

SCIENTIFIC PROGRAMME

and Track Chairs

Biofluid and transport
David Steinman

Molecular biomechanics
Taiji Adachi

Biomechanics Education
Tim McGloughlin

Musculoskeletal
Tammy Haut Donahue

Cardiovascular
Gerhard Holzapfel

Plenary session

Cell biomechanics
Ed Guo

Society session
Michael Walsh

Emerging areas
Niamh Nowlan
and Kristin Myers

**Sport biomechanics, injury
and rehabilitation**
Tamara Reid Bush

Imaging and devices
Marie-Christine Ho Ba Tho

Tissue engineering
Carlijn Bouten

**Locomotion and Human
Movement**
Walter Herzog

PROGRAMME / SUNDAY 8th July 2018

| TIME | Auditorium Level 3 | Liffey B Level 1 | Liffey Hall 1 Level 1 | Liffey Hall 2 Level 1 | Liffey MR1 Level 1 | Liffey MR2 Level 1 | Liffey MR3 Level 1 |
|---------------|---|---|---|--|--|---|---|
| 10:00 - 13:00 | | | | | | | |
| 13:30 - 19:00 | Registration Opens The Convention Centre Dublin | | | | | | |
| 14:30 - 16:00 | Locomotion and human movement | Society Starts at 14:15 ASME Mow/Fung/ Woo/Nerem Awards | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Locomotion and human movement | Biofluid and transport |
| | Locomotion and falling in the elderly 1 | | Brain injury mechanics 1 | Biomechanics of cardiovascular tissues 1 | Ocular biomechanics of aging and disease | Skeletal muscle properties and function during human movement (in vivo muscle properties) | Hyperthermia and heat-mediated transport |
| 16:00 - 16:30 | Refreshment Break | Refreshment Break | | | | | |
| 16:30 - 18:00 | | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Locomotion and human movement | Biofluid and transport |
| | | Challenges of working across scales in patient- and animal-specific cardiovascular modeling | Brain injury mechanics 2 | Biomechanics of cardiovascular tissues 2 | Ocular trauma | ISB Session 1 - Computer simulation of human movement | Cryotherapy and cryopreservation (Boris Rubinsky 70th birthday session) |
| 18:00 - 18:45 | Invited Plenary Jay Humphrey USA | Invited Plenary Toni Arndt Sweden | | | | | |

PROGRAMME / SUNDAY 8th July 2018

| Wicklow Hall 1 Level 2 | Wicklow Hall 2A Level 2 | Wicklow Hall 2B Level 2 | Ecoem Level 2 | Wicklow MR1 Level 2 | Wicklow MR2 Level 2 | Wicklow MR3 Level 2 | Wicklow MR4 Level 2 |
|---|---------------------------------|--|--|--|---|--|---|
| | | | WCB General Assembly Private Meeting | | | | |
| Registration Opens The Convention Centre Dublin | | | | | | | |
| Cell biomechanics | Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue engineering | Imaging and devices | Emerging areas | Molecular biomechanics |
| Mechanics of cell motility 1 | Computational joint mechanics 1 | Mechanics of musculoskeletal growth and adaptation 1 | Population based approaches to computational musculoskeletal modelling | Biomechanics of heart valve tissue engineering | Deformable (statistical and analytical) shape and appearance models in biomechanics 1 | Next generation tissue mechanic approaches: In situ and in patients to self-assembling materials | Molecular dynamics simulation |
| Refreshment Break | | | | | | | |
| Cell biomechanics | Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue engineering | Imaging and devices | Emerging areas | Molecular biomechanics |
| Mechanics of cell motility 2 | Computational joint mechanics 2 | Mechanics of musculoskeletal growth and adaptation 2 | Multiscale biomechanics of paediatric musculoskeletal diseases | Mechanobiology of engineered soft tissue growth and remodeling | Deformable (statistical and analytical) shape and appearance models in biomechanics 2 | Breast health biomechanics | Mechanobiology of cellular actomyosin systems |

