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Speaker: Prof. Sanja Dogramadzi, Professor of Medical Robotics, University of Sheffield

Title: Physical Human-Robot Interaction - design and safety aspects for dressing and walk support

Abstract: Developing physically assistive robots capable of sit to stand (Chiron project) and dressing assistance (I-DRESS, REASON projects) has the potential to improve the lives of the elderly and disabled population. These types of support is performed in close physical interaction with users who may have a wide range of physical characteristics and abilities. Design of safe, user adaptive and personalized robots in this context is still limited. Different aspects of this assistive robot problem have been investigated – from multimodal feedback that include tactile, verbal and visual cues to hazard analysis in the interactions between the robot and unpredictable environment and user. Our investigations have been based on carefully designed human-human and human-robot experiments to identify the key features that affect these interactions and propose optimal strategies for ensuring safety.

Bio: **Sanja Dogramadzi** is Professor of Medical Robotics at the University of Sheffield and a Director of Sheffield Robotics Institute. She has over 20 years of research experience in surgical, endoscopy and assistive care robots, designing and optimising interactive safe physical robotic systems and working closely with health professionals. Her research exploited soft robot design, dexterity design and control, wearable devices, image-guided control, safety and hazard identification, etc. She has led many EPSRC, EC, NIHR and Innovate UK projects.