



34th Annual Meeting of the European Orthopaedic Research Society

www.eors2026.com



EUROPEAN ORTHOPAEDIC
RESEARCH SOCIETY

EORMADRID

Spain

23-24-25 September 2026



ARCO

Association Research Circulation Osseous

23rd International Meeting of Association Research Circulation Osseous | ARCO 2026

International Combined Meeting **EORS-ARCO 2026**

22-23 September 2026



WELCOME LETTER

Dear colleagues and friends,

Orthopaedic research has seen continuous and exciting advancements over the past decades. Contemporary management for arthritic and traumatic disorders depends on improved knowledge and the practical application of these new findings. Therefore, a close collaboration between clinicians and researchers is essential to achieve optimal patient outcomes.

During its General Assembly in 2024, the European Orthopaedic Research Society (EORS) approved Madrid, Spain as the host city for its 34th Annual Meeting, to be held from September 23 to 25, 2026. It is our privilege to welcome you to one of the best events for sharing ideas, fostering learning, and networking in the field of Orthopaedics, not only in Europe but globally.

Driven by the EORS's central aim, this event provides a unique forum where orthopaedic surgeons, biologists, biomechanists, bioengineers, and translational investigators can engage in vital discussions. The ultimate objective is not only to streamline the path of promising findings from the lab to the clinic, but also to identify pressing clinical problems that require further investigation. The program will combine keynote lectures from world-renowned experts with symposia and free paper sessions, all designed to enhance research studies and extract clinically relevant conclusions through dynamic debates. Additionally, poster sessions will provide excellent opportunities to increase the visibility of investigations. We especially encourage new investigators to participate, gain valuable experience, and foster their growth in the field.

Madrid is a vibrant, growing city with excellent facilities. It is currently experiencing significant growth in its demographics, investment, and international standing. The Congress will be held at the Escuela Técnica Superior de Ingenieros Industriales – Universidad Politécnica de Madrid, part of the School of Industrial Engineering. This prime venue is centrally located on the iconic Paseo de la Castellana, near the Santiago Bernabéu Stadium. Attendees will find all accommodations and travel connections exceptionally accessible, ensuring a smooth and enjoyable experience at our venue.

We are very honored to organize our EORS Annual Meeting!

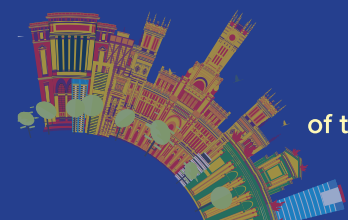
Nos vemos en Madrid!



Eduardo García-Rey, MD, PhD.



Laura Saldaña, PhD.



34th
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of the European Orthopaedic
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23-24-25 September 2026



International Combined Meeting EORS-ARCO 2026

EORSMADRID
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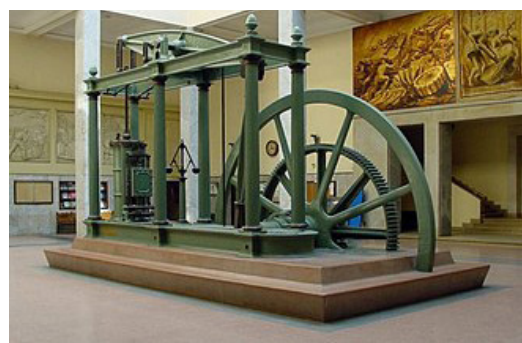
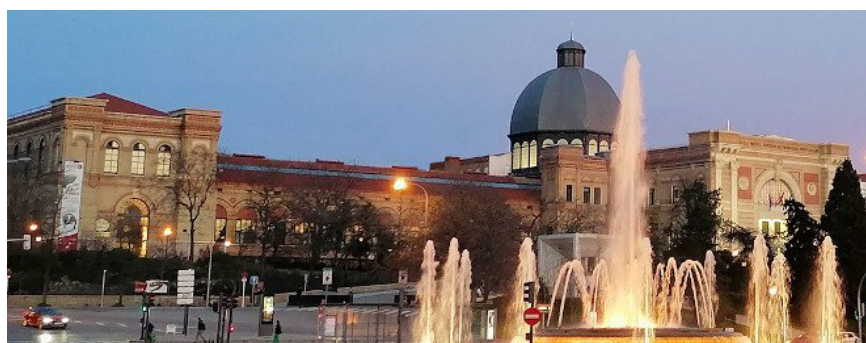
23rd International Meeting of Association Research Circulation Osseous | ARCO 2026
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GENERAL INFORMATION

Venue

UPM School of Industrial Engineering
C. de José Gutiérrez Abascal, 2
Chamartín, 28006 Madrid

The UPM School of Industrial Engineering is one of the most prestigious engineering institutions in Spain. Located in the heart of Madrid, the school stands out for its academic excellence, strong industrial connections, and a long tradition of engineering education and research. Its emblematic building on Paseo de la Castellana provides an ideal location for conferences, with excellent accessibility and modern facilities suitable for large scientific events.



CONGRESS TECHNICAL SECRETARIAT

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PROGRAM AT A GLANCE - ARCO

TUESDAY - 22 SEPTEMBER 2026				
	SALÓN DE ACTOS	AULA C	AULA D	AULA PUIG ADAM
08:00-08:05	OPENING AND WELCOME			
08:05-08:30	GUEST LECTURE Historical Perspective of Osteonecrosis <i>Michael Mont, United States</i>			
08:30-10:00	UPDATES FROM THE EXECUTIVE DIRECTOR AND THE REGIONAL VICE PRESIDENTS OF ARCO What's new in the last 2 years from bench to bedside?			
10:00-10:30	Coffee break and Poster viewing			
10:30-11:30	UPDATE ON CPG ON ONFH			
11:30-12:30	PANEL DISCUSSION Are there differences in preser- vation of the hip in Stage I and II Non-Traumatic ONFH – adoles- cence vs young adult vs older adult			
12:30-13:30	Lunch, Networking and Poster viewing			
13:30-14:00	GUEST LECTURE What really constitutes osteonecrosis of the Knee and what are the treatment options? <i>Quanjun Cui, United States</i>			
14:00-15:00	PANEL DISCUSSION Is hip preservation a viable option in Stage IIIA and IIIB ONFH?			
15:00-16:00	OPEN PAPERS 1 Cells and Molecules			
16:00-16:30	Coffee break and Poster viewing			
16:30-17:30	OPEN PAPERS 2 Imaging and other diagnostic modalities			
17:30-18:30	OPEN PAPERS 3 Treatment outcomes			

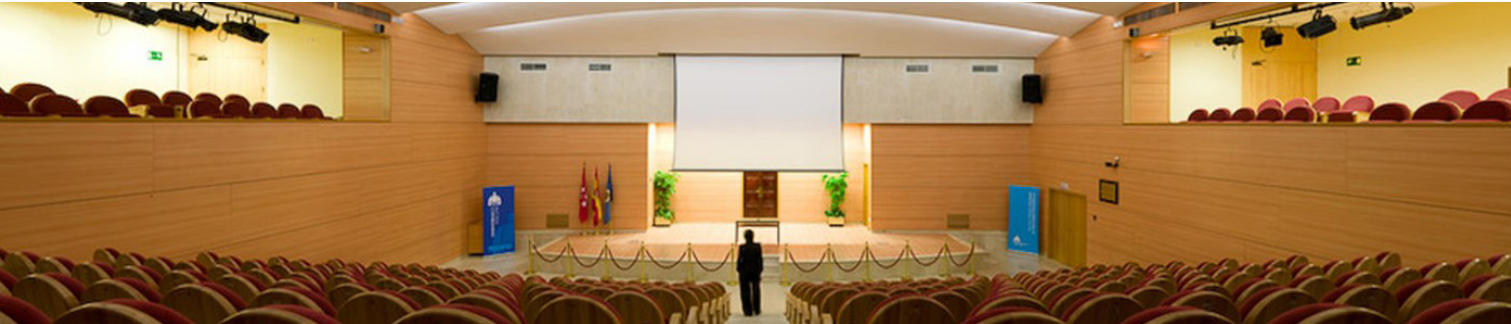
PROGRAM AT A GLANCE - ARCO

WEDNESDAY - 23 SEPTEMBER 2026				
	SALÓN DE ACTOS	AULA C	AULA D	AULA PUIG ADAM
08:00-10:00	CUTTING EDGE RESEARCH AND TREATMENT OF OSTEONECROSIS			
10:00-11:00	PANEL DISCUSSION ARCO and EORS Past Presidents			
11:00-11:20	AWARDS AND CLOSING CEREMONY			



PROGRAM AT A GLANCE - EORS

WEDNESDAY - 23 SEPTEMBER 2026				
	SALÓN DE ACTOS	AULA C	AULA D	AULA PUIG ADAM
11:00-12:00	Registration			
12:00-12:25	Opening and Welcome			
12:30-13:25	TRANSLATIONAL The Importance of Pain in Orthopedic Conditions	BIOENGINEERING / BIOMECHANICS Smart Implants integrating implantable sensors and intelligent analytics: Technologies, Developments and the SMILE project	CLINICAL & BIOENGINEERING Material Solutions to Prevent Orthopaedic Implant Infections	FREE PAPERS Wear & Loosening
13:30-14:25	CLINICAL EHS Session – Bearing Surfaces and Modern Trends in Total Hip Arthroplasty	BIOENGINEERING / BIOMECHANICS Advances in biomechanical models for spinal fusion: challenges and opportunities	TRANSLATIONAL Synovial fluid –The elixir of truth of joint health and disease	SUSTAINABILITY Green Orthopaedics for a sustainable future in the lab and clinic
14:30-15:00	Coffee break, Poster viewing and Exhibition			
15:00-15:25	PLENARY LECTURE Periprosthetic joint infection: How to move forward Enrique Gómez-Barrena			
15:30-16:25	BIOENGINEERING / BIOMECHANICS From Fracture Fixation to Advanced Biomaterials: Mechanics and Innovation in Bone Healing	FREE PAPERS Cartilage & Meniscus I	FREE PAPERS Preclinical	ORAL POSTERS Translational
16:30-17:25	CLINICAL & EDUCATION Bridging gaps in orthopaedics through education, access, and innovation in low income environments	TRANSLATIONAL Uncovering the Gut-Joint axis: The role of gut microbiome and endotoxemia in the arthritic joint	TRANSLATIONAL Extracellular vesicles in musculoskeletal regeneration and repair	FREE PAPERS Artificial intelligence & Digital Medicine
17:30-18:25	BIOENGINEERING BORS-EORS Joint Symposium: Orthopaedic Research Toolkits - Evolving Approaches to Assess Structure-Function in Musculoskeletal Tissues	TRANSLATIONAL FIORS Meets markers of patient outcomes	FREE PAPERS Biomechanics I	
20:00-21:30	Congress Opening and Welcome cocktail at ABC Serrano			
21:30-23:30	New Investigator Social Event			



PROGRAM AT A GLANCE - EORS

THURSDAY - 24 SEPTEMBER 2026				
	SALÓN DE ACTOS	AULA C	AULA D	AULA PUIG ADAM
08:30-09:25	BIOENGINEERING / BIOMECHANICS Organotypic microphysiological systems to study musculoskeletal pathologies and develop regenerative therapies	TRANSLATIONAL PTOA: From initiation to progression	CLINICAL Shaping recovery in osteoarthritis from nutritional risk and joint biology to patient acceptable living	FREE PAPERS Cartilage & Meniscus II - Clinical
09:30-10:25	09:30-09:55 ON/EORS Awards	FREE PAPERS Cartilage Regeneration & Advanced Therapies	FREE PAPERS 3D modelling & Personalized Surgical Planning	FREE PAPERS Infection
	09:55-10:25 EORS/AESCULAP Awards			
10:30-11:00	Coffee break, Poster viewing and Exhibition			
11:00-11:55	BIOENGINEERING / BIOMECHANICS Emerging biofabrication and bioprinting strategies for the engineering of functional musculoskeletal tissues	CLINICAL Clinical Research on Bone Healing and Regeneration	FREE PAPERS Clinical Optimization in Spine and Joint Surgery	FREE PAPERS Inflammation & healing
12:00-12:30	PLENARY LECTURE Challenges of translating orthopaedic research into clinical solutions Geoff Richards			
12:30-13:30	Lunch, Poster viewing and Exhibition			
13:30-14:25	CLINICAL Fixation in THA and TKA	TRANSLATIONAL Stimuli-Responsive Platforms in Regenerative Medicine	BIOENGINEERING / BIOMECHANICS TENET symposium on Recent advances in biomaterials, cell based therapies and other innovative tools for tendon regeneration	FREE PAPERS Advances in Orthopedic Surgery
14:30-15:25	NEW INVESTIGATOR AI and Digitalization: Three POVs, One Future	FREE PAPERS Biomaterials & Tissue Engineering	FREE PAPERS Tendon & Ligament	ORAL POSTERS Bioengineering / Biomechanics
15:30-16:00	Coffee break, Poster viewing and Exhibition			
16:00-16:55	TRANSLATIONAL ORS Spine Symposium Innovation in spine from bedside to bench – What are we missing?	BIOENGINEERING / BIOMECHANICS Mechanobiology in orthopaedics and musculoskeletal regeneration – in vivo, in silico, in vitro	TRANSLATIONAL Fighting infection: Where do we stand? From unmet clinical needs to future solutions?	FREE PAPERS Wearables Technology & Patient activity Tracking
17:00-18:00	EORS General Assembly			
20:00	Networking Event (not included in the registration fee) at Real Casino de Madrid			