PROGRAMME / MONDAY 9th July 2018

| TIME | Auditorium Level 3 | Liffey B Level 1 | Liffey Hall 1 Level 1 | Liffey Hall 2 Level 1 | Liffey MR1 Level 1 | Liffey MR2 Level 1 | Liffey MR3 Level 1 | |
|---------------|--|--|---|--|--|--|--|--|
| 08:20 - 09:00 | Opening Ceremony | | | | | | | |
| 09:00 - 09:45 | Invited Plenary Lori Setton USA | Invited Plenary Takuji Ishikawa Japan | | | | | | |
| 09:55 - 11:25 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Musculoskeletal | Biofluid and transport | |
| | Locomotion and falling in the elderly 2 | Multiscale mechanobiology of vascularisation and atherosclerosis | High rate injury biomechanics 1 | Biomechanics of cardiovascular tissues 3 | Biomechanics of ocular pathologies 1 | Musculoskeletal interfaces | Nanotherapeutics and nanoparticle transport | |
| 11:30 - 12:00 | Refreshment Break and Poster Session Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 12:00 - 13:30 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Musculoskeletal | Biofluid and transport | |
| | Falls – prediction and prevention 1 | Multiscale modeling of vascular and neurovascular diseases | High rate injury biomechanics 2 | Micromechanics of cardiovascular tissues | Biomechanics of ocular pathologies 2 | Multiscale biomechanics of articular degenerative diseases | Cancer microenvironments and tumor transport | |
| 13:30 - 15:00 | Lunch Break and Poster Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 15:00 - 16:30 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Musculoskeletal | Biofluid and transport | |
| | Falls – prediction and prevention 2 | Multiscale mechanics of cardiovascular materials and structures | High rate injury biomechanics 3 | Mechanical thrombectomy for emergent large vessel occlusion in acute ischemic stroke | Computer models of growth and remodeling 1 | Incorporating in vivo load variability in modelling | Microfluidics | |
| 16:30 - 17:00 | Refreshment Break and Poster Session Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 17:00 - 18:30 | Locomotion and human movement | Emerging areas | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Musculoskeletal | Biofluid and transport | |
| | Gait in cerebral palsy: Neuromuscular control versus muscle mechanics 1 | Multiscale models of the cardiopulmonary system | Mechanosensing in injury and pain | Atherosclerotic plaque: Mechanism and modeling | Computer models of growth and remodeling 2 | In vivo bone remodeling mechanics | Vascular, lymphatic, and ocular transport | |
| 18:30 - 20:00 | Welcome Reception The Convention Centre Dublin The Forum (Ground Floor) & Liffey A (Level One) | | | | | | | |

