Orthopaedic Research and Learning Centre

International Conference and Course on Orthopaedic Surgery, Biomechanics and Clinical Applications

6 – 9th June 2010

KEYNOTE
The Past Contributions and Future Fate of Clinical Engineers
Prof. Edmund Chao Johns Hopkins University, USA

TRACK CHAIRMEN
Mr. Richard Field South West London Elective Orthopaedic Centre, UK
Prof. Antonio Moroni Rizzoli Orthopaedic Institute Bologna, Italy
Prof. Edmund Chao Johns Hopkins University, USA
Prof. Jian S. Dai King’s College London, UK
Prof. Noam Eliaz Tel Aviv University, Israel
Prof. Sean P. Hughes Imperial College London, UK
Prof. Ofer Levy Brunel University & Reading Shoulder Unit, UK

PROGRAM CHAIRS
Dr. Neriman Ozada Brunel University, UK
Prof. Ibrahim I. Esat Brunel University, UK
Prof. Ofer Levy Brunel University & Reading Shoulder Unit, UK

+150 scientific paper presentations

For submissions and registration please visit: http://www.brunel.ac.uk/about/acad/sed/conf/obcas
Abstract proceedings will be published in the Journal of Biomechanics
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<th>Track Title</th>
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| **Joint and Musculoskeletal System Biomechanics, Surgery and Simulation** | Prof. Edmund Chao, Johns Hopkins University, USA  
Dr Chunfeng Zhao, Mayo Clinic, USA  
Prof. Edmund Chao, Johns Hopkins University, USA  
Prof. Peter Walker, New York University, USA |
| **Biomaterials and Coating of Implants** | Prof. Noam Eliaz, Tel Aviv University, Israel  
Dr. Sylwia Sobieszczyk, Gdansk University of Technology, Poland  
Prof. Aldo Boccaccini, Imperial College London, UK  
Prof. Ramón Torrecillas, Fundación ITMA Parque Tecnológico de Asturias, Spain |
| **Spine and Intervertebral Disc** | Prof. Sean P. Hughes, Imperial College London, UK  
Dr Sally Roberts, Keel University, UK  
Prof. Judith Hoyland, Manchester University, UK  
Prof. Sean P. Hughes, Imperial College London, UK |
| **Robotic, Haptics and Computer Assisted Surgery** | Prof. Jian S. Dai, King's College London, UK |
| **Upper Limb Surgery and Clinics** | Prof. Ofer Levy, Brunel University & Reading Shoulder Unit, UK  
Prof. Ofer Levy, Brunel University & Reading Shoulder Unit, UK  
Mr. Jai Relwani Kent, UK  
Prof. Ofer Levy, Brunel University & Reading Shoulder Unit, UK |
| **Lower Limb Surgery and Clinics** | Prof. Antonio Moroni Rizzoli Orthopaedic Institute, Italy  
Prof. Burkhard Wippermann, Chefarzt der Klinik für Unfall- und orthopädische, Germany  
Prof. Antonio Moroni, Rizzoli Orthopaedic Institute, Italy  
Dr. Oliver Marin-Pena, Hospital Infanta Leonor, Spain |
ORTHOPAEDIC BIOMECHANICS, SURGERY, IMPLANTS AND CLINICAL APPLICATIONS

Metal-on-metal hip resurfacing
Dr. Tom Joyce, Newcastle University, UK
Muscular force transmission and remedial surgery Dr. Can A. Yucesoy, Bogazici University, Turkey
ACL reconstruction: Biomechanics and fixation Mr. Martyn Snow, Royal Orthopaedic Hospital, UK

COMPUTER AIDED TECHNIQUES AND MODELLING IN ORTHOPAEDIC SURGERY AND ROBOTICS

Computer-assisted surgery of the Knee Dr. Nanne P. Kort, Orbis Medical Center, Netherlands
Clinical orthopaedic surgery supported by computer aided techniques: Future perspectives Prof. K. Fredrik Almqvist, Ghent University Hospital, Belgium
Numerical Methods in Biomechanics of Bone and Lower Limb Dr. Daniel Kluess, University of Rostock, Germany

JOINT AND MUSCULOSKELETAL SYSTEM BIOMECHANICS, SPORT AND INJURY BIOMECHANICS

Shoulder joint biomechanics Prof. Garth Johnson, Newcastle University, UK
Control, simulation and analysis of human neuromusculoskeletal system Dr. Emel Demircan, Prof. Oussama Khatib, Stanford University, USA
Hip and knee kinematics and kinetics Prof. John Leicester Williams University of Memphis, USA
Biomechanics and diagnostic techniques of lower limb joints Prof. Bin Wang, University of Aberdeen, UK
The muscular link between movement and pathology in sports injury Dr. Dylan Morrisey, Queen Mary University of London, UK
Biomechanics of lower limb joints Dr. Cathy Holt, Cardiff University, UK

LOWER LIMB JOINT BIOMECHANICS AND SIMULATION Prof. John Rasmussen, Aalborg University, Denmark