PROGRAM AT A GLANCE - EORS

FRIDAY - 25 SEPTEMBER 2026				
	SALÓN DE ACTOS	AULA C	AULA D	AULA PUIG ADAM
08:30-09:25	TRANSLATIONAL The NetwOArk - Building an open European Network on OsteoArthritis research (CA21110)	TRANSLATIONAL From Biomarkers to Bioresorbable Scaffolds: Engineering Orthopaedic Regeneration	BIOENGINEERING / BIOMECHANICS BIOMET4D-EORS: Next-Generation Metallic Additive Manufacturing: From Smart Implants to Advanced Surface Functionalization	FREE PAPERS Experimental Models & Metabolism
09:30-10:25	TRANSLATIONAL The Synovium in Knee Osteoarthritis: From Mechanisms to Therapeutic Opportunities	CLINICAL INVESCOT: Future Challenges in Orthopedic Surgery Research		FREE PAPERS Biomechanics II
10:30-11:00	Coffee break, Poster viewing and Exhibition			
11:00-11:55	BIOENGINEERING / BIOMECHANICS ISTA-EORS Symposium on Current Achievements, New Technologies & Future Perspectives in Total Joint Arthroplasty	CLINICAL Anterior Hip Symposium	TRANSLATIONAL Mapping the Musculoskeletal Microenvironment Through Spatial Omics	FREE PAPERS Biomaterials & Stem Cells
12:00-12:30	PLENARY LECTURE AI gets physical: assessing movement and activity with sensors, implants and vision to improve patient outcomes Bernd Grimm	Lunch, Poster viewing and Exhibition		
12:30-13:30				
13:30-14:25	CLINICAL Precision Disc Degeneration: From Biology to Clinical Translation	TRANSLATIONAL Small Packages, Big Impact: Extracellular Vesicles in Musculoskeletal Health and Disease' - Symposium of the German Musculoskeletal Regeneration Network (MRNet, DGOU)	CLINICAL TOTBID-TOAK: Translational Advances in Orthopaedic Trauma: From Infection Biology to Hip Preservation and Polytrauma Care	ORAL POSTERS Clinical
14:30-15:25	CLINICAL Innovations in Orthopedic Surgery: The fate of 3D Printing, custom made implants and robotics	FREE PAPERS Bone Diseases	FREE PAPERS Cartilage & Meniscus III	
15:30-16:00	Coffee break, Poster viewing and Exhibition			
16:00-16:55	CLINICAL Forte	CLINICAL From Robotic Arthroplasty to Digital Rehabilitation: AI-Enabled Personalization in Care	FREE PAPERS Clinical Hip & Knee	FREE PAPERS Biomechanics & Orthopaedic Surgery
17:00-18:00	Awards and Closing Ceremony			





ARCO MEETING 2026

SCIENTIFIC PROGRAM

SEPTEMBER 22nd-23rd



SCIENTIFIC PROGRAM • TUESDAY, SEPTEMBER 22nd

08:00-08:05 - **SALÓN DE ACTOS**

OPENING AND WELCOME

Stuart B. Goodman, United States

Lynne Jones, United States

Quanjun Cui, United States

08:05-08:30 - **SALÓN DE ACTOS**

Guest Lecture

Chair: Stuart B. Goodman, United States

HISTORICAL PERSPECTIVE OF OSTEONECROSIS

Michael Mont, United States

08:30-10:00 - **SALÓN DE ACTOS**

Updates from the Executive Director and the Regional Vice Presidents of Arco

Chairs: Stuart B. Goodman, United States

Lynne Jones, United States

Quanjun Cui, United States

WHAT'S NEW IN THE LAST 2 YEARS FROM BENCH TO BEDSIDE?

10:00-10:30 Coffee break and Poster viewing

10:30-11:30 - **SALÓN DE ACTOS**

Update on CPG on ONFH

Chair: Quanjun Cui, United States

UPDATE ON CPG ON ONFH

Edward Cheng, United States

11:30-12:30 - **SALÓN DE ACTOS**

Panel Discussion

Chairs: Harry Kim, United States

Daniel Wiznia, United States

ARE THERE DIFFERENCES IN PRESERVATION OF THE HIP IN STAGE I AND II NON-TRAUMATIC ONFH – ADOLESCENCE VS YOUNG ADULT VS OLDER ADULT

Seung-Hoon Baek, South Korea

Edward Cheng, United States

Philippe Hernigou, France

Takashi Sakai, Japan

Yong Feng, China

Dewei Zhao, China

12:30-13:30 Lunch, Networking and Poster viewing

13:30-14:00 - **SALÓN DE ACTOS**

Guest Lecture

Chair: Lynne Jones, United States

WHAT REALLY CONSTITUTES OSTEONECROSIS OF THE KNEE AND WHAT ARE THE TREATMENT OPTIONS?

Quanjun Cui, United States

14:00-15:00 - **SALÓN DE ACTOS**

Panel Discussion

Chairs: Yong-Chan Ha, South Korea

Nobuhiko Sugano, Japan

IS HIP PRESERVATION A VIABLE OPTION IN STAGE IIIA AND IIIB ONFH?

Wataru Ando, Japan

Edward Cheng, United States

Takashi Sakai, Japan

Jirong Shen, China

Daniel Wiznia, United States

Dewei Zhao, China

15:00-16:00 - **SALÓN DE ACTOS**

Open Papers 1

CELLS AND MOLECULES

Chairs: Wataru Ando, Japan

Daniel Wiznia, United States

15:00-15:07

Endothelial-To-Mesenchymal Transition Drives Vascular Dysfunction In Steroid-Induced Osteonecrosis Of The Femoral Head

Xiaoqiang Yang, China

15:07-15:14

Mechanism Of Femoral Head Lymphatic Drainage Dysfunction In Steroid-Induced Osteonecrosis Of The Femoral Head And Interventional Study On The VEGF-C/VEGFR-3 Axis

Baoyi Liu, China

15:14-15:21

Chimeric Osteonecrosis After Allogeneic Or Autologous Repair By Sex-Mismatched Cell Therapy Injection In Hip Osteonecrosis Of Patients With Hematologic Cancer: A Correlative MRI And Histological Study Of 20 Human Specimens

Philippe Hernigou, France

SCIENTIFIC PROGRAM • TUESDAY, SEPTEMBER 22nd

15:21-15:28

Prevention Of Disease Progression With Cell Therapy In Contralateral Hip Osteonecrosis In Patients Undergoing Total Hip Arthroplasty: A Propensity-Score-Matched Cohort Study

Philippe Hernigou, France

15:28-15:35

An Allogeneic, Cryopreservable Pre-Osteoblastic Product Derived From Human Umbilical Cord MSCs Enables Coupled Osteogenesis And Angiogenesis For Vascularized Bone Regeneration

Hyun Sook Park, South Korea

15:35-15:42

Safety And Efficacy Of Cell Therapy Based On Osteoblast Derived From Umbilical Cord Mesenchymal Stem Cells For Osteonecrosis Of The Femoral Head : Open-Label, Phase I Clinical Trial

Seung-Hoon Baek, South Korea

15:42-15:49

Danshenol A Alleviates Steroid-Induced Osteonecrosis Of The Femoral Head: P38/CHOP/GPX4-Mediated Inhibition Of Endothelial Ferroptosis

Jiaru Liao, China

15:49-15:56

BAX/MTORC2-Dependent Mitoxyperilysis Drives Endothelial Collapse In Steroid-Induced Femoral Head Osteonecrosis

Yun Zhu, China

16:00-16:30 Coffee break and Poster viewing

16:30-17:30 - **SALÓN DE ACTOS**

Open Papers 2

IMAGING AND OTHER DIAGNOSTIC MODALITIES

Chairs: Seung-Hoon Baek, South Korea

Takashi Sakai, Japan

16:30-16:37

Construction Of A Three-Dimensional Pathological Model Based On DSA-CT-MRI Multimodal Image Fusion And Its Quantitative Evaluation In ARCO Staging Of Osteonecrosis Of The Femoral Head

Jiawei Ying, China

16:37-16:44

Quantitative Analysis Of Microcirculation Impairment In Osteonecrosis Of The Femoral Head In Relation To ARCO Staging: A Study Based On DSA Hemodynamic Parameters

Jiawei Ying, China

16:44-16:51

Joint Preservation Or Arthroplasty? Imaging-Derived Risk Stratification At The ARCO II-III Threshold In Osteonecrosis Of The Femoral Head: A Systematic Review

Haley Mae Cox, United States

16:51-16:58

Blood Supply Staging Of Osteonecrosis Of The Femoral Head And Its Clinical Application

Dewei Zhao, China

16:58-17:05

Prediction Of Femoral Head Collapse Using Weight-Bearing Lateral View Assessment With Tomosynthesis In Idiopathic Osteonecrosis Of The Femoral Head

Masahiro Numa, Japan

17:05-17:12

Cartilage And Subchondral Bone Discontinuity In ONFH: Pathological Prevalence And Its Role As A Predictor Of THA Conversion

Kuan-Lin Chen, United States

17:12-17:19

The Distribution Of Epiphyseal T2 Hyperintensity On MRI Is Associated With Prognosis In Legg-Calvé-Perthes Disease

Takuji Yamamoto, Japan

17:19-17:26

Lateral Weight-Bearing Sclerotic Rim-to-Necrotic Area Signal Intensity Ratio Predicts Disease Progression In Osteonecrosis Of The Femoral Head

Jie Feng, China

17:30-18:30 - **SALÓN DE ACTOS**

OPEN PAPERS 3

TREATMENT OUTCOMES

Chairs: Masaki Takao, Japan

Yong Feng, China

Dewei Zhao, China

SCIENTIFIC PROGRAM • TUESDAY, SEPTEMBER 22nd

17:30-17:37

**Vascularized Versus Nonvascularized Fibular
Grafting For Osteonecrosis Of The Femoral Head: A
20-Year Comparative Outcome Study**

Seung-Hoon Baek, South Korea

17:37-17:44

**Total Hip Arthroplasty In 125 Hips With End-Stage
Osteonecrosis Of Very Young Patients (<21 Years):
40-Year Follow-Up Period (Range 30 To 50)**

Philippe Hernigou, France

17:44-17:51

**Clinical And Biomechanical Evaluation Of Pedicled
Vascularized Iliac Bone Grafting For Osteonecrosis
Of The Femoral Head: A Multimodal Imaging And
Finite Element Study**

Jirong Shen, China

17:51-17:58

**Radiographic Outcomes Of Prolonged Abduction
Containment Immobilization In Legg-Calvé-Perthes
Disease: A 427-Hip Retrospective Cohort Study And
Systematic Review**

Tiantian Xia, China

17:58-18:05

**Current Status And Risk Factors For Periprosthetic
Joint Infection Following Hip Arthroplasty In
Patients With Osteonecrosis Of The Femoral Head
In Japan**

Takashi Imagama, Japan

18:05-18:12

**Residual Susceptibility To Osteonecrosis Despite
Three-Drug Prophylaxis: Insights From Early
Laboratory Dynamics After Glucocorticoid Initiation
In Systemic Lupus Erythematosus**

Goro Motomura, Japan

18:12-18:19

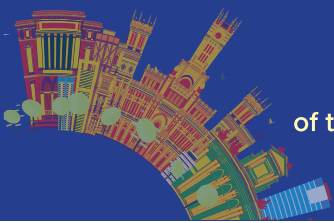
**Biological Adjuncts Do Not Reduce Five-Year
Progression To Total Hip Arthroplasty Following
Core Decompression For Osteonecrosis Of The
Femoral Head**

Annie Lily McDonald, United States

18:19-18:26

**Steroid-Induced Osteonecrosis Is Associated With
Higher Readmission Rates And Costs In Total Hip
Arthroplasty: A Matched Cohort Study**

Quanjun Cui, United States



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SCIENTIFIC PROGRAM • WEDNESDAY, SEPTEMBER 23rd

08:00-10:00 - **SALÓN DE ACTOS**

CUTTING EDGE RESEARCH AND TREATMENT OF OSTEONECROSIS

*Chairs: Quanjun Cui, United States
Lynne Jones, United States*

08:00-08:20

TBC

Lynne Jones, United States

08:20-08:40

Scaffolds for cell/drug delivery for ON – the basics

Ines Lore Hildegard Reichert, United Kingdom

08:40-09:00

The Basic Science of Joint Preservation in Children and Adolescents

Harry Kim, United States

09:00-09:20

Are there biological non-surgical treatments for ON on the horizon?

Stuart B. Goodman, United States

09:20-09:40

Are arthroplasty procedures and outcomes similar between OA and ON?

Eduardo García-Rey, Spain

09:40-10:00

If I only knew 15-20 years ago, what I know now...

Nobuhiko Sugano, Japan

10:00-11:00 - **SALÓN DE ACTOS**

Panel Discussion

ARCO AND EORS PAST PRESIDENTS

*Chairs: Stuart B. Goodman, United States
Yong-Chan Ha, South Korea*

What research needs to be done to mitigate/ eliminate ON?