PROGRAMME / MONDAY 9th July 2018

| Wicklow Hall 1 Level 2 | Wicklow Hall 2A Level 2 | Wicklow Hall 2B Level 2 | Ecocem Level 2 | Wicklow MR1 Level 2 | Wicklow MR2 Level 2 | Wicklow MR3 Level 2 | Wicklow MR4 Level 2 |
|---|--|---|---|---|---|--|--|
| Cell biomechanics | Musculoskeletal | Locomotion and human movement | Musculoskeletal | Society | Imaging and devices | Tissue engineering | Molecular biomechanics |
| Computational methods in cell mechanics 1 | Computational joint mechanics 3 | Joint loading during locomotion and human movement (effects on joint and tissue adaptation) 1 | Multiscale biomechanics of age-related bone fractures | Asian-Pacific Association for Biomechanics: The Yamaguchi Medal for Young Investigators | Digital volume correlation strain measurements in biological tissues and biomaterials | TERMIS session: Biomaterials and biomechanics 1 | Connecting molecular interactions and mechanosensing to cell behaviors |
| Refreshment Break and Poster Session Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Cell biomechanics | Musculoskeletal | Locomotion and human movement | Musculoskeletal | Society | Imaging and devices | Tissue engineering | Molecular biomechanics |
| Computational methods in cell mechanics 2 | Human spine, characterization and modeling 1 | Joint loading during locomotion and human movement (effects on joint and tissue adaptation) 2 | Orthopaedic Research Society: Injury and joint degeneration: Initiation, progression and intervention | Société de Biomécanique session: Christian Oddou Award Lecture and Young Investigator Awards | Advanced bioimaging 1 | TERMIS session: Biomaterials and biomechanics 2 | Analytical tools for nanoscale force transduction |
| Lunch Break and Poster Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | Society Meeting 14.00 - 14.45 Société de Biomécanique General Assembly | | Private Meeting USNCB (U.S. National Committee on Biomechanics) | |
| Cell biomechanics | Musculoskeletal | Locomotion and human movement | Musculoskeletal | Society | Imaging and devices | Tissue engineering | Molecular biomechanics |
| Flow-mediated cellular biomechanics 1 | Human spine, characterization and modeling 2 | Joint loading during locomotion and human movement (effects on joint and tissue adaptation) 3 | Quantitative outcome assessment in orthopaedic trials | VPH Institute session: 25 years of physiome | Advanced bioimaging 2 | Biomechanics of vascular tissue engineering | Inter cellular and subcellular force transmission |
| Refreshment Break and Poster Session Group 1 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Cell biomechanics | Musculoskeletal | Locomotion and human movement | Musculoskeletal | Society | Imaging and devices | Tissue engineering | Molecular biomechanics |
| Flow-mediated cellular biomechanics 2 | Human spine, characterization and modeling 3 | Predictive human movement simulation 1 | ESB-ANC multiscale Biomechanics for orthopedics - from molecules to patients | Japan Society of Mechanical Engineers session: Commemorative Lectures on Emerging Technologies for Biomechanics: Beyond the 120th anniversary of the JSME Session runs until 1900 | Biomechanics of soft tissue by Elastography (MRI, US) | Mechanobiology and tissue engineering of the respiratory tract | Nonequilibrium biomechanics - from Molecules to Cells |
| Welcome Reception The Convention Centre Dublin The Forum (Ground Floor) & Liffey A (Level One) | | | | | | | |

PROGRAMME / TUESDAY 10th July 2018

| TIME | Auditorium Level 3 | Liffey B Level 1 | Liffey Hall 1 Level 1 | Liffey Hall 2 Level 1 | Liffey MR1 Level 1 | Liffey MR2 Level 1 | Liffey MR3 Level 1 |
|---------------|---|---|--|--|---|--|---|
| 08:30 - 09:15 | ASME Lissner Award | ESB Perren Award | | | | | |
| 09:20 - 10:50 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Molecular biomechanics | Locomotion and human movement | Biofluid and transport |
| | Gait in cerebral palsy: Neuromuscular control versus muscle mechanics 2 | From physiology to clinics: clinical applications of multiscale modelling of the heart | Head impact biomechanics and head protection 1 | Mechanobiology of heart valves | Molecular force transduction | Predictive human movement simulation 2 | Brain biotransport |
| 10:50 - 11:20 | Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | |
| 11:20 - 12:50 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Sport biomechanics, injury and rehabilitation | Biofluid and transport |
| | Human locomotion in diseased/injured populations - post-stroke | Beyond vFFR: Emerging clinical applications of multiscale vascular biomechanics | Head impact biomechanics and head protection 2 | Cardiac growth and remodeling mechanics | Mechanobiology of tissue development on a chip | Pediatric injury | Biomechanics of the Central Nervous System |
| 12:50 - 14:20 | Lunch Break and Poster Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | |
| 14:20 - 15:05 | Invited Plenary Xavier Trepat Spain | ESB Best Thesis Award | | | | | |
| 15:10 - 16:40 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Sport biomechanics, injury and rehabilitation | Biofluid and transport |
| | Motor control 1 | Multiscale modeling of the Cardiovascular System: Disease development, progression, and clinical intervention | Soft tissue injury mechanics: Skin injuries and wound formation associated with disabilities | Vascular growth and remodeling mechanics | USNCB neuromechanics: Integrating across spatial and temporal scales | Locomotion and human movement energetics in sports 1 | Biotransport diagnostics and therapeutics |
| 16:40 - 17:10 | Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | |
| 17:10 - 18:40 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Sport biomechanics, injury and rehabilitation | Biofluid and transport |
| | Motor control 2 | Biomechanics of the Cardiovascular System: The Tarbell effect (John Tarbell 70th birthday session) | Injuries and tissue mechanics in the lower abdomen | Prosthetic heart valve | Biomechanics for the bedside: A snapshot of recent experimental and modelling trends with clinical impact | Locomotion and human movement energetics in sports 2 | From the microcirculation to large artery flows: Challenges for clinical applications |
| 18:45 - 19:45 | | | | | | | |
| 19:00 - 23:00 | BEDRock Concert The Academy, 57 Abbey Street Middle, Dublin 1 | | | | | | |