BIOMATERIALS AND BIOLOGICAL MATERIALS-TISSUE BIOMECHANICS AND MODELLING

Bone Mechanics Dr. Can A. Yucesoy, Bogazici University, Turkey
Cements in orthopaedic surgery Dr. Sanjukta Deb, Kings College, London UK
Biomaterials & Tribology Prof. Andrzej Zielinski, Gdansk University of Technology, Poland

DESIGN, DEVICES, INSTRUMENTATION AND IMPLANTS

Biosurgical devices, methods and modelling Dr. Mahmoud Chizari, Brunel University, UK
Design and simulation Dr. Emrah Gumus, Texas Tech University, USA

COMPANY DEMONSTRATIONS, WORKSHOPS AND CONFERENCE SESSIONS

Glenoid fixation of lateraled reverse shoulder prosthesis – DJO
3D Knee – An ACL substituting Design – DJO
Gait Course: Codamotion GaitLab Session – Charnwood Dynamics Ltd.
The Codamotion System – Charnwood Dynamics Ltd.
• System Configuration
• Marker Placement and Static Anatomical Measurements
• Data Capture Procedure, Reporting and Model Generation from 3D Image Data for Biomechanics Applications – Simpleware Ltd.
Imaging, Biomechanics and Simulation – Simpleware Ltd.
Model Generation Software Demonstration – Simpleware Ltd.
The Equinoxe Integrated Shoulder System – Sawbone Workshop – Exactech
Platelet Rich Plasma in Sports Medicine – Exactech
CR Slope with the Optetrak Knee System – Exactech
PLENARY TALKS AND SPEAKERS

Hip resurfacing: The past, the present and the future
Prof. Antonio Moroni, Rizzoli Orthopaedic Institute, Italy

Orthopaedic implant development – 25 years of trials and tribulations
Mr. Richard Field, South West London Elective Orthopaedic Centre, UK

Electrocrytallization of calcium phosphates for orthopaedic implants
Prof. Noam Eliaz, Tel Aviv University, Israel

Paradigms and Progress in Trauma and Orthopaedics
Mr. Mike Kimmons, CEO British Orthopaedic Association, UK

Using multibody dynamics to design total knee implants
Prof. John Leicester Williams, University of Memphis, USA

Robots and the human
Prof. Oussama Khatib, Stanford University, USA

Harnessing mechanobiology to deliver skeletal regeneration
Prof. Allen Goodship, UCL, UK

Signature procedure with the TKA
Dr. Nanne P. Kort, Orbis Medical Center, Netherlands

Myofascial force transmission has major implications for remedial surgery
Dr. Can A. Yucesoy, Bogazici University, Turkey

Bioactive load-bearing implants
Prof. Andrzej Zieliński, Gdańsk University of Technology, Poland

Radiographic assessment of kinematics in healthy and replaced joints
Prof. Scott Banks, University of Florida, USA

Bone graft substitutes
Mr. Lester Wilson, Royal National Orthopaedic Hospital Trust, UK

Correctional techniques for adolescent idiopathic scoliosis
Mr. Stewart Tucker, The Wellington Hospital, UK

A technological chip on my shoulder
Prof. Lennard Funk, Salford University, UK

The role of computer navigation in assessing knee kinematics during total knee replacement
Mr. Ajeya Adhikari, The South West London Elective Orthopaedic Centre, UK

Objective classification of healthy and pathological joint function and its application to the assessment of joint replacements
Dr. Cathy Holt, Cardiff University, UK

From theory to practice: transfer of FEA results into clinical application
Dr. Daniel Kluess, University of Rostock, Germany

Clinical implications of stem cells in back pain
Prof. Sean P. Hughes, Imperial College London, UK

Carbon nano-tube containing macroporous alumina ceramics for enhanced biological filtration against viruses and bacteria
Dr. Cengiz Kaya, Yildiz Technical University, Turkey

Tendons: Mirrors of inner health
Prof. Nicola Maffulli, Queen Mary University of London, UK

Non fusion techniques for lumbar disc degeneration
Mr. Sashin Ahuja, University Hospital of Wales & University Hospital Llandough, UK

Hip Arthroscopy – an emerging technique and indications
Mr. Udi Rath, Ben Gurion University, Beer Sheva, Israel

Shoulder Arthroplasty past present and future
Prof. Ofir Levy, Brunel University, UK

Shoulder Surgery – a perspective of 40 years
Mr. Stephen Copeland, Reading Shoulder Unit, UK
UPPER LIMB SURGERY AND BIOMECHANICS
Organised and Chaired by Prof. Ofer Levy Brunel University, UK
Chaired by Mr. Mark I. Loebenberg Tel Aviv University School of Medicine, Israel
Advances in elbow arthroplasty Mr. Mark I. Loebenberg Tel Aviv University School of Medicine, Israel
Current Management of Clavicle Injuries Mr. Mark I. Loebenberg Tel Aviv University School of Medicine, Israel
Total wrist arthroplasty Dr. Zulfi Rahimtoola Reading Orthopaedic Centre, UK
Limited fusion of the wrist Dr. Zulfi Rahimtoola Reading Orthopaedic Centre, UK
Treatment of the arthritic wrist Dr. Zulfi Rahimtoola Reading Orthopaedic Centre, UK
Anatomy and pathology of the Acromio-clavicular joint Mr. Joydeep Sinha London Bridge Hospital, UK
Clinical applications of biomechanics principles in shoulder arthroplasty Mr. Giuseppe Sforza Worcester & Reading Shoulder Unit, UK
Management of massive RCT and cuff arthropathy (Verso) Prof. Ofer Levy Brunel University & Reading Shoulder Unit, UK
Role of navigation in shoulder arthroplasty Mr. Jai Relwani Kent, UK
Clinical applications of shoulder Biomechanics in day to day practice Prof. Ofer Levy Brunel University & Reading Shoulder Unit, UK