Edward Cheng, United States

Quanjun Cui, United States

Lynne Jones, United States

Nobuhiko Sugano, Japan

Dewei Zhao, China

11:00-11:20 - **SALÓN DE ACTOS**

AWARDS AND CLOSING CEREMONY

Stuart B. Goodman, United States

Lynne Jones, United States

Quanjun Cui, United States



EORS MEETING 2026

SCIENTIFIC PROGRAM

SEPTEMBER 23rd-25th



SCIENTIFIC PROGRAM • WEDNESDAY, SEPTEMBER 23rd

11:00-12:00

Registration

12:00-12:25 - **SALÓN DE ACTOS**

Opening and Welcome

12:30-13:25 - **SALÓN DE ACTOS**

Symposium 1: Translational

THE IMPORTANCE OF PAIN

IN ORTHOPAEDIC CONDITIONS

Chairs: Joyce McSwan, Australia

Gabriela Graziani, Italy

12:30-12:45

**Understanding Biological Variability Might Lead To
Stratified Pain Care For Patients With Osteoarthritis**

Kristian Kjær-Staal, Denmark

12:45-12:55

The Importance Of Pain In Orthopedic Conditions

Joyce McSwan, Australia

12:55-13:05

**Biomarkers Of Pain And The Relationship With Low
Grade Inflammation, Obesity And Metabolic Disease**

Ali Mobasher, Finland

13:05-13:15

**Bridging the gap between orthopaedic research and
pain research**

Gabriela Graziani, Italy

13:15-13:25

**Linking Autonomic Imbalance, Inflammation, And
Pain In Osteoarthritis**

Zsuzsa Jenei-Lanzl, Germany

12:30-13:25 - **AULA C**

**Symposium 2: Bioengineering /
Biomechanics**

**SMART IMPLANTS INTEGRATING IMPLANTABLE
SENSORS AND INTELLIGENT ANALYTICS:
TECHNOLOGIES, DEVELOPMENTS AND THE
SMILE PROJECT**

Chairs: Tobias Barth, Germany

Bergita Ganse, Germany

12:30-12:45

**More than Titanium - the Intelligence within: Smart
Implants and the SMILE project**

Bernd Grimm, Luxembourg

12:45-12:55

**Integrating Patient and Clinician Perspectives in
Smart Implant Development: European Survey
Insights**

Maike Schnoor, Germany

12:55-13:05

**Long-Term Results from first- and second-generation
Instrumented Fracture Plates assessing Bone Union
over 10 Years**

Tobias Barth, Germany

13:05-13:15

**Technical verification and clinical validity of an
accelerometer-only, low sampling frequency
approach to monitor gait after joint replacement**

Shima Gholinezhad, Denmark

13:15-13:25

**Non-invasive in-vivo bone oxygenation and blood
flow measurements to monitor fracture healing**

Bergita Ganse, Germany

12:30-13:25 - **AULA D**

Symposium 3: Clinical & Bioengineering

**MATERIAL SOLUTIONS TO PREVENT ORTHOPAEDIC
IMPLANT INFECTIONS**

Chairs: Julietta V. Rau, Italy

Iulian Antoniac, Romania

12:30-12:45

**Advanced Implants And Robotic Surgery - Future Of
Joint Replacement In Orthopaedic Patients**

Razvan Ene, Romania

12:45-13:00

**Biodegradable metals and coatings with
antibacterial effects**

Iulian Antoniac, Romania

13:00-13:08

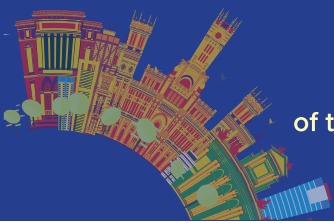
**Resorbable Magnesium Implants With Antibacterial
Surface – REMAGIS Project**

Marco Fosca, Italy

13:08-13:16

**Biological and Synthetic Bone Reconstruction After
Benign Bone Tumor Surgery**

Alexandru Lias Dimitriu, Romania



SCIENTIFIC PROGRAM • WEDNESDAY, SEPTEMBER 23rd

13:16-13:24

Biomaterials Used In Joint Instabilities And Tendon Repairs

Elisa Georgiana Popescu, Romania

12:30-13:25 - **AULA PUIG ADAM**

Free Papers 1

WEAR & LOOSENING

*Chairs: Gema Vallés Pérez, Spain
Stijn Bolink, The Netherlands*

12:30-12:38

Beyond A Quarter-Century: 25-Year Ceramic-On-Ceramic Wear Debris Triggers Only Mild Fibrotic Reactions

Lukasz Lapaj, Poland

12:38-12:46

Characterization Of Wear Debris Following Composite Ceramic Component Failure In Total Hip Arthroplasty

Andrzej Baloniak, Poland

12:46-12:54

Investigating Transcriptomic Changes In Aseptic Loosening Of Replacement Joints Due To Polymeric Wear

Shannon Jamieson, United Kingdom

12:54-13:02

Systemic Metal Exposure Leads To Elevated Circulating Cytokines And Distinct Immune Signatures In Arthroplasty Patients

Anastasia Tavakina, Germany

13:02-13:10

Periprosthetic Fractures Of The Tibia In Knee Arthroplasty Have A High Risk Of Treatment Failure: A Systematic Review

Georgios Tsinaslanidis, United Kingdom

13:10-13:18

Impingement Dictates Damage: Wear Mechanisms And Debris Characterisation Retrieved Mobile-Bearing Unicompartamental Knee Replacements

Lukasz Lapaj, Poland

13:18-13:26

In Vivo Wear And Degradation Of Titanium Nitride-Coated Femoral Heads: A Retrieval Analysis Of 49 Implants

Andrzej Baloniak, Poland

13:30-14:25 - **SALÓN DE ACTOS**

Symposium 4: Clinical

EHS SESSION – BEARING SURFACES AND MODERN TRENDS IN TOTAL HIP ARTHROPLASTY

*Chairs: Laurent Sedel, France
Luigi Zagra, Italy*

13:30-13:45

Are the highly cross-linked polyethylenes fulfilling our expectations?

Claude Rieker, Switzerland

13:45-13:55

Evidence from national arthroplasty registries on current bearing use and performance in THA

Anne Lubbeke, Switzerland

13:55-14:05

The healing process of the capsule after a total hip replacement

Laurant Sedel, France

14:05-14:15

Should we restore the offset in complex developmental hip dysplasia during THA? Clinical and biomechanical implications

Luigi Zagra, Italy

14:15-14:25

Insights in Robotic TKA

Theofilos Karachalios, Greece

13:30-14:25 - **AULA C**

Symposium 5: Bioengineering / Biomechanics

ADVANCES IN BIOMECHANICAL MODELS FOR SPINAL FUSION: CHALLENGES AND OPPORTUNITES

*Chairs: Luigi La Barbera, Italy
Davide Ninarello, Italy*

13:30-13:45

Engineering The Future Of Spinal Fusion: Where Surgeons And Models Converge

Sara Checa, Germany

13:45-13:55

Toward Biodegradable Interbody Cages: In Silico Design, Verification, And Mechanobiological Assessment

Davide Ninarello, Italy

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13:55-14:05

From Radiological Fusion Patterns to Biomechanical Behavior: A Comparative Study of Porous Versus Threaded Titanium Cages in Lateral Lumbar Interbody Fusion

Laura Scaramuzzo, Italy

14:05-14:15

Animal Models In Spine Fusion Research: Defining Their Translational Role

Sandra Reitmaier, Germany

14:15-14:25

Investigating Changes In Von Mises Stress Distribution At Adjacent Endplates Following Single And Dual Level Lumbar Fusion

Farid Amirouche, United States

13:30-14:25 - **AULA D**

Symposium 6: Translational

SYNOVIAL FLUID –THE ELIXIR OF TRUTH OF JOINT HEALTH AND DISEASE

Chairs: Sylvia Nürnberger, Austria

Ivar van Galen, The Netherlands

13:30-13:45

Molecular Endotype Discovery In Osteoarthritis - Data From The STEPUP OA Consortium

Tonia L. Vincent, United Kingdom

13:45-14:00

Translating Synovial Signatures: A Multi Omics Journey Across Species To Understand Osteoarthritis

Mandy Jayne Peffers, United Kingdom

14:00-14:15

Synovial Fluid Bioactivity In Osteoarthritis As A Vector For Intra-Joint Molecular Cross-Talk And Pathogenesis

Tim JM Welting, The Netherlands

14:15-14:25

Decoding Synovial Signals: Proteomics Insights Into Biological Processes After ACL Injury

Sylvia Nürnberger, Austria

13:30-14:25 - **AULA PUIG ADAM**

Symposium 7: Translational

GREEN ORTHOPAEDICS FOR A SUSTAINABLE FUTURE IN THE LAB AND CLINIC

Chairs: Girish Pattappa, Germany

Gabriela Graziani, Italy

13:30-13:45

Global Environmental Impact And Sustainability In Orthopaedics

Denitsa Docheva, Germany

13:45-13:55

A Green Journey Towards Sustainability - The Lab Certification Process

Girish Pattappa, Germany

13:55-14:05

Green materials for biofabrication in orthopaedics: From seashells to bones

Gabriela Graziani, Italy

14:05-14:15

A Framework For Sustainable Biomaterials: Integrating Supply Chains, Hospital Use, And Circularity

Matteo D'Este, Switzerland

14:15-14:25

The Non-Green Side Of Outdoor Sports

Girish Pattappa, Germany

14:30-15:00 **Coffee break, Poster viewing and Exhibition**

15:00-15:25 - **SALÓN DE ACTOS**

INSTITUTIONAL WELCOME AND PLENARY LECTURE

Chairs: Laura Saldaña, Spain

Eduardo García-Rey, Spain

15:00-15:08

INSTITUTIONAL WELCOME

Inmaculada Ibáñez de Cáceres, Director General for Research and Education, Regional Government of Madrid, Spain

15:08-15:25

PERIPROSTHETIC JOINT INFECTION:

HOW TO MOVE FORWARD

Enrique Gómez-Barrena, Spain

15:30-16:25 - **SALÓN DE ACTOS**

Symposium 8: Bioengineering / Biomechanics

FROM FRACTURE FIXATION TO ADVANCED BIOMATERIALS: MECHANICS AND INNOVATION IN BONE HEALING

Chairs: Eduardo García-Rey, Spain

Laura Saldaña, Spain

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15:00-15:15

Biomechanics of bone fracture fixation

Boyko Gueorguiev, Switzerland

15:15-15:30

Bioprinted Constructs With Anti-Nogo-A Antibody Promote Bone And Vascular Regeneration

Maria Chatzinikolaïdou, Greece

15:30-15:38

Primary stability evaluation of an additively manufactured titanium alloy cementless tibia implant with a zrn-multilayer ceramic surface coating under dynamic stair climbing conditions with compression-shear and torsion in human tibiae

Thomas M. Grupp, Germany

15:38-15:46

Coil-Shaped 3D-Printed Nitinol Reinforcements Of ECM Derived Scaffolds For Bone Tissue Engineering Applications

Pedro J. Diaz Payno, Spain

15:46-15:54

Which End-Screw Configuration is the Most Effective to Reduce Peri-Implant Fracture Risk in Distal Femoral Plating? – Insights from Biomechanical Testing

Peter Varga, Switzerland

15:30-16:25 - **AULA C**

Free Papers 2

CARTILAGE & MENISCUS I

Chairs: Denitsa Docheva, Germany

Junning Chen, United Kingdom

15:00-15:08

Role Of APEX1 In Chondrocyte Hypertrophy And Osteoarthritis Progression

Miguel Echanove González De Anleo, Spain

15:08-15:16

Age-Related Changes In Knee Joint Cartilage And Bone: Focus On Collagens

Giulio Gatto, Germany

15:16-15:24

A Comparison Of Physeal And Articular Cartilage Chondrocytes Using Single-Cell RNA Sequencing

Jemma Lilian Falkov, Ireland

15:24-15:32

Human Migratory PiCACs Originate De Novo From Chondrocytes And Could Drive Intrinsic Cartilage Repair

Hayat Muhammad, United Kingdom

15:32-15:40

Neural Remodeling Participates In Cartilage Repair Following Injury

Guihua Tan, China

15:40-15:48

Single-Cell Sequencing Reveals A Senescent Immune Landscape In Bone Marrow Lesions Inducing Articular Cartilage Damage In Osteoarthritis

Pengqiang Lou, China

15:48-15:56

Galectin-9 Induces A Cartilage-Degrading Phenotype In Human Osteoarthritic Chondrocytes

Katharina M. Pichler, Austria

15:30-16:25 - **AULA D**

Free Papers 3

PRECLINICAL

Chairs: Fabrizio Russo, Italy

Kieran Joyce, Ireland

15:00-15:08

Molecular Imaging Of Synovitis And Joint Inflammation As An Early Biomarker In Inflammatory Arthritis

Maria Isabel Menendez Montes, United States

15:08-15:16

Crossing The Growth Plate: Distal Femoral Physeal Response To Intramedullary Nailing In A Porcine Model

Maria Tirta, Denmark

15:16-15:24

Osteoinduction Is Not Enough: BMP-6 Fails To Improve Implant Osseointegration In Vivo

Jürgen Alphonsus, Austria

15:24-15:32

From Gut To Joint: A Dual Pathway In Osteoarthritis And Rheumatoid Arthritis Pathogenesis

María Crujeiras-Sampedro, Spain

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15:32-15:40

Is There An Adrenergic Contribution To Age-Dependent Intervertebral Disc Degeneration In Mice?

Matteo Signor, Germany

15:40-15:48

Chronic Stress Alters Adrenergic Receptor And Corticosterone-Converting Enzyme Expression In Experimental Osteoarthritis

Gundula Rösch, Germany

15:48-15:56

From GWAS To Catalytic Gate: Multi-Omic Causal Inference Identifies ALDH1A2 Sulfenylation As A Molecular Mechanism Of Osteoarthritis

Yosef Sourougeon, Israel

15:30-16:25 - **AULA PUIG ADAM**

ORAL POSTERS

TRANSLATIONAL

Chairs: Girish Pattappa, Germany

Sylvia Nürnberger, Austria

Érica Linda dos Santos Pereira, Portugal

15:00-15:04

Circadian Disruption Impairs Tendon Healing By Flattening Temporal Coordination Of Mechanotransduction And Matrix Remodeling

Yukuan Wu, China

15:04-15:08

Oligofructose Fibre Supplementation Mitigates Diet-Induced Obesity Effects In The Subchondral Bone Of The Shoulder Joint In Female Sprague-Dawley Rats

Darsh Tripathi, Canada

15:08-15:12

The Influence Of Hybrid DLC/EDM Surface Modification On Human Osteoblast And Macrophage Responses

Chiqian Zhang, Germany

15:12-15:16

MiRNA-Seq Analysis Of High Glucose Induced Osteoblasts Provides Insight Into The Mechanism Underlying Diabetic Osteoporosis

Yang Zhang, China

15:16-15:20

Morphological Differences In The Osteochondral Unit Of The Humeral Head: A Comparative Study Across Aquatic, Semi-Aquatic, And Terrestrial Mammals

Marlena Maria Ksiezarczyk, The Netherlands

15:20-15:24

A μ Mass Microplate Platform For 3D Cell Aggregate Culture: A Versatile System Validated Using Chondrosarcoma Cells For Orthopaedic Research

Betzabeth Pereira Herrera, The Netherlands

15:24-15:28

Obesity Exacerbates The Detrimental Effects Of Delayed Repair On Tendon-To-Bone Healing With Lipidomic Alterations After Rotator Cuff Injury In A Rat Model

Yukuan Wu, China

15:28-15:32

Decoupling Phenotype And Function In Culture-Expanded HSSCs: Sequential Sorting And Context-Dependent Effects Of Quercetin

Diana Gessner, Austria

15:32-15:36

Endogenous Glucocorticoid Levels In Human Bone And Their Links To Age, Sex, Genotype, And Skeletal Site