PROGRAMME / TUESDAY 10th July 2018

| Wicklow Hall 1 Level 2 | Wicklow Hall 2A Level 2 | Wicklow Hall 2B Level 2 | Ecocem Level 2 | Wicklow MR1 Level 2 | Wicklow MR2 Level 2 | Wicklow MR3 Level 2 | Wicklow MR4 Level 2 |
|---|--|---|--|--|---|--|--|
| Cell biomechanics | Society | Musculoskeletal | Musculoskeletal | Imaging and devices | Society | Society | Tissue Engineering |
| USNCB - Cell mechanosignaling in immunological diseases | European Society of Biomechanics (ESB) Student Award | Shoulder biomechanics 1 | Image-based multiscale modelling of fibrous tissues – tools and theories | Cardiovascular imaging 1 | ASME BED PhD Student Paper Competition - Biomechanics at the Cell, Tissue and Multiscale Level | ASME BED PhD Student Paper Competition - Biotransport, Cryopreservation and Cardiovascular Modelling | Physical regulators and transport cues in tissue engineering |
| Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Cell biomechanics | Society | Musculoskeletal | Musculoskeletal | Imaging and devices | Society | Society | Tissue Engineering |
| Microbial biomechanics | European Society of Biomechanics (ESB) Clinical Biomechanics Award | Shoulder biomechanics 2 | Musculoskeletal biomechanics across the scales | Cardiovascular imaging 2 | ASME BED PhD Student Paper Competition - Musculoskeletal Mechanics | ASME BED PhD Student Paper Competition - Cardiovascular Imaging and Modelling | Mechanobiology and tissue engineering of skin |
| | Society Meeting 13.00 - 14.00 European Society of Biomechanics (ESB) General Assembly | Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | Society Meeting 13.30 - 15.00 NSF Undergraduate Design Competition | Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | |
| Cell biomechanics | Musculoskeletal | Musculoskeletal | Musculoskeletal | Imaging and devices | Society | Society | Tissue Engineering |
| Cell deformation and cell signalling | IVD degeneration / regeneration / repair mechanobiology 1 | Hand and wrist biomechanics 1 | From models to decisions - How musculoskeletal, or statistical, models may inform clinical decision making 1 | Technology innovation in medical devices 1 | ASME BED PhD Student Paper Competition - Sports Biomechanics | ASME BED PhD Student Paper Competition - Cardiovascular Mechanics and Cell Biomechanics | Functional bone and cranio-facial tissue engineering |
| Refreshment Break and Poster Session Group 2 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Cell biomechanics | Musculoskeletal | Musculoskeletal | Musculoskeletal | Imaging and devices | Society | Cell biomechanics | Tissue Engineering |
| Cell biomechanics and oncology 1 | IVD degeneration / regeneration / repair mechanobiology 2 | Hand and wrist biomechanics 2 | From models to decisions - How musculoskeletal, or statistical, models may inform clinical decision making 2 | Technology innovation in medical devices 2 | German Society of Biomechanics session: Experimental Biomechanics including Best Paper Award | Mechanobiology and embryogenesis 1 | Technologies for validation in space and time of multiscale models of tissue engineering |
| | | | | | ASME Open Executive Business Meeting | | |
| BEDRock Concert The Academy, 57 Abbey Street Middle, Dublin 1 | | | | | | | |

