VETERAN WELL-BEING: THE SERVICE MEMBER VETERAN RISK PROFILE  
Richard Hartman and Mark Oxley

HOW MANY COSTLY SIMULATIONS DO WE NEED TO CREATE ACCURATE METAMODELS? A CASE STUDY ON PREDICTING HIV VIRAL LOAD IN RESPONSE TO CLINICALLY RELEVANT INTERVENTION SCENARIOS  
Christopher Lutz, Philippe Giabbanelli, Andrew Fisher and Vijay Mago

**AIS-CNS (11:45-13:15)**  
*Chairs: Joon-Seok Kim & Abdolreza Abhari*

MADES: A UNIFIED FRAMEWORK FOR INTEGRATING AGENT-BASED SIMULATION WITH MULTI-AGENT REINFORCEMENT LEARNING  
Xiaohan Wang, Lin Zhang, Chun Zhao, Yuanjun Laili, Kunyu Xie and Han Lu

AUTOMATICALLY COMBINING CONCEPTUAL MODELS USING SEMANTIC AND STRUCTURAL INFORMATION  
Alexander Freund and Philippe Giabbanelli

PREDICTION OF 5G NEW RADIO WIRELESS CHANNEL PATH GAINS AND DELAYS USING MACHINE LEARNING AND CSI FEEDBACK  
Benjamin Earle, Ala‘a Al-Habashna, Gabriel Wainer, Xingliang Li and Guoqiang Xue

A NOVEL ROUTING PROTOCOL FOR WIRELESS AD HOC NETWORKS BASED ON THE BEHAVIOR OF SLIME MOLD PHYSARUM POLYCEPHALUM  
Hudson Devoe, Nick Gilmet and Hala ElAarag

MODELING REAL-TIME APPLICATION PROCESSOR SCHEDULING FOR FOG COMPUTING  
Mani Sharifi, Abdolreza Abhari and Sharareh Taghipour
ANNSIM’21 Agenda

**MSM (13:45-15:15)**

**Assistive technologies and data analysis**  
*Chairs: Minsik Hong & Jerzy Rozenblit*

ELASTIC REGISTRATION OF MRI SCANS AND RGB-D IMAGES TO IMPROVE SURGICAL PLANNING OF BREAST RECONSTRUCTION  
Bernhard Schenkenfelder, Wolfgang Fenz, Stefan Thumfart, Gerhard Ebenhofer, Gernot Stuebl, David Lumenta, Gernot Reishofer and Josef Scharinger

TOWARDS APPLICATIONS OF THE "SURGICAL GPS" ON ORTHOPEDIC SPINAL PROCEDURES  
Austin Tapp, Ava Maghouli and Michel Audette

EVALUATING AZURE KINECT AND STRUCTURE MARK-III 3D SURFACE SCANNERS FOR CLINICAL CHEST WALL DEFORMITY ASSESSMENT  
Nahom Kidane, Yuzhong Shen and Robert Kelly

MACHINE LEARNING OF DIFFUSION WEIGHTED IMAGING FOR PREDICTION OF SEIZURE SUSCEPTIBILITY FOLLOWING TRAUMATIC BRAIN INJURY  
Akul Sharma, Rachael Garner, Marianna Rocca, Celina Alba, Yenlin Lee, Karina Yang, Maya Brawer-Cohen and Dominique Duncan

DECISION OF LEARNING STATUS BASED ON MODELING OF THE INFORMATION MEASUREMENT OF SOCIAL BEHAVIORAL TASKS IN RHESUS MONKEYS  
Seunghyun Lee, Katalin Gothard and Jerzy Rozenblit

**CPS (13:45-15:15)**

*Chairs: Umut Durak & Claudio Gomes*

INTRODUCTION TO DIGITAL TWIN ENGINEERING  
Hao Feng, Cláudio Gomes, Casper Thule, Kenneth Lausdahl, Alexandros Iosifidis and Peter Larsen

VALIDITY FRAME SUPPORTED DIGITAL TWIN DESIGN OF COMPLEX CYBER-PHYSICAL SYSTEMS  
Bert Van Acker, Joost Mertens, Paul De Meulenaere and Joachim Denil

THE EFFECT AND SELECTION OF SOLUTION SEQUENCE IN CO-SIMULATION  
Emin Inci, Cláudio Gomes, Casper Thule, Kenneth Lausdahl, Jan Croes, Wim Desmet and Peter Gorm Larsen

SYNTHESIZING CO-SIMULATION ALGORITHMS WITH STEP NEGOTIATION AND ALGEBRAIC LOOP HANDLING  
Simon Hansen, Cláudio Gomes, Jaco van de Pol and Peter Gorm Larsen

MODELING SPECTRUM DEPENDENT CHARACTERISTICS OF TRIPLE JUNCTION SOLAR CELLS FOR SOLAR-POWERED AIRCRAFT  
Daniel Ackermann, Nies Reininghaus and Andreas Bierig
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<tr>
<td>COMPUTATIONAL SOCIAL SIMULATION WITH E-CARGO</td>
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<td>A TUTORIAL INTRODUCTION TO COLORED PETRI NETS FRAMEWORK FOR MODEL-DRIVEN SYSTEM DESIGN AND ENGINEERING</td>
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