SPINE SURGERY AND INTERVERTEBRAL DISC
Organised and chaired by Prof. Sean P. Hughes Imperial College London, UK
Mr John E. Nixon The London Clinic, UK
Imaging of the spine What’s the best way of finding the problem in the spine? Can we afford it? Professor Philip Gishen
Surgical navigation of the spine How accurate is it? Isn’t it like losing control of surgery to a computer or robot? Mr Kevin O’Neill
Minimal intervention surgery Can it all be done down a tube? Can any spinal surgeon achieve this given appropriate training? Mr Khai Lam, London Spine Centre, UK
The intervertebral disc When the disc has failed is it better to:
a) Remove it and Fuse it? Mr David Harrison, The Royal National Orthopaedic Hospital, UK
b) Replace it with a New Prosthetic Disc? Mr Ian Shackleford
c) Discussion
Aspects of spinal fusion surgery Mr. Lester Wilson, Royal National Orthopaedic Hospital, UK
Surgical Management of cervical spine fractures Mr. Sashin Ahuja, University Hospital of Wales & University Hospital Llandough, UK
Surgery for thoracolumbar spinal trauma Mr. Stewart Tucker The Wellington Hospital, UK
## Joint Preserving Hip Surgery

**Half a day course**

Organised and chaired by Mr. Richard Field, South West London Elective Orthopaedic Centre, UK

- **History, symptom patterns and physical signs of early stage hip disease** Mr. Richard Field, South West London Elective Orthopaedic Centre, UK
- **Radiological investigations of hip pain** Dr. Rene Tayar, Epsom & St Helier NHS Trust, UK
- **Treatment options for early stage hip disease – The role of physiotherapy** Mr. Alex Manos, Pure Sports Medicine, London
- **Treatment options for early stage hip disease – The role of injections** Dr. Francesco Strambi, Sienna, Italy & South West London Elective Orthopaedic Centre, UK
- **Treatment options for early stage hip disease – The role of hip arthroscopy** Mr. Vikas Khanduja, Addenbrooke’s Hospital, Cambridge UK
- **Treatment options for early stage hip disease – The role of open surgery** Mr. Johan Witt, University College, London UK
- **Computer Simulation for early intervention surgical training** Dr. Richie Gill, Oxford University, UK
- **Prehab/Rehab – The role of physiotherapy for surgical patients** Mr. Alex Manos, Pure Sports Medicine, London UK
- **The economics of surgical treatments for early stage hip disease**
- **Case histories presented by Richard Field, Johan Witt & Vikas Khanduja**

## Pathogenesis of Degenerative Hip Disease

**Half a day course**

Organised and chaired by Mr. Richard Field, South West London Elective Orthopaedic Centre, UK

Is osteoarthritis of the hip ever Idiopathic? Mr. Ib Roushdi, The South West Thames Orthopaedic Training Programme

Imaging the hip joint – How to do it properly Dr. Rene Tayar, Epsom & St Helier NHS Trust, UK

Developmental Hip Conditions – Natural History Mr. Richard Field, South West London Elective Orthopaedic Centre, UK

Femoro-Acetabular impingement Mr. Vikas Khanduja, Addenbrooke’s Hospital, Cambridge UK

New findings on mechanical impingement Mr. Tom Pollard, Nuffield Orthopaedic Centre, Oxford UK

Computer Simulation of Femoro-Acetabular Impingement Dr. Neriman Ozada, Brunel University, UK

The influence of lifestyle Mr. Karthig Rajakulendran, South West London Elective Orthopaedic Centre, UK

Immunological & Biochemical Considerations Prof. Fionula Brennan, The Kennedy Institute, Imperial College, London UK

Economic burden of degenerative hip disease – Is there a case for early treatment?

## Knee and Hip Surgery

Use of Software driven tools in knee arthroplasty Mr. Ajeya Adhikari, The South West London Elective Orthopaedic Centre, UK

The history and evolution of total knee replacements Mr. Vikas Khanduja, Cambridge University Hospitals, UK

Hip resurfacing in patients under 50 Mr. Ronan Treacy, Royal Orthopedic Hospital, UK

How to get really bad results with Metal/Metal bearings! Mr. Ronan Treacy, Royal Orthopedic Hospital, UK

Minimum 10 year follow up of Birmingham Hip resurfacing Mr. Ronan Treacy, Royal Orthopedic Hospital, UK