PROGRAMME / WEDNESDAY 11th July 2018

| TIME | Auditorium Level 3 | Liffey B Level 1 | Liffey Hall 1 Level 1 | Liffey Hall 2 Level 1 | Liffey MR1 Level 1 | Liffey MR2 Level 1 | Liffey MR3 Level 1 |
|------------------------------|--|--|---|--|--|---|--|
| 08:30 - 09:15 | Invited Plenary Chwee Teck Lim Singapore | Invited Plenary Merryn Tawhai New Zealand | | | | | |
| 09:20 - 10:50 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Emerging areas | Sport biomechanics, injury and rehabilitation | Cardiovascular |
| | Motor control 3 | Cardiac mechanics and heart modeling 1 | The role of multiscale subject-specific models in the planning and monitoring of rehabilitation programmes | Thoracic aortic aneurysms and aortic dissection 1 | Biomedical engineering research and education in Africa | Dual-task, concussion, and sports injuries: Connecting mind and movement to better understand sports injuries | Cardiovascular development |
| 10:50 - 11:20 | Refreshment Break and Poster Session Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | |
| 11:20 - 12:50 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Education | Sport biomechanics, injury and rehabilitation | Biofluid and transport |
| | Motor control 4 | Cardiac mechanics and heart modeling 2 | Multiscale biomechanics of sport and sport injuries | Thoracic aortic aneurysms and aortic dissection 2 | Biomedical engineering education 1 | Advances in rehabilitation technology using virtual reality and perturbations to assess and train gait and balance | Challenges of thrombosis modelling |
| 12:50 - 14:20 | Lunch Break and Poster Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | Society Meeting 13:00 - 14:00 ASME Awards Announcements and Medal Winner Recognition | Lunch Break and Poster Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | |
| 14:20 - 15:05 | Invited Plenary Elazer Edelman USA | Invited Plenary Clemens van Blitterswijk The Netherlands | | | | | |
| 15:10 - 16:40 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Education | Emerging areas | Biofluid and transport |
| | Amputee biomechanics 1 | Cardiac regeneration and healing | Running injuries 1 | Abdominal aortic aneurysms 1 | Biomedical engineering education 2 | Computational challenges in multiscale modelling in biomechanics | Arterial pulse wave mechanics and ventriculo-arterial interaction |
| 16:40 - 17:10 | Refreshment Break and Poster Session Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | |
| 17:10 - 18:40 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Public Engagement | Emerging areas | Biofluid and transport |
| | Amputee biomechanics 2 | Prenatal cardiovascular fluid mechanics and flow mechanobiology | Running injuries 2 | Abdominal aortic aneurysms 2 | Public engagement with biomechanics | Modelling uncertainty and propagation of data for biomechanics systems | Verification, validation and uncertainty quantification in cardiovascular CFD |
| 18:45 - 19:45 | | | | | | | |
| 19:30 Bus Departure 20:00 | Congress Party The Guinness Storehouse | | | | | | |