Anna Neumann, Germany

15:36-15:40

Time-Adaptable Alterations Of The Extracellular Matrix During Chondrocyte Dedifferentiation

Wenhao Liu, China

15:40-15:44

Methylprednisolone Attenuates Inflammation-Mediated Degeneration In An Ex Vivo Human Meniscus Culture Model

Graciosa Quelhas Teixeira, Germany

15:44-15:48

Magnesium Degradation Products Modulate Cell Viability And Osteogenic Potential In An In Vitro Hyperglycemic Bone Model Using SCP-1 Cells

Deepa Mishra, Germany

15:48-15:52

Injectable And Bioprintable RGD-Functionalized Hydrogels Support Chondrogenic Differentiation Of Adipose Mesenchymal Stromal Cells

Giovanni D'Atri, Italy

15:52-15:56

The Effect Of Simvastatin On Orthopaedic Biomaterial-Induced Inflammation And Bone Growth

Shannon Jamieson, United Kingdom

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16:30-17:25 - **SALÓN DE ACTOS**

Symposium 9: Clinical & Education

**BRIDGING GAPS IN ORTHOPAEDICS THROUGH
EDUCATION, ACCESS, AND INNOVATION IN LOW
INCOME ENVIRONMENTS**

*Chairs: Jennifer Weiser, United States
Gabriela Graziani, Italy*

16:30-16:45

**An American Perspective on Disparities in Total Joint
Arthroplasty: Are Outcomes Influenced by Race,
Gender, and Socioeconomic Status?**

Mitchell Weiser, United States

16:45-16:55

**Expanding The Bench: Developing Research
Pipelines For Less Advantaged Students In
Orthopaedics**

Jennifer Weiser, United States

16:55-17:05

**Trauma & orthopedics: what can we learn from
practice in developing countries?**

Stijn Bolink, The Netherlands

17:05-17:15

**Low-Cost Custom 3D-Printed Orthopaedic Supports:
From Wrist Braces To Back Exoskeletons**

Mili Shah, United States

17:15-17:25

**A Step Closer To Bringing Idiopathic Scoliosis
Monitoring At Home: A Smartphone App Accurately
Generates Digital Twins In 624 Pediatric Patients**

Paolo Brigato, Italy

16:30-17:25 - **AULA C**

Symposium 10: Translational

**UNCOVERING THE GUT-JOINT AXIS: THE ROLE OF GUT
MICROBIOME AND ENDOTOXEMIA IN THE ARTHRITIC
JOINT**

*Chairs: Gonçalo Barreto, Finland
Shipin Zhang, Switzerland*

16:30-16:45

**Endotoxemia And Intestinal Permeability In Arthritis
Disorders: Data From Large Population Cohorts**

Gonçalo Barreto, Finland

16:45-16:53

**New Approaches For Pharmacological And
Surgical Management Of Endotoxemia Impact On
Osteoarthritis**

Rodolfo Gómez Bahamonde, Spain

16:53-17:01

**Sex Differences In Inflammatory Responses And
Arthritis Development In Wistar Rats Exposed To
Systemic Or Intra-Articular Lipopolysaccharide**

Shipin Zhang, Switzerland

17:01-17:09

**TASTY Trial - Diet Intervention Study In Rheumatoid
Arthritis**

Sofia Charneca, Portugal

17:09-17:17

**Microbiota modulation by fecal microbiota
transplantation in ankylosing spondylitis**

Reetta Satokari, Finland

17:17-17:25

**Large-Scale GWAS Meta-Analysis Identifies Novel
Rheumatoid Arthritis Loci And Improves Risk
Prediction In The Estonian Biobank**

Galadriel Lucia Gala Velazquez Silva, Uruguay

16:30-17:25 - **AULA D**

Symposium 11: Translational

**EXTRACELLULAR VESICLES IN MUSCULOSKELETAL
REGENERATION AND REPAIR**

*Chairs: Martyna Nikody, Germany
Martijn van Griensven, The Netherlands*

16:30-16:45

**Tailoring extracellular vesicles to instruct bone
regeneration**

Debby Gawlitta, The Netherlands

16:45-17:00

**Naïve Human Umbilical Cord-Derived EVs as
a Translational Platform for Tendon and Bone
Regeneration**

Andreas Traweger, Austria

17:00-17:08

**Integrated Secretome And Tissue Proteomics Of
Human Infrapatellar Fat Pad Explant-Based Model
Reveal Compartment-Specific Inflammatory And
Mitochondrial Oxidative Stress Signatures In
Osteoarthritis**

Betzabeth Pereira Herrera, The Netherlands

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17:08-17:16

The Emerging Role Of Cell-Free Regenerative Medicine: Clinical Outcomes Of Exosome Therapy In Early-Stage Knee Chondropathy

Rocco Maria Panzera, Italy

17:16-17:25

Therapeutic Effect Of MSC-Derived Secretome In A Murine Ex Vivo Model Of Spontaneous Disc Degeneration

Graciosa Quelhas Teixeira, Germany

16:30-17:25 - **AULA PUIG ADAM**

Free Papers 4

ARTIFICIAL INTELLIGENCE & DIGITAL MEDICINE

Chairs: Shima Gholinezhad, Denmark

Elif Tuğçe Çil, Turkey

16:00-16:08

Volumetric Quantification Of Acetabular Defects Encountered At Revision Total Hip Arthroplasty

Stuart Callary, Australia

16:08-16:16

The Effect Of QR Code-Supported Digital Patient Education On Anxiety And Treatment Compliance In Patients Undergoing Total Knee Arthroplasty

Muhammed Yusuf Afacan, Turkey

16:16-16:24

HOFFA MRI SIGNAL and texture analysis (Radiomics) predicts combined radiographic and symptomatic progression of knee osteoarthritis

Felix Eckstein, Austria

16:24-16:32

Synthetic Data In Clinical Research: A Systematic Review Revealing A Missed Opportunity In Trauma And Orthopaedics

Simone Castagno, United Kingdom

16:32-16:40

Digital Dictation Duel: When Artificial Intelligence Challenges The Medical Secretary

Jessica Alice Potter, United Kingdom

16:40-16:48

Development And Validation Of An Explainable Artificial Intelligence Model For Predicting Symptomatic Severity In Non-Operative Patients With Lumbar Magnetic Resonance Imaging

Muhammed Yusuf Afacan, Turkey

16:48-16:56

Clinical validation of artificial intelligence (AI) - based cartilage segmentation predicting knee replacement

Felix Eckstein, Austria

17:30-18:25 - **SALÓN DE ACTOS**

Symposium 12: Bioengineering

BORS-EORS JOINT SYMPOSIUM: ORTHOPAEDIC RESEARCH TOOLKITS - EVOLVING APPROACHES TO ASSESS STRUCTURE-FUNCTION IN MUSCULOSKELETAL TISSUES

Chairs: Ines Lore Hildegard Reichert, United Kingdom

Luca Ambrosio, Italy

17:30-17:45

Multimodal assessment of decellularised tendon biological scaffolds

Anthony Herbert, United Kingdom

17:45-17:55

Multimodal approaches in bone and fracture healing research

Esther Wehrle, Switzerland

17:55-18:05

Scaffold and Stem Cell-Driven Regenerative Medicine Platforms

Lucy Di-Silvio, United Kingdom

18:05-18:15

Deciphering Mechanical Roles of Collagen Ultrastructure in Tissue Function and Degeneration

Junning Chen, United Kingdom

18:15-18:25

3D tissue models in orthopaedics

Gabriela Graziani, Italy

17:30-18:25 - **AULA C**

Symposium 13: Translational

FIORS MEETS MARKERS OF PATIENT OUTCOMES

Chairs: Martin Stoddart, Switzerland

Brian Johnstone, United States

17:30-17:45

Sensing Osteoarthritis by Omics

Feza Korkusuz, Turkey

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17:45-17:55

Collagen X breakdown as a biomarker for skeletal growth, pathology and repair

Brian Johnstone, United States

17:55-18:05

miRNA in fracture monitoring

Martin Stoddart, Switzerland

18:05-18:15

Implant Load as a Biomarker: Using Continuous Data to Detect Normal and Disturbed Fracture Healing

Manuela Ernst, Switzerland

18:15-18:25

Circulating Biomarkers To Define Patient Phenotypes In Knee Osteoarthritis and Low Back Pain

Veronica Tilotta, Italy

17:30-18:25 - **AULA D**

Free Papers 5

BIOMECHANICS I

Chairs: Luigi La Barbera, Italy

António Manuel Ramos, Portugal

17:30-17:38

Measuring ankle pressure distribution using piezoresistive sensors

Camilla Laturra, Spain

17:38-17:46

Influence Of ACL Reconstruction Parameters On Ligament Forces And Stress: Combined In Silico And In Vitro Studies

António Manuel Ramos, Portugal

17:46-17:54

Lower Trapezius Transfer Restores Native Shoulder Muscle Excursion Better Than Superior Capsular Reconstruction Following Rotator Cuff Tears:

A Cadaveric Analysis

Farid Amirouche, United States

17:54-18:02

Tibial Slope Results In 'Hyper-Loading' Of The ACL When Axial Compression Is Applied Across The Knee

Petra Bonacic Bartolin, United Kingdom

18:02-18:10

Interlocking Dovetail Osteotomy Improves Torsional Mechanics Across Plate And Nail-Stabilized Intercalary Allograft Constructs: A Finite Element Study

Andreas Møller Kristensen, Denmark

18:10-18:18

High-Precision In Vivo Measurement Of Tibiofemoral Kinematics During Activities Of Daily Living

David Elwyn Williams, United Kingdom

18:18-18:26

Which Configuration Of Protective Plating Is Optimal To Minimize The Risk Of Interimplant Femoral Fractures? – A Biomechanical Study

Dominic Mischler, Switzerland

20:00-21:30

OPENING CEREMONY/COCKTAIL RECEPTION AT ABC SERRANO

21:30-23:30

NEW INVESTIGATOR SOCIAL EVENT

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08:30-09:25 - **SALÓN DE ACTOS**

Symposium 14: Bioengineering / Biomechanics

**ORGANOTYPIC MICROPHYSIOLOGICAL SYSTEMS
TO STUDY MUSCULOSKELETAL PATHOLOGIES AND
DEVELOP REGENERATIVE THERAPIES**

Chairs: Manuela Gomes, Portugal

08:30-08:45

**3D Magnetic Models To Uncover Tendon
Regeneration Mechanisms And For Musculoskeletal
Tumor Modelling And Therapy**

Manuela Gomes, Portugal

08:45-08:55

**Novel Biomimetic 3D In Vitro Bone Model To Study
Osteoporosis**

Elisa Batoni, Italy

08:55-09:05

**Organ-Derived Extracellular Vesicles As Mediators
Of Interorgan Communication In Injury**

Martyna Nikody, Germany

09:05-09:15

**Bridging Endocrinology And Orthopaedics: From
High-Throughput Screening To Personalized
Endocrine Disease Models — Human Animal-Free In
Vitro Approaches For Osteoarthritis**

Kristin Schöler, Portugal

09:15-09:25

**Mechanoinflammatory Modulation Of Gut-Derived
LPS Responses In A Human Synovial Biochip**

Eva Ingeborg Reihs, Austria

08:30-09:25 - **AULA C**

Symposium 15: Translational

PTOA: FROM INITIATION TO PROGRESSION

*Chairs: Johanna Bolander, Germany
Ali Mobasheri, Finland*

08:30-08:45

**Cellular Heterogeneity And Phenotypic Diversity In
Articular Cartilage In The Context Of Post-Traumatic
Osteoarthritis Progression**

Ali Mobasheri, Finland

08:45-08:55

**A Validated Multiscale Model Of The Knee Joint
For Predicting Inflammatory-Driven Osteoarthritis
Progression**

Jérôme Noailly, Spain

08:55-09:05

**PTOA: From Initiation To Progression: Deciphering
Early Immune-Regenerative Mechanisms And
Therapeutic Intervention Opportunities**

Johanna Bolander, Germany

09:05-09:15

**When Movement Goes Wrong: The Biomechanical
Pathway To Post-Traumatic Osteoarthritis**

Nicholas Brisson, Germany

09:15-09:25

**Investigation Of Systemic Post-Traumatic
Osteoarthritis Biomarker Concentration Response To
A Thirty Minute Vigorous Run And The Association
With Knee Joint Loading After Intra-Articular Knee
Injury**

Karl Morgan, United Kingdom

08:30-09:25 - **AULA D**

Symposium 16: Clinical

**SHAPING RECOVERY IN OSTEOARTHRITIS FROM
NUTRITIONAL RISK AND JOINT BIOLOGY TO PATIENT
ACCEPTABLE LIVING**

*Chairs: Tanja Stamm, Austria
Lisa Dorfer, Austria*

08:30-08:45

**Clinical and risk profiles and outcomes of
hospitalized patients in orthopedic surgical wards
worldwide: insights from the nutritionDay
2006-2023**

Michael Hiesmayr, Austria

08:45-08:55

**The Role of Obesity and associated Comorbidities in
Rehabilitation Outcomes of
Patients with Knee Osteoarthritis**

Bibiane Steinecker-Frohnwieser, Austria

08:55-09:05

**Changes In Type II Collagen Biomarkers Depending
On Cholesterol In Early Or Moderate Osteoarthritis
Or After Knee Total Endoprosthesis Surgery**

Bettina Thauerer, Austria

09:05-09:15

**Mechanotransduction drives differential Responses
in healthy and OA Chondrocytes**

Birgit Lohberger, Austria

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09:15-09:25

Patient Perspectives on the Patient Acceptable Symptom State (PASS) in Knee Osteoarthritis – a qualitative Study

Lisa Dorfer, Austria

08:30-09:25 - **AULA PUIG ADAM**

Free Papers 6

CARTILAGE & MENISCUS II - CLINICAL

*Chairs: Martijn van Griensven, The Netherlands
Robert Ossendorff, Germany*

08:30-08:38

Isolated Platelet-Rich Plasma Versus Multimodal Therapy For Knee Chondropathy: A Prospective One-Year Follow-Up Study