PROGRAMME / WEDNESDAY 11th July 2018

| Wicklow Hall 1 Level 2 | Wicklow Hall 2A Level 2 | Wicklow Hall 2B Level 2 | Ecocem Level 2 | Wicklow MR1 Level 2 | Wicklow MR2 Level 2 | Wicklow MR3 Level 2 | Wicklow MR4 Level 2 |
|--|---|---|---|---|--|--|--|
| Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue Engineering | Imaging and devices | Cell biomechanics | | Cell biomechanics |
| Bone fracture mechanics (in vitro and in vivo) 1 | Biomimetic implants for articular cartilage repair / regeneration | Mechanics of passive muscle and connective tissue 1 | Multiscale biomechanics of scaffolds 1 | Technology innovation in medical devices 3 | Mechanobiology and embryogenesis 2 | | Cell biomechanics and oncology 2 |
| Refreshment Break and Poster Session Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue Engineering | Imaging and devices | Cell biomechanics | Industry Session 11:20 - 12:50 | Cell biomechanics |
| Bone fracture mechanics (in vitro and in vivo) 2 | Cartilage tribology | Mechanics of passive muscle and connective tissue 2 | Multiscale biomechanics of scaffolds 2 | Technology innovation in medical devices 4 | Mechanogenetics for cell therapy | Medical Image Based Innovations to Improve Patient Care Hosted by Materialise  | Cell interaction with microenvironment 1 |
| Lunch Break and Poster Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | Society Meeting 13.00 - 14.00 German Society of Biomechanics (DGfB) General Assembly | | Society Meeting 13.00 - 14.00 Asian-Pacific Association for Biomechanics Executive Committee Meeting |
| Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue Engineering | Imaging and devices | Imaging and devices | Industry Session 15:10 - 15:55 | Cell biomechanics |
| Bone fracture mechanics (in vitro and in vivo) 3 | Bone-cartilage cross-talk | Tendon, ligament and enthesis biomechanics 1 | Biofabrication for musculoskeletal tissue engineering | Stenting within the Cardiovascular System 1 | Synergy of image-based modeling and model-based imaging for probing biological systems | Outdoor Motion Capture and Musculoskeletal Simulations Hosted by Anybody Technology & Xsens  Industry Session 15:55 - 16:40 IMU Data Quality Control Hosted by Noraxon  | Cell interaction with microenvironment 2 |
| Refreshment Break and Poster Session Group 3 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Musculoskeletal | Musculoskeletal | Musculoskeletal | Tissue Engineering | Imaging and devices | Imaging and devices | Industry Session 17:10 - 17:55 | Cell biomechanics |
| Bone fracture mechanics (in vitro and in vivo) 4 | Bone marrow properties and mechanobiology | Tendon, ligament and enthesis biomechanics 2 | Multiscale biomechanics and modelling of engineered tissues | Stenting within the Cardiovascular System 2 | Nano- and micro-mechanics of biological tissue, biomimetic and bioinspired materials and systems 1 | Markerless Motion Capture – new high performance technology for big data in real world scenarios– Use cases, Accuracy, Case studies Hosted by SIMI  | Mechanotransduction in engineered tissue |
| | | | | | | ASME Student Leadership Council Meeting | |
| Congress Party The Guinness Storehouse | | | | | | | |

PROGRAMME / THURSDAY 12th July 2018

| TIME | Auditorium Level 3 | Liffey B Level 1 | Liffey Hall 1 Level 1 | Liffey Hall 2 Level 1 | Liffey MR1 Level 1 | Liffey MR2 Level 1 | Liffey MR3 Level 1 | |
|---------------|---|--|---|--------------------------------|---|--|--|--|
| 08:30 - 10:00 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Biofluid and transport | Biofluid and transport | Emerging areas | |
| | Human locomotion in diseased/injured populations - osteoarthritis | Congenital heart defects and pediatric cardiology applications 1 | ISB Session 2 - footwear biomechanics | Cerebral aneurysms 1 | Modeling of biofluid transport 1 | Fluid-structure interactions in cardiovascular mechanics 1 | The biomechanics of pregnancy and parturition | |
| 10:00 - 10:30 | Refreshment Break and Poster Session Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 10:30 - 12:00 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Biofluid and transport | Biofluid and transport | Emerging areas | |
| | Mobile monitoring of biomechanical phenomena 1 | Congenital heart defects and pediatric cardiology applications 2 | Automotive safety biomechanics 1 | Cerebral aneurysms 2 | Modeling of biofluid transport 2 | Fluid-structure interactions in cardiovascular mechanics 2 | USNCB global women's health biomechanics | |
| 12:00 - 13:30 | Lunch Break and Poster Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 13:30 - 14:15 | Invited Plenary Julie Steele Australia | Invited Plenary David Elad Israel | | | | | | |
| 14:20 - 15:50 | Locomotion and human movement | Cardiovascular | Sport biomechanics, injury and rehabilitation | Cardiovascular | Biofluid and transport | Biofluid and transport | Emerging areas | |
| | Mobile monitoring of biomechanical phenomena 2 | Mechanical circulatory support | Automotive safety biomechanics 2 | Arterial stiffness and disease | Biolocotion and flows | Airway flows and lung transport 1 | Integrated methods for reproductive biomechanics | |
| 15:50 - 16:20 | Refreshment Break and Poster Session Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| 16:20 - 17:50 | | | Sport biomechanics, injury and rehabilitation | Emerging areas | Imaging and devices | Biofluid and transport | Emerging areas | |
| | | | Biomechanics of sports: Surfing to soccer | Lung biomechanics | Imaging and device biomechanics: Modelling, diagnosis, rehabilitation | Airway flows and lung transport 2 | Multiscale cancer mechanobiology & biomechanics | |
| 18:00 - 18:30 | Closing Ceremony | | | | | | | |

PROGRAMME / THURSDAY 12th July 2018

| Wicklow Hall 1 Level 2 | Wicklow Hall 2A Level 2 | Wicklow Hall 2B Level 2 | Ecozem Level 2 | Wicklow MR1 Level 2 | Wicklow MR2 Level 2 | Wicklow MR3 Level 2 | Wicklow MR4 Level 2 |
|--|---|--|--|---|--|---|---|
| Musculoskeletal | Musculoskeletal | Cell biomechanics | Tissue engineering | Imaging and devices | Imaging and devices | | Tissue engineering |
| Medical device / soft tissue interaction | Biomechanics of musculoskeletal development | Cardiovascular cell mechanics and its role in human disease | Biomechanics of muscle, tendon and ligament tissue engineering | Rehabilitation methods, tools, and devices for shoulder | Nano- and micro-mechanics of biological tissue, biomimetic and bioinspired materials and systems 2 | | Mechanical Issues in Interfacial Tissue Engineering |
| Refreshment Break and Poster Session Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Musculoskeletal | Musculoskeletal | Cell biomechanics | Tissue engineering | Imaging and devices | Imaging and devices | Industry Session 10:30 - 11:15 | Tissue engineering |
| Meniscal mechanics | Sensorimotor function and neuromechanics of joints | Cardiovascular mechanobiology and molecular mechanisms | Biomechanical microengineering of tissue mimics for human disease modeling | Rehabilitation methods, tools, and devices for hand/wrist | Dynamic medical imaging techniques for biomechanics systems 1 | Body (A)symmetries: Is there a Link between Local and Integral Movement Function? Hosted by Kistler  <hr/> Industry Session 11:15 - 12:00 Integrating IMUs with Optical Motion Capture: Clinical and Sporting Applications Hosted by VICON  | Functional tissue engineering of articular cartilage and fibrocartilage |
| Lunch Break and Poster Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Musculoskeletal | Emerging areas | Cell biomechanics | Tissue engineering | Imaging and devices | Imaging and devices | | Tissue engineering |
| Total joint replacements | Biomechanics in nature I, a tribute to Prof R. McNeill Alexander | Cardiovascular cell mechanics, adhesion and mechano-transduction | Biomechanics of pelvic floor / bladder engineering | Rehabilitation methods, tools, and devices for ankle/foot 1 | Dynamic medical imaging techniques for biomechanics systems 2 | | Biofabrication and bioreactors for functional tissue systems 1 |
| Refreshment Break and Poster Session Group 4 The Forum (Ground Floor) & Liffey A (Level 1) | | | | | | | |
| Musculoskeletal | Emerging areas | Cell biomechanics | Tissue engineering | Imaging and devices | Imaging and devices | Musculoskeletal | Tissue engineering |
| Traumatic loading of the spine and/or spinal cord injury | Biomechanics in nature II, a tribute to Prof R. McNeill Alexander | Mechanical regulation of stem cells | General tissue engineering | Rehabilitation methods, tools, and devices for ankle/foot 2 | Patient-specific biomechanical interaction of cardiovascular devices with surrounding tissues | General musculoskeletal biomechanics | Biofabrication and bioreactors for functional tissue systems 2 |