Rocco Maria Panzera, Italy

08:38-08:46

Popliteal Hiatus Exposure Index (PHEI): A Novel MRI-Based Radioanatomical Parameter Predicting Rotational Instability Associated With ACL And ALC Injuries

Muhammed Yusuf Afacan, Turkey

08:46-08:54

Isolated Meniscal Surgery In The Paediatric Versus Adolescent Population: Time To Return To Sports And Retear Rate

Georgios Tsinaslanidis, United Kingdom

08:54-09:02

The Duration Of Pain As An Accurate Diagnostic Indicator Of Non-Traumatic Osteonecrosis Of The Femoral Head And Cartilage Degeneration: A Cross-Sectional Study With A Critical Time Threshold 222

Bangning Gu, China

09:02-09:10

Intra-Articular 2.5% Polyacrylamide Hydrogel For Knee Osteoarthritis: 1-Year Results From The LUNA Observational Study

Henning Bliddal, Denmark

09:10-09:18

MRI-Based Association Of Meniscal Degeneration And Cartilage Structural Abnormalities With Symptom Severity In Non-Operative Patients With Knee Pain

Muhammed Yusuf Afacan, Turkey

09:18-09:26

A Three-Cycle Audit Examining The Management Of Meniscal Tears At Whittington Hospital

Charikleia-Chara Vettou, United Kingdom

09:30-09:55 - **SALÓN DE ACTOS**

ON/EORS Awards

Chair: Takanobu Oshima, Switzerland

09:30-09:35

Welcome

Takanobu Oshima, Switzerland

09:35-09:41

From Scaffold to Living Tissue: What Does Cartilage Regeneration Really Need

Sylvia Nürnberger, Austria

09:41-09:43

Reprogramming Osseointegration Pathways with Bioelectronic Implants

Sasza Chyntara Nabilla, United Kingdom

09:43-09:45

Bridging Endocrinology And Orthopaedics: From High-Throughput Screening To Personalized Endocrine Disease Models — Human Animal-Free In Vitro Approaches For Osteoarthritis

Kristin Schüler, Portugal

09:45-09:47

A single intraarticular injection of placental-expanded, mesenchymal-like stromal cells halts progression of experimental primary osteoarthritis

Tazio Maleitzke, Germany

09:47-09:49

Measurement Of Perfusion During Non-Union Bone Fracture Healing By Detecting Ultrasound-Responsive Microbubble Activities

Meng Chen Michelle Li, United Kingdom

09:49-09:55

Discussion & Closing

Takanobu Oshima, Switzerland

09:55-10:25 - **SALÓN DE ACTOS**

EORS/AESCLAP Awards

Chairs: Girish Pattappa, Germany

Thomas M. Grupp, Germany

09:55-10:00

Welcome

Thomas M. Grupp, Germany

10:00-10:02

BRD4-Dependent Metabolomic Programming On Chondrocyte Anabolism

Wei Shiung Lian, Taiwan

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10:02-10:04

PTOA: From initiation to progression: Deciphering early immune-regenerative mechanisms and therapeutic intervention opportunities

Johanna Bolander, Germany

10:04-10:06

Chondrocyte senescence in facet joint cartilage of adolescent idiopathic scoliosis and the therapeutic potential of senolytic drugs

Paolo Brigato, Italy

10:06-10:08

CD31+ Cell Enrichment Enhances Therapeutic Effects of Stromal Vascular Fraction in Experimental Primary Osteoarthritis

Tazio Maleitzke, Germany

10:08-10:10

Targeted Biofilm Disruption In Bone Infections Using Using Ultrasound-Activated Microbubbles For Enhanced Antibiotic Delivery

Aya Ben Issa, United Kingdom

10:10-10:12

Multimodal assessment of decellularised tendon biological scaffolds

Anthony Herbert, United Kingdom

10:12-10:14

Reprogramming Osseointegration Pathways With Bioelectronic Implants

Sasza Chyntara Nabilla, United Kingdom

10:14-10:16

Coil-shaped 3D-printed nitinol reinforcements of ECM derived scaffolds for bone tissue engineering applications

Pedro J.Diaz Payno, Spain

10:16-10:18

Frequency-Dependent Effects of Low-Intensity Pulsed Ultrasound on Chondrogenic Differentiation of Human Adipose-Derived MSCs in RGD-Modified Hydrogels

Giovanni D'Atri, Italy

10:18-10:20

Bacteria-surface Interactions On Nanostructured Orthopedic Coatings Are Modulated By Surface Morphology And Metallic Composition

Danielle Ghezzi, Italy

10:20-10:25

Closing

Girish Pattappa, Germany

09:30-10:25 - **AULA C**

Free Papers 7

CARTILAGE REGENERATION & ADVANCED THERAPIES

*Chairs: Valentina Basoli, Switzerland
Clemens Gögele, Germany*

09:30-09:45

Low-intensity ultrasound as a new perspective technology for cartilage regeneration

Gina Lisignoli, Italy

09:45-09:53

Chondrocyte Senescence In Facet Joint Cartilage Of Adolescent Idiopathic Scoliosis And The Therapeutic Potential Of Senolytic Drugs

Paolo Brigato, Italy

09:53-10:01

Architecture Of Mature Articular Cartilage Hampers A Reparative Response In An Ex Vivo Cartilage Integration Model

Marlena Maria Ksiezarczyk, The Netherlands

10:01-10:09

IMPACT One-Stage Cartilage Cell Transplantation Is Safe, Effective, And Cost-Effective For Large Focal Knee Cartilage Defects

Jasmijn V. Korpershoek, The Netherlands

10:09-10:17

Subchondral Injection Of Human Umbilical Cord Mesenchymal Stem Cells Ameliorates Knee Osteoarthritis By Inhibiting Osteoblast Apoptosis And TGF-Beta Activity

Peijian Tong, China

10:17-10:25

The Niche Decides: Critical Microenvironmental Contribution To Heparin/TGF- β -Directed Mesenchymal Stromal Cell Fate In Neocartilage Formation

Sven Schmidt, Germany

10:25-10:33

A Single Intraarticular Injection Of Placental-Expanded, Mesenchymal-Like Stromal Cells Halts Experimental Primary Osteoarthritis

Tazio Maleitzke, Germany

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09:30-10:25 - **AULA D**

Free Papers 8

3D MODELLING & PERSONALIZED SURGICAL PLANNING

*Chairs: Michael Gasik, Finland
Corrado Ciatti, Italy*

09:30-09:38

Standardizing Implant Positioning In The Rat Tibia Model Using 3D-Printed Surgical Guides: A Comparative, Multi-Stage Evaluation Of Manufacturing Strategies

Jürgen Alphonsus, Austria

09:38-09:46

Upper body posture predicts three-dimensional upright scapula orientation

Daniel Ritter, Germany

09:46-09:54

Kneeview: An Open-Source Repository Of Patient-Specific Knee Geometries And Structured Meshes

Renate Janssen, The Netherlands

09:54-10:02

Management Of Complex Acetabular Defects.

Virtual Comparison Between Standard Prostheses And Customized Solutions, And Evaluation Of Pre-And Postoperative Accuracy:

A Retrospective Clinical-Engineering Study

Andrea D'Amelio, Italy

10:02-10:10

Patient Specific Instruments For Supramalleolar Osteotomies Provide A Precise And Accurate Post-Operative Correction

Cédric Bonte, Belgium

10:10-10:18

Design and pre-planning of a ceramic bone scaffold for a critical calcaneus defect

Nerea Olivera Jurjo, Spain

10:18-10:26

Accuracy Of Femur Surface Reconstruction Using A Compact Statistical Shape Model: Validation Against CT-Derived 3D Meshes

Shima Gholinezhad, Denmark

09:30-10:25 - **AULA PUIG ADAM**

Free Papers 9

INFECTION

*Chairs: Julietta V. Rau, Italy
Lokendra Singh, India*

09:30-09:38

Tuning Laser Parameters To Modulate Inflammation And Bacterial Colonization On Titanium Implants

Ana Alonso Pérez, Spain

09:38-09:46

Safety And Efficacy Of Direct Pedicle Screw Fixation In Infected Vertebrae For Acute Pyogenic Spondylitis: A Retrospective Clinical Analysis

Ningkui Niu, China

09:46-09:54

Flexible Functionalized Electrospun Scaffolds With Enhanced Osteogenic And Antibacterial Capacity

Konstantinos Loukelis, Greece

09:54-10:02

Clinical And Microbiological Profile Of Patients With Prosthetic Joint Infection Of Hip And Knee Arthroplasty: A Descriptive Analysis

Lokendra Singh, India

10:02-10:10

Assessment Of Bacterial Adhesion To 3D-Printed Implant Surfaces: An In Vitro Study

Michaela Maintz, Switzerland

10:10-10:18

Effect Of Surface Functionalization On Cellular Uptake Of Porous Silica Nanoparticles And Antibacterial Effect On Intracellular S. Aureus Reservoirs

Nina Angrisani, Germany

10:18-10:26

Efficacy Evaluation Of Anterior Lesion Resection Combined With Autologous Bone Grafting In The Treatment Of Kyphotic Deformity Secondary To Cervical Tuberculosis

Ningkui Niu, China

10:30-11:00 **Coffee break, Poster viewing and Exhibition**

SCIENTIFIC PROGRAM • THURSDAY, SEPTEMBER 24th

11:00-11:55 - **SALÓN DE ACTOS**

Symposium 17: Bioengineering / Biomechanics

EMERGING BIOFABRICATION AND BIOPRINTING STRATEGIES FOR THE ENGINEERING OF FUNCTIONAL MUSCULOSKELETAL TISSUES

*Chairs: Daniel Kelly, Ireland
Jos Malda, The Netherlands*

11:00-11:15

Biofabrication Strategies For The Engineering Of Functional Osteochondral Tissues

Jos Malda, The Netherlands

11:15-11:25

Biosensors Meet Biofabrication: Opportunities And Challenges Of Electrochemical And Optical Sensing For Next-Generation Tissue Engineering Application

Valentina Basoli, Switzerland

11:25-11:35

Engineering Osteochondral Tissues And Interfaces Through Multimaterial 3D Extrusion Printing

Rita Sobreiro-Almeida, Portugal

11:35-11:45

From Microtissues To Functional Meniscal Grafts: Bioprinting Of Phenotypically Defined Fibrocartilage Microtissues Into Melt Electrowritten Scaffolds To Engineer Regionally Defined Meniscal Grafts

Gabriela Soares Kronemberger, Ireland

11:45-11:55

Biofabricated 3D Tendon Constructs: A New Window into Tendon Physiology and Pathology

Giovanna Della Porta, Italy

11:00-11:55 - **AULA C**

Symposium 18: Clinical

CLINICAL RESEARCH ON BONE HEALING AND REGENERATION

*Chairs: Enrique Gómez-Barrena, Spain
Stuart Goodman, United States*

11:00-11:10

Bone regeneration in osteonecrosis

Stuart Goodman, United States

11:10-11:20

Preclinical studies with biomaterials and ATMPs in bone regeneration

Pierre Layrolle, France

11:20-11:30

Regulatory hurdles in ATMP clinical research in bone regeneration

Concepción Payares, Spain

11:35-11:40

Bone regeneration in non-union

Enrique Gómez-Barrena, Spain

11:00-11:55 - **AULA D**

Free Papers 10

CLINICAL OPTIMIZATION IN SPINE AND JOINT SURGERY

*Chairs: Gianluca Vadala, Italy
Xiaofeng Le, Singapore*

11:00-11:08

Orthospine Fitness: Which Markers Of Musculoskeletal Health Can Explain Complications In Spine Surgery?

Giovanni Barbanti Brodano, Italy

11:08-11:16

SPINESAFE: Integration Of Non-Technical Skills And Human Factors To Improve Safety In Spinal Surgery – Preliminary Observational Results From An Ongoing Study

Giovanni Barbanti Brodano, Italy

11:16-11:24

Comparative Effectiveness And Methodological Credibility Of Exercise-Based Conservative Interventions For Adolescent Idiopathic Scoliosis: An Umbrella Review Of Meta-Analyses

Alejandra Barra Domínguez, Spain

11:24-11:32

Lumbar Muscle Morphology And Composition In Adolescent Idiopathic Scoliosis: A Magnetic Resonance Study

Paolo Brigato, Italy

11:32-11:40

The Effectiveness Of Telerehabilitation In Chronic Low Back Pain: A Randomized Clinical Trial

Fabrizio Russo, Italy

11:40-11:48

Validation Of A Novel Behavioral Pain Scale In A Canine Model Of Intervertebral Disc Degeneration

Luca Ambrosio, Italy

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11:48-11:56

Serum Biomarkers And Bone Mineral Density In Spinal Arthrodesis: A Gender-Based Analysis

Laura Gambari, Italy

11:00-11:55 - **AULA PUIG ADAM**

Free Papers 11

INFLAMMATION & HEALING

Chairs: Holger Jahr, Denmark

Tazio Maleitzke, Germany

11:00-11:08

PhotoBone: Shining A Light On The Benefits Of Photobiomodulation Therapy For Bone Healing

Matteo Arthofer-Lorbek, Austria

11:08-11:16

Modulation Of Thrombospondin 2 Enhances Musculoskeletal Regeneration Following Digit Amputation

Robert Tower, United States

11:16-11:24

Liver-Origin Type 1 Innate Lymphoid Cells Contribute To Bone Regeneration In Distraction Osteogenesis

Zhixian Zong, Hong Kong SAR

11:24-11:32

Macrophage-Targeted L-Lactate Delivery Accelerates Critical-Size Bone Defect Healing By Recapitulating Mechano-Epigenetic Modulation

Rongjie Wu, Hong Kong SAR

11:32-11:40

Myeloid-Specific Role Of The Immunomodulatory Metabolite Itaconate In The Formation Of Trauma Induced Heterotopic Bone

Robert Tower, United States

11:40-11:48

Growth Differentiation Factor 6 (GDF6) Overexpression By CRISPRa-Engineered HEK-293T Cells Stimulates Transient Pro-Inflammatory Responses In THP-1 Macrophages

Ali Mobasher, Finland

11:48-11:56

New Strategies For Musculoskeletal Inflammation: MiR-146a-5p Reduces Inflammation And Enhances Corticosteroid Response

Lorena Zas Veiga, Spain

12:00-12:30 - **SALÓN DE ACTOS**

PLENARY LECTURE

Chair: Gabriela Graziani, Italy

CHALLENGES OF TRANSLATING ORTHOPAEDIC RESEARCH INTO CLINICAL SOLUTIONS

Geoff Richards, Switzerland

12:30-13:30 - **Lunch, Poster viewing and Exhibition**

13:30-14:30 - **SALÓN DE ACTOS**

Symposium 19: Clinical

FIXATION IN THA AND TKA

Chairs: Anne Lubbeke, Switzerland

Eduardo García-Rey, Spain

13:30-13:45

Cementless TKA revisited

Theofilos Karachalios, Greece

13:45-14:00

First trial of a full ceramic total knee replacement

Laurent Sedel, France

14:00-14:10

Evidence from national arthroplasty registries on current fixation use and performance in THA and TKA

Anne Lubbeke, Switzerland

14:10-14:30

Tibia baseplate after cementless TKA. The role of density and load transfer

Fernando Quevedo, United States

14:20-14:30

Additively Manufactured Titanium Implants For Bone Defects And Cementless Solutions In Total Knee Arthroplasty: Novel Design Concepts To Eliminate Cobalt-Chromium And PMMA Bone Cement

Berna Richter, Germany

13:30-14:25 - **AULA C**

Symposium 20: Translational

STIMULI-RESPONSIVE PLATFORMS IN REGENERATIVE MEDICINE

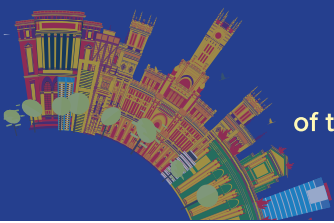
Chairs: Laura Saldaña, Spain

Tiziano Serra, Switzerland

13:30-13:45

Development of a gene therapy-based approach for local bone regeneration

Nuria Vilaboa, Spain



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13:45-13:55

From Cell Patterning to Functional Control: Acoustic Waves Driving Regeneration

Tiziano Serra, Switzerland

13:55-14:05

Remote Magnetic Actuation Enhances Maturation And Assembly Of Cartilage Microtissues

Noam Demri, The Netherlands

14:05-14:15

All-in-one photothermal nanocomposite hydrogel for controlling inducible transgene expression

Rodrigo Serrano Yamba, Spain

14:15-14:25

Wireless Piezoelectric Nano-Stimulation Orchestrates Vascular Endothelial Cell Fate Through PPAR α -PGC1 α -Metabolic Coupling For On-Demand Ischemic Repair

Zhe Liu, China

13:30-14:25 - **AULA D**

Symposium 21: Bioengineering / Biomechanics

TENET SYMPOSIUM ON RECENT ADVANCES IN BIOMATERIALS, CELL BASED THERAPIES AND OTHER INNOVATIVE TOOLS FOR TENDON REGENERATION

Chairs: Manuela Gomes, Portugal

Ana I. Gonçalves, Portugal

13:30-13:45

Biomanufactured Tendon Microphysiological Systems And Nanotools To Probe Multicellular Tendon Mechanobiology

Rui M. A. Domingues, Portugal

13:45-13:55

Engineering Immuno-Active Self-Assembling Peptides For Chronic Inflammation Control And Tendon Regeneration

Jacek K. Wychowaniec, Denmark

13:55-14:05

Innovations In Tendon Repair: From Population Data To Injectable Regenerative Solutions

Manuel Gomez-Florit, Spain

14:15-14:25

A Janus Trilayer Composite Hydrogel With Electroactive Adhesion, Piezoelectric Support, And Anti-Fibrotic Anti-Adhesion Functions For Achilles Tendon Repair

Yongkang Meng, China

13:30-14:25 - **AULA PUIG ADAM**

Free Papers 12

ADVANCES IN ORTHOPEDIC SURGERY

Chairs: José Cordero Ampuero, Spain

Rocco Maria Panzera, Italy

13:30-13:38

Construct Design, Reduction Tolerance And Early Mechanical Failure In Unstable Intertrochanteric Hip Fractures: Dual Integrated-Screw Versus Single-Screw Cephalomedullary Nailing

Alejandra Barra Domínguez, Spain

13:38-13:46

Age-Stratified In-Hospital Outcomes Following Open Reduction And Internal Fixation Versus Reverse Shoulder Arthroplasty For Proximal Humerus Fractures

Mohammad Qusay Yahya, Israel

13:46-13:54

Comparing Outcomes Of Robotic-Assisted Versus Conventional Revision In Total Hip Arthroplasty: A Propensity-Matched National Analysis

Farid Amirouche, United States

13:54-14:02

European Retrospective Multicenter Study In Patients With Vertebral Metastases (Train-Metastra)

Giovanni Barbanti Brodano, Italy

14:02-14:10

Platelet-Rich Plasma In Chronic Ankle Instability: Is Injection Alone Enough? A Randomized Controlled Trial

Elif Tuğçe Çil, Turkey

14:10-14:18

Patient-Specific Instrumentation Improves Surgical Exposure And Component Alignment In Direct Anterior Approach Hip Resurfacing Arthroplasty Without Traction Table

Stefano Negri, Italy

14:18-14:26

The Impact Of Anterior And Postero-Lateral Approach On Acetabular Anteversion And Inclination

Valerio Pace, Italy

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14:30-15:25 - **SALÓN DE ACTOS**

New Investigator Session

AI AND DIGITALIZATION: THREE POV'S, ONE FUTURE

Chairs: Luca Ambrosio, Italy

Gema Vallés Pérez, Spain

14:30-14:45

AI Agents: A Paradigm Shift in Clinical Practice and Research

Juan José Beunza Nuin, Spain

14:45-15:00

Blessing, bait, or bullshit? The promises and perils of AI in academic publishing

Ali Mobasher, Finland

15:00-15:15

One Patient, One Plan: Engineering Personalized Orthopaedic Care

Celia del Peso Ley, Spain

15:15-15:25

Discussion

13:30-14:25 - **AULA C**

Free Papers 13

BIOMATERIALS & TISSUE ENGINEERING

Chairs: Maria Chatz Nikolaidou, Greece

Yassine Maazouz, Switzerland

14:30-14:38

Reengineering 3D Cellular-Scale Stiffness Gradient At The Enthesis With Biomimetic Hydrogels To Promote In Situ Chondrogenesis

Yukuan Wu, China

14:38-14:46

Comparison Of Commercial Hydrogels Injectability For Joints And Soft Tissues Repair

Michael Gasik, Finland

14:46-14:54

A 3D-Printed Fiber-Reinforced Hydrogel For Myotendinous Junction Regeneration Via Microenvironmental Modulation

Dongquan Shi, China

14:54-15:02

Frequency-Dependent Effects Of Low-Intensity Pulsed Ultrasound On Chondrogenic Differentiation Of Human Adipose-Derived MSCs In RGD-Modified Hydrogels

Giovanni D'Atri, Italy

15:02-15:10

A Collagen/Silk Fibroin Composite Scaffold With Biomimetic Porous Structures And Piezoelectric Potential For Cartilage Repair

Jinyi Huang, China

15:10-15:18

Enhanced Osteoclast Activity In Response To A Phosphoserine-Modified Calcium Phosphate Cement

John Redmond, Ireland

15:18-15:26

Magneto-Mechanotransduction: Enhancing Bone Regeneration With Magnetic Nanoparticles

Roberto Sánchez Carrasco, Spain

13:30-14:25 - **AULA D**

Free Papers 14

TENDON & LIGAMENT

Chairs: Karl Morgan, United Kingdom

Denitsa Docheva, Germany

14:30-14:38

Comparing Internal Brace Ligament Augmentation With Anterior Cruciate Ligament Reconstruction: LIBR Study – A Prospective, Multicenter, Single-Blind, Randomized Controlled Trial

Jasper Vandenrijt, Belgium

14:38-14:46

Cyclic Stretch Protocols Modulate Cell Proliferation And Cytoskeletal Architecture In Lapine Achilles Tenocytes And Human Mesenchymal Stem Cells

Clemens Gögele, Germany

14:46-14:54

Aberrant JAK-STAT3 Activation Drives Tenocyte Phenotypic Drift In Tendinopathies

Baptiste De Maleprade, France

14:54-15:02

Hypoxia–Glutamate–Oxidative Stress Vicious Cycle In Rotator Cuff Degeneration

Hyung Bin Park, South Korea

15:02-15:10

Engineering A Versatile Navicular Loading Platform For Zonal Culture Of Equine Enthesis Cells

Giulia Biasi, United Kingdom

15:10-15:18

Uncovering Hippo Pathway ON-State Activation In Tenosynovial Giant Cell Tumor Using 2D And 3D Models

Ana Bárbara Adão, Portugal

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15:18-15:26

Micro-Needling Reactivates Chronic Tendon Stumps By Restoring Microscale Mechanical Heterogeneity And Mechanotransduction

Yukuan Wu, China

13:30-14:25 - **AULA PUIG ADAM**

ORAL POSTERS

BIOENGINEERING / BIOMECHANICS

Chairs: Manuel Gomez-Florit, Spain

Ana I. Gonçalves, Portugal

Stylianos Kechagias, Greece

14:30-14:34

Shoulder Abduction Capacity With Rotator Cuff Tear Progression: A Combined Cadaveric And Musculoskeletal Simulation

Woonhoe Goo, South Korea

14:34-14:38

A Supramolecular Biomimetic Synovial Fluid Resets The Articular Microenvironment Via Multi-Pronged Joint Lubrication And Repair

Xuanqi Peng, China

14:38-14:42

Adoption and evolution of Artificial Intelligence in Orthopaedic Research: A Bibliometric Analysis of EORS Abstracts

José Hernández, Luxembourg

14:42-14:46

Optimisation Of Voronoi Lattices For Mechanical Bone Surrogates

Lauren Gargan, United Kingdom

14:46-14:50

Mechanical Validation Of Patient-Specific Calibrated CT For Assessing Bone Quality In Reverse Shoulder Arthroplasty

Daniel Ritter, Germany

14:50-14:54

In-Hospital 3D Printed Biomodel And Personalized Cutting-Guides For Osteotomy In Severe Femoral Deformities: A Case Report

Mónica García-Marco, Spain

14:54-14:58

Near Infrared Spectroscopy As A Tool For Detection Of Early Osteoarthritic Changes In Tissue Engineered Cartilage Model

Harini Karunarathna, Finland

14:58-15:02

Advantages Of Custom-Made Total Joint Arthroplasty In The Lower Limbs: The Case Of Total Knee And Total Ankle Replacement

Claudio Belvedere, Italy

15:02-15:06

The Muscle Efficiency Index: An Integrated Biomechanical Framework For Quantifying Shoulder Muscle Efficiency

Farid Amirouche, United States

15:06-15:10

Promoting Osteogenic Activity And Matrix Organisation With Implant-Delivered Ultrasound

Kenton Wong, United Kingdom

15:10-15:14

Constraint-Aware Path For Bone Scaffold Fitting In A Calcaneus And Mixed Reality Visualization (A Case Study)

Gianni Magrini, Italy

15:14-15:18

A Small-Data Machine Learning Framework For Tendinopathy Prediction In Student-Athletes

Ahmed Elgebaly, United Kingdom

15:18-15:22

Coaxial 3D Printing Of Core-Shell Inks: A Synergistic Approach To Mechanically Robust And Bioactive Meniscus Implants

Francisco Alves Pereira Rodrigues, Portugal

15:22-15:26

A Predictive Framework For Non-Destructive Multimodal Characterization Of The Lumbar Ligamentum Flavum Within Its Elastic Region

Raluca Ana Maria Barna, Italy

15:30-16:00 Coffee break, Poster viewing and Exhibition

16:00-16:55 - **SALÓN DE ACTOS**

Symposium 22: Translational

ORS SPINE SYMPOSIUM INNOVATION IN SPINE FROM BEDSIDE TO BENCH – WHAT ARE WE MISSING?

Chitra Dahia, United States

Gabriela Graziani, Italy

16:00-16:14

Role Of Sonic Hedgehog Signaling In Intervertebral Disc Homeostasis And Regeneration

Chitra Dahia, United States

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16:14-16:28

When Discs Grow Old: The Role Of Complement In Intervertebral Disc Degeneration And Ageing

Graciosa Quelhas Teixeira, Germany

16:28-16:42

Filling The Knowledge Gap On Disc Herniation

Luca Ambrosio, Italy

16:42-16:54

Neurovascular Crosstalk In Discogenic Pain Associated Nerve Ingrowth

Junxuan Ma, Switzerland

16:00-16:55 - **AULA C**

Symposium 23: Bioengineering / Biomechanics

MECHANOBIOLOGY IN ORTHOPAEDICS AND MUSCULOSKELETAL REGENERATION – IN VIVO, IN SILICO, IN VITRO

Chairs: Esther Wehrle, Switzerland

Peter Varga, Switzerland

16:00-16:15

From Mechanics To Medicine: Engineering-Guided Understanding Of Fracture Regeneration

Sara Checa Esteban, Germany

16:15-16:25

Prognostic Healing Simulations Enable In Silico Trials In An Ovine Model

Peter Varga, Switzerland

16:25-16:35

Bon3OID Platform: A 3D Printed Bone Biohardware For Functional, Multimodal Readouts

Gian Nutal Schädli, Switzerland

16:35-16:45

Spatial Transcriptomics And Mechanobiology In Orthopaedics And Musculoskeletal Regeneration

Esther Wehrle, Switzerland

16:45-16:55

Mechanotransductive Network Modeling Reveals Distinct Hypo-Normal-Hyper Attractor States In Nucleus Pulposus Cells

Zerihun Getahun Workineh, Spain

16:00-16:55 - **AULA D**

Symposium 24: Translational

FIGHTING INFECTION: WHERE DO WE STAND? FROM UNMET CLINICAL NEEDS TO FUTURE SOLUTIONS?

Chairs: Daniele Ghezzi, Italy

Sang-Soo Lee, South Korea

16:00-16:15

All for one and one for all: A multidisciplinary approach for the diagnosis of PJI

Jaime Esteban Moreno, Spain

16:15-16:25

Material solutions to fight infection

Julietta V. Rau, Italy

16:25-16:35

The fate of allergy in periprosthetic joint infection

Guadalupe Marco-Martín, Spain

16:35-16:45

Bacteria-surface Interactions On Nanostructured Orthopedic Coatings Are Modulated By Surface Morphology And Metallic Composition

Daniele Ghezzi, Italy

16:45-16:55

A Multifunctional Nanoplatfrom Based On Copper-Doped Mesoporous Bioactive Glass Nanoparticles For Bone Tissue Regeneration And Antibacterial Activity

Marina Luna Martínez, Spain

16:00-16:55 - **AULA PUIG ADAM**

Free Papers 15

WEARABLES TECHNOLOGY & PATIENT ACTIVITY TRACKING

Chairs: Stijn Bolink, The Netherlands

Raluca Ana Maria Barna, Italy

16:00-16:08

Smart Vision, Faster Decisions: A Wearable-Based Stroboscopic Training Approach For Basketball Performance

Nilüfer Cerbezer, Turkey

16:08-16:16

Balancing Accuracy And Wearability For Activity Recognition In Patients With Hip Osteoarthritis: Minimal IMU Configuration

Noor Alalem, Switzerland

16:16-16:24

One-Year Recovery Trajectories Of Wearable-Derived Physical Activity Following Unilateral Total Knee Arthroplasty

Shima Gholinezhad, Denmark

16:24-16:32

Early objective recovery following primary total hip arthroplasty

Stuart Callary, Australia

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16:32-16:40

**Gait And Stair Ascent/Descent In Free-Living
Conditions Present The Largest Limitations In
Patients With End-Stage Hip OA**

Noor Alalem, Switzerland

16:40-16:48

**From The Laboratory To Daily Life: Cadence Before
And 1 Year After Total Hip Arthroplasty**

Noor Alalem, Switzerland

16:48-16:56

**Wearable-Derived Movement Features Show
Concurrent But Not Predictive Association With
Patient-Reported Outcomes Following Total Knee
Replacement**

Hilman Prakoso, United Kingdom

17:00-18:00 - **SALÓN DE ACTOS**

EORS GENERAL ASSEMBLY



SCIENTIFIC PROGRAM • FRIDAY, SEPTEMBER 25th

08:30-09:25 - **SALÓN DE ACTOS**

Symposium 24: Translational

THE NETWOARK - BUILDING AN OPEN EUROPEAN NETWORK ON OSTEOARTHRITIS RESEARCH (CA21110)

*Chairs: Sylvia Nürnberger, Austria
Valentina Basoli, Switzerland*

08:30-08:45

The NetwoArk – Its Past, Presence And Future

Sylvia Nürnberger, Austria

08:45-08:55

Metabolic Osteoarthritis: Rethinking Early Diagnosis Through Synovial Screening

Luminita Labusca, Romania

08:55-08:05

Translational aspects of Osteoarthritis research

Valentina Basoli, Switzerland

09:05-09:15

Anticholinergic burden in Osteoarthritis

Zsuzsa Jenei-Lanzl, Germany

09:15-09:25

Technological advances for osteoarthritis patients
tbc

08:30-09:25 - **AULA C**

Symposium 25: Translational

FROM BIOMARKERS TO BIORESORBABLE SCAFFOLDS: ENGINEERING ORTHOPAEDIC REGENERATION

*Chairs: Holger Jahr, Denmark
Wei Shiung Lian, Taiwan*

08:30-08:45

Metabolites Discovery for Bone Remodeling

Feng-Sheng Wang, Taiwan

08:45-08:55

Brd4-Dependent Metabolomic Programming on Chondrocyte Anabolism

Wei Shiung Lian, Taiwan

08:55-08:05

Biodegradable Mg/Zn Implants On Mitochondrial Energy Metabolism

Re-Wen Wu, Taiwan

09:05-09:15

Physiomimetic Evaluation Of Porous Mg/Zn Implants
Holger Jahr, Denmark

09:15-09:25

Stress-Adaptive Bilayer Coating Enables Controlled Degradation Of Magnesium Alloy Screws: Preclinical And Clinical Evidence

Chen Shi, China

08:30-09:25 - **AULA D**

Symposium 26: Bioengineering / Biomechanics

BIOMET4D-EORS: NEXT-GENERATION METALLIC ADDITIVE MANUFACTURING: FROM SMART IMPLANTS TO ADVANCED SURFACE FUNCTIONALIZATION (I)

Chairs: TBC

08:30-08:45

Introduction to BIOMET4D, biodegradable alloys for shape-morphing craniosynostosis and skin expansion

Andrés Díaz Lantada, Spain

08:45-09:00

Design for additive manufacturing of smart implants: bridging the gap between generative AI and additive manufacturing

William Solórzano Requejo, Spain

09:00-09:10

Optimisation Of A Lattice-Infiltrating Antimicrobial Hydrogel System For Additively Manufactured Porous Orthopaedic Implants

Julan Wu, United Kingdom

09:10-09:20

Bioinspired topology optimized intervertebral discs

Alejandro de Blas de Miguel, Spain

09:20-09:30

A Graphene Oxide-Reinforced Hydroxyapatite Coating For Enhanced Corrosion Resistance And Osteogenesis Of Biodegradable Magnesium Implants

Weidan Wang, China

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08:30-09:25 - **AULA PUIG ADAM**

Free Papers 16

EXPERIMENTAL MODELS & METABOLISM

Chairs: Zeynep Bal, Japan

Berta Cillero Pastor, The Netherlands

08:30-08:38

Estrogen Deficiency Modulates Postmenopausal Osteoarthritis Through Reprogramming Of The Subchondral Immunometabolism

Tazio Maleitzke, Germany

08:38-08:46

Modulation Of Matrix Metalloproteinase Activity Improves Tendon-To-Bone Healing In Hyperlipidemic Aged Rats Receiving Postoperative Statin Therapy

Xuanyu Ji, China

08:46-08:54

TrkA/NGF Signaling Coordinates Regeneration Through NGF-Dependent Regulation Of Mitochondrial Homeostasis

Mimi Sammarco, United States

08:54-09:02

Targeting muscle-bone vesicular trafficking: an integrated management strategy for glucocorticoid-induced osteosarcopenia

Zhe Liu, China

09:02-09:10

Sex-dependent effects of delayed oligofructose supplementation on shoulder joint subchondral bone microarchitecture

Darsh Tripathi, Canada

09:10-09:18

Synergistic EP4 And BMP2/L51P Signalling Promotes Osteogenesis In Human Nucleus Pulposus Cells

Laura González-Blanco, Switzerland

09:18-09:26

CD31+ Cell Enrichment Modulates Therapeutic Effects Of Stromal Vascular Fraction In Experimental Primary Knee Osteoarthritis

Tazio Maleitzke, Germany

09:30-10:25 - **SALÓN DE ACTOS**

Symposium 27: Translational

THE SYNOVIUM IN KNEE OSTEOARTHRITIS: FROM MECHANISMS TO THERAPEUTIC OPPORTUNITIES

Chairs: Ali Mobasheri, Finland

Stephanie G Dakin, United Kingdom

09:30-09:45

Recent Developments In OA & Synovium Research

Stephanie G Dakin, United Kingdom

09:45-09:55

The Synovium As A Therapeutic Target In Knee Osteoarthritis

Ali Mobasheri, Finland

09:55-10:05

Effect Of 2.5% Polyacrylamide Hydrogel On Synovial Membrane Stiffness In An Equine Osteoarthritis Model

Mohammed AbuAlia, United States

10:05-10:15

Current Synovium-Targeted Treatments And Their Clinical Results

Henning Bliddal, Denmark

10:15-10:25

From Homeostasis To Synovitis: A Regulatory Network Model Of Macrophage Polarization In Knee Osteoarthritis

Yalemzerf Motbaynor Alemu, Spain

09:30-10:25 - **AULA C**

Symposium 28: Clinical

INVESCOT: FUTURE CHALLENGES IN ORTHOPEDIC SURGERY RESEARCH

Chairs: José María Lamo de Espinosa, Spain

Eduardo Hevia Sierra, Spain

09:30-09:45

New technologies need better evidence

Gonzalo Mariscal, Spain

09:45-09:55

Mesenchymal Stem Cell Therapies in Orthopaedics: From Clinical Trials to Future Challenges

José María Lamo de Espinosa, Spain

09:55-10:05

Social and Surgical Trends in Orthopaedic Surgical Techniques

Eduardo Hevia Sierra, Spain

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10:05-10:15

**New technologies in Shoulder arthroplasty:
are they really a game changer?**

Samuel Antuña Antuña, Spain

10:15-10:25

**Muscle Matters in Joint Replacement Surgery:
Clinical Perspectives Rooted in Basic Science and
Multimodal Patient Optimization**

Francesco Pegreffì, Italy

09:30-10:25 - **AULA D**

Symposium 26: Bioengineering / Biomechanics (II)
**BIOMET4D-EORS: NEXT-GENERATION METALLIC
ADDITIVE MANUFACTURING: FROM SMART IMPLANTS
TO ADVANCED SURFACE FUNCTIONALIZATION (II)**

Chairs: TBC

09:30-09:40

**Integrated Porous Tantalum Acetabular Prosthesis
For Large Acetabular Defects: A Finite Element And
Clinical Comparative Study Based On Structural
Instability Theory**

Liangliang Cheng, China

09:40-09:50

**Artificial intelligence in the value chain of metallic
additive manufacturing for personalized structural
implants**

José Antonio González-Cuellar, Spain

09:50-10:00

**Hybrid Surface Treatment Of CP-Ti Lattices Enhances
Fatigue Performance And Osteogenic Differentiation**

Stylianios Kechagias, Greece

10:00-10:10

**Additive manufacturing of superelastic NiTi for
medical implants**

Carlos Aguilar Vega, Spain

10:10-10:20

**Silver Nanoparticles Coating For Porous Titanium
Orthopaedic Implants Surfaces: Bacteriostatic
Characterization**

Pierfrancesco Robotti, Italy

09:30-10:25 - **AULA PUIG ADAM**

Free Papers 17

BIOMECHANICS II

Chairs: Berna Richter, Germany

Muhammed Yusuf Afacan, Turkey

09:30-09:38

**The Trimaran Effect Of The Forefoot:
Evidence For A Dual-Arch Biomechanical Structure**
Dilek Bayraktar, Turkey

09:38-09:46

**Influence Of Posterior Cruciate Ligament Resection
On Knee Kinematics In A CR/CS Total Knee
Arthroplasty Design**

Berna Richter, Germany

09:46-09:54

**Validation And Reliability Of Kinovea Video-Based
Motion Analysis For Temporomandibular And
Cervical Range Of Motion In Children With Spastic
Cerebral Palsy**

Özge Baykan Çopuroglu, Turkey

09:54-10:02

**In Silico Finite Element Assessment Of
Periprosthetic Bone And Implant Integrity After
Total Hip Arthroplasty Across 21 Functional And
High-Impact Tasks**

Ahmed Soliman, Luxembourg

10:02-10:10

**Resistance To Varus Collapse: Finite Element
Comparison Of Intramedullary Nail And Locking
Plate Fixation**

Corrado Ciatti, Italy

10:10-10:18

**Evaluation of knee osteotomy alone and in
combination with meniscal transplantation: an
integrated clinical, biological and biomechanical
analysis**

Nicoletta Sileoni, Italy

10:18-10:26

**Automated Meshing Of Metastatic Vertebrae:
Impact Of Material Discretisation On Finite Element
Strength Prediction**

Daniel Strack, Denmark

10:30-11:00 **Coffee break, Poster viewing
and Exhibition**

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11:00-11:55 - **SALÓN DE ACTOS**

Symposium 29: Bioengineering / Biomechanics

**ISTA-EORS SYMPOSIUM ON CURRENT ACHIEVEMENTS,
NEW TECHNOLOGIES & FUTURE PERSPECTIVES IN
TOTAL JOINT ARTHROPLASTY**

*Chairs: Thomas M. Grupp, Germany
Bernd Grimm, Luxembourg*

11:00-11:12

**Current Achievements, New Technologies & Future
Perspectives in Hip Arthroplasty**

Dominic Simon, Germany

11:12-11:24

**Current Achievements, New Technologies & Future
Perspectives in Knee Arthroplasty**

Thomas M. Grupp, Germany

11:24-11:36

**Current Achievements, New Technologies & Future
Perspectives on Digital Surgery and AI applications**

Bernd Grimm, Luxembourg

11:36-11:48

**Current Achievements, New Technologies & Future
Perspectives on Implant Materials**

Dennis Janssen, The Netherlands

11:00-11:55 - **AULA C**

Symposium 30: Clinical

ANTERIOR HIP SYMPOSIUM

*Chairs: Stijn Bolink, The Netherlands
Andrea D'Amelio, Italy*

11:00-11:15

**Does The Direct Anterior Approach For Primary
Total Hip Arthroplasty Result In Faster Short-Term
Recovery Compared To The Posterolateral Approach?**

Bert Boonen, The Netherlands

11:15-11:25

**How To Manage The Learning Curve In The Direct
Anterior Approach For Total Hip Arthroplasty**

Andrea D'Amelio, Italy

11:25-11:35

**Institutional transition from a straight lateral
approach to the direct anterior approach in total hip
arthroplasty and hemi hip arthroplasty**

Coen Visser, The Netherlands

11:35-11:45

**The Direct Anterior Approach In Complex Primary
And Revision Hip Arthroplasty**

Stijn Bolink, The Netherlands

11:45-11:55

Challenges in Complex Modern THA

Ana Cruz Pardos, Spain

11:00-11:55 - **AULA D**

Symposium 31: Translational

**MAPPING THE MUSCULOSKELETAL
MICROENVIRONMENT THROUGH SPATIAL OMICS**

Chair: Berta Cillero Pastor, The Netherlands

11:00-11:15

**Single-Cell And Spatial Omics-Informed In Vitro
Modelling Reveals Immune-stromal Dysregulation
Driving Joint Repair Failure And Post-Traumatic
Osteoarthritis Progression**

Johanna Bolander, Germany

11:15-11:25

**Modeling Osteoarthritis On A Human Cartilage-On-
Chip: Mechanical And Inflammatory Regulation Of
IPFP-MSC Chondrogenesis**

Betzabeth Pereira Herrera, The Netherlands

11:25-11:35

**Biomarker Screening For Osteoarthritis Diagnostics
Using Differential Expression Analysis Of VHH
Antibody Libraries**

Kunlu Bao, The Netherlands

11:35-11:45

**MicroRNA Signature And Secretome Of Infrapatellar
Fat Pad During Osteoarthritis: Potential Drivers Of
The Disease**

Virginie Joris, The Netherlands

11:45-11:55

**SpatialVerse: An Ecosystem Of Packages For Spatial
Transcriptomics Analysis With Applications In
Biomedical Research**

Robert Tower, United States

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11:00-11:55 - **AULA PUIG ADAM**

Free Papers 18

BIOMATERIALS & STEM CELLS

*Chairs: Manuela Gomes, Portugal
Sven Schmidt, Germany*

11:00-11:08

Liquified Foundries For Self-Organizing Micro-Skeletons: Achieving Autonomous Bone Homeostasis In Catechol-Derived Microcapsules

Maria Clara Gomes, Portugal

11:08-11:16

Acidic Phosphate Microenvironment Within Calcium Phosphate Bone Graft Substitutes Drives Ectopic Bone Formation

Yassine Maazouz, Switzerland

11:16-11:24

Mesenchymal Stromal Cells Stimulate Repair Of Type 2 Diabetes Mellitus-Induced Osteopathy

Cynthia M Coleman, Ireland

11:24-11:32

Bioprinted Composite Hydrogel Grafts With A Tidemark Component Can Mimic The Structure Of The Osteochondral Interface

Cevat Eriskin, Turkey

11:32-11:40

Decellularized Annulus Fibrosus Scaffolds For In Vitro Disease Modelling

Ana Luísa Castro, Portugal

11:40-11:48

Gyroid scaffold anisotropy as a design approach for tailored mechanics on 3d printed bone implants

Leire Viana Uribe, Spain

11:48-11:56

A predictive modelling pipeline of osteoarthritic pain

Ryan Jones, United Kingdom

12:00-12:30 - **SALÓN DE ACTOS**

PLENARY LECTURE

Chair: Stijn Bolink, The Netherlands

AI GETS PHYSICAL: ASSESSING MOVEMENT AND ACTIVITY WITH SENSORS, IMPLANTS AND VISION TO IMPROVE PATIENT OUTCOMES

Bernd Grimm, Luxembourg

12:30-13:30 - **Lunch, Poster viewing and Exhibition**

13:30-14:25 - **SALÓN DE ACTOS**

Symposium 32: Clinical

PRECISION DISC DEGENERATION: FROM BIOLOGY TO CLINICAL TRANSLATION

*Chairs: Fabrizio Russo, Italy
Gianluca Vadala, Italy*

13:30-13:45

Vertebral Endplate Development and Function Is Governed by Inter-Compartment Metabolic Coupling

Makarand V. Risbud, United States

13:45-13:55

N-Acetylcysteine Regulates the Endoplasmic Reticulum Stress Response in CEP-Like chondrocytes Exposed to Proinflammatory Cytokines

Laura González-Blanco, Switzerland

13:55-14:05

Sugar-Coating Biomaterials: A New Recipe for Disc Regeneration

Kieran Joyce, Ireland

14:05-14:15

Artificial Intelligence for Patient Stratification in Disc Regeneration

Fabrizio Russo, Italy

14:15-14:25

Clinical Translation of Cell Therapy for Intervertebral Disc Regeneration

Gianluca Vadala, Italy

13:30-14:25 - **AULA C**

Symposium 33: Translational

SMALL PACKAGES, BIG IMPACT: EXTRACELLULAR VESICLES IN MUSCULOSKELETAL HEALTH AND DISEASE' - SYMPOSIUM OF THE GERMAN MUSCULOSKELETAL REGENERATION NETWORK (MRNET, DGOU)

Chair: Janosch Schoon, Germany

13:30-13:45

Targeting Extracellular Vesicle Signalling in Fibrocartilaginous Tissues

Graciosa Quelhas Teixeira, Germany

13:45-13:55

Extracellular Vesicles Of Immortalized MSCs (CiMSC-EVs) – The Immunomodulatory Potential In A Human Chondrocyte Inflammation Model

Robert Ossendorff, Germany

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13:55-14:05

Quercetin Attenuates Chondrocyte Anoikis Via Modulation Of Mesenchymal Stromal Cell-Derived Small Extracellular Vesicles To Promote Cartilage Repair In Osteoarthritis

Yang Zhang, China

14:05-14:15

Evaluating The Therapeutic Potential Of Telomerized Mesenchymal Stromal Cell-Derived Extracellular Vesicles For Osteoarthritis

Matteo Signor, Germany

14:15-14:25

The Role Of Galectins In Extracellular Vesicle-Mediated Tissue Communication In Osteoarthritis

Christine Strauss, Austria

13:30-14:25 - **AULA D**

Symposium 34: Clinical

TOTBID-TOAK: TRANSLATIONAL ADVANCES IN ORTHOPAEDIC TRAUMA: FROM INFECTION BIOLOGY TO HIP PRESERVATION AND POLYTRAUMA CARE

Chairs: Murat Korkmaz, Turkey

Burak Aydın, Turkey

13:30-13:45

Breaking The Biofilm Barrier: N-Acetylcysteine And Carvacrol In Orthopaedic Infections

Özhan Pazarıcı, Turkey

13:45-13:55

Targeted Biofilm Disruption In Bone Infections Using Ultrasound-Activated Microbubbles For Enhanced Antibiotic Delivery

Aya Ben Issa, United Kingdom

13:55-14:05

Prognostic Factors In Multitrauma Patients With Orthopedic Injuries; A Single Centre Study

Bariş Sari, Turkey

14:05-14:15

Patient Experiences Before And After Core Decompression For Stage II Femoral Head Osteonecrosis

Mehmet Yiğit Gökmen, Turkey

14:15-14:25

Case-Anchored Finite Element Phenotyping Of Four Hip-Preserving Reconstructions For Osteonecrosis Of The Femoral Head

Jirong Shen, China

13:30-14:25 - **AULA PUIG ADAM**

ORAL POSTERS

CLINICAL

Chairs: Stijn Bolink, The Netherlands

Luca Ambrosio, Italy

Jürgen Alphonso, Austria

13:30-13:34

Preoperative MRI-Based Bicipital Groove-Tendon Morphometrics As Imaging Biomarkers Of Persistent Bicipital Pain And Biceps-Specific Function After Long-Head Biceps Tenotomy Performed During Rotator Cuff Repair: A Prospective Cohort Study

Muhammed Yusuf Afacan, Turkey

13:34-13:38

A Retrospective Group-Control Study Comparing Combinations Of Intra-Articular Injections For Hip Osteoarthritis

Valerio Pace, Italy

13:38-13:42

Assessing the Impact of Rotator Cuff Tear Aetiology on Clinical and Functional Outcomes Following Surgical Repair: Systematic Review and Meta-Analysis

Sharmaarke Nor, United Kingdom

13:42-13:46

The Effectiveness Of Single-Leg Hip Spica In Comparison To The Double-Leg For Pediatric Femur Fractures. Systematic Review

Yamamh Mahmood Al-Jubori, Oman

13:46-13:50

Association Of Deltoid Muscle Thickness And Proximal Humeral Cortical Thickness With Rotator Cuff Tear Severity On Shoulder MRI: Development Of A Novel MRI-Based Structural Index

Muhammed Yusuf Afacan, Turkey

13:50-13:54

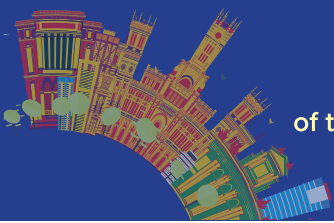
Muscle Quality Of The Thigh As A Predictor Of Postoperative Outcomes After Total Knee Arthroplasty In Patients With Haemophilia

Rui Feng, China

13:54-13:58

Intraoperative Use Of Individualized 3D-Printed Models In Revision Hip Arthroplasty - A Case Report

Marina Insua-Rodríguez, Spain



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13:58-14:02

The Impact Of Obesity On Postoperative Outcomes In Adult Scoliosis Surgery: A Nationwide Database Study

Mohammad Qusay Yahya, Israel

14:02-14:06

Long Term Survivorship Of Porous Tantalum Acetabular Components In Revision Total Hip Arthroplasty

Stuart Callary, Australia

14:06-14:10

The Relationship Between Pain Threshold, Functional Status, And Psychosocial Status In Individuals With Knee Osteoarthritis And Chronic Low Back Pain

Tugba Dere, Turkey

14:10-14:14

Does The Weekend Have An Influence? Early Mortality After Hip Fracture In The Spanish National Hip Fracture Registry (RNFC)

Guillermo García Cruz, Spain

14:14-14:18

Validation Of Mobilise-D Algorithm For The Estimation Of Cadence, Stride Length, And Walking Speed In Semi-Standardized Condition For Patients With End-Stage Hip Osteoarthritis

Xavier Gasparutto, Switzerland

14:18-14:22

Perioperative Outcomes Of Reverse Total Shoulder Arthroplasty In Patients With Rheumatoid Arthritis: A National Cohort Study

Mohammad Qusay Yahya, Israel

14:22-14:26

Survivorship And Radiographic Stability Of Modified Trabecular Metal Acetabular Components In Revision Total Hip Arthroplasty

Stuart Callary, Australia

14:30-15:25 - **SALÓN DE ACTOS**

Symposium 35: Clinical

INNOVATIONS IN ORTHOPEDIC SURGERY: THE FATE OF 3D PRINTING, CUSTOM MADE IMPLANTS AND ROBOTICS

Chairs: Theofilos Karachalios, Greece

Mazias Mohaddes, Sweden

14:30-14:45

Redefining Orthopedic Surgery: Complex Cases Resolved with Custom-Made 3D-Printed Implants

Alba González, Spain

14:45-14:55

Robotic Hip and Knee Replacement: Real-World Data

Mazias Mohaddes, Sweden

14:55-15:05

Dislocation After Total Hip Arthroplasty: 4977 Hips Followed Between 1999 And 2024

Ana Puerta Olivares, Spain

15:05-15:15

Integration of in-house 3D technologies into the orthopedic surgical planning workflow

José Tadeo Borjas, Spain

15:15-15:25

The role of 3D planning in revision THA

Eduardo García-Rey, Spain

14:30-15:25 - **AULA C**

Free Papers 19

BONE DISEASES

Chairs: Nuria Vilaboa, Spain

Ana Alonso Pérez, Spain

14:30-14:38

Novel Osteoanabolic And Neuromodulatory Proteins/Peptides For Bone Regeneration And Osteoporosis Therapy

Kelvin Yeung, Hong Kong SAR

14:38-14:46

Early Bone Loss With Endothelial-Myeloid Niche Remodeling In Colorectal Cancer-Associated Cachexia

Zeynep Bal, Japan

14:46-14:54

New Insights Into Immunoporosis: The Effect On Lymph Nodes And Spleen In An Ovariectomy-Induced Osteoporotic Rat Model

Nicole Sommer, Austria

14:54-15:02

Mutant androgen receptor causes bone fragility by impairing development and microarchitecture in a mouse model of SBMA

Melania Maglio, Italy

15:02-15:10

Development Of 3D Magnetic Chondrosarcoma Models To Study JNK Pathway Modulation By Pulsed Electromagnetic Fields

Érica Linda dos Santos Pereira, Portugal

15:10-15:18

Loss Of Histone Arginine Demethylase JMJD7 Accelerates Osteoporosis Development By Disrupting Mitochondrial Oxidative Phosphorylation

Yu-Han Lin, Taiwan

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15:18-15:26

Experimental Study Of Three Different Osteoporosis Models Of Porcine Condyles Of Femur

Huiming Jiang, China

14:30-15:25 - AULA D

FREE PAPERS 20

CARTILAGE & MENISCUS III

Chairs: Gina Lisignoli, Italy

Harini Karunarathna, Finland

14:30-14:38

Catalytic Remodeling Of The Articular Pro-Inflammatory Milieu By Palladium: An Extracellular Strategy Against Osteoarthritis

Huiming Jiang, China

14:38-14:46

Exploring The Molecular Mechanism Of Betaine Targeting RARRES1 To Inhibit Cartilage Fibrosis Based On WGCNA And Machine Learning Algorithms

Zhaofeng Zhang, China

14:46-14:54

GDF10 Maintains Calcium Ion Homeostasis To Alleviate Osteoarthritis Via Activating NCX3

Zhaofeng Zhang, China

15:54-15:02

335 Three-Dimensional Characterisation Of Growth Plate Surface Morphology Across Development

Mariami Mtchedlishvili, Ireland

15:02-15:10

Inflammatory Lipid Profiles In Synovial Fluid Are Associated With Poor Response To Autologous Chondrocyte Implantation

Yumna Ladha, United Kingdom

15:10-15:18

Key Inflammatory Extracellular Matrix Regulation Markers Mediating Arthrofibrosis In Human Osteoarthritis

Kieran Joyce, Ireland

15:18-15:26

Exploring The Roles Of Chondromodulin (Cnmd) For Novel Osteoarthritis Interventions: Insights From In Vivo And In Vitro 3D Miniaturized Tissue Model

Viviana Reyes Alcaraz, Germany

15:30-16:00 **Coffee break, Poster viewing and Exhibition**

16:00-16:55 - SALÓN DE ACTOS

Symposium 37: Clinical Forte

16:00-16:55 - AULA C

Symposium 38: Clinical

FROM ROBOTIC ARTHROPLASTY TO DIGITAL REHABILITATION: AI-ENABLED PERSONALIZATION IN CARE

Chairs: Gökhan Meriç, Turkey

Elif Tuğçe Çil Sertöz, Turkey

16:00-16:15

AI-Integrated Robotic Arthroplasty for Personalized Surgical Care

Gökhan Meriç, Turkey

16:15-16:25

Risk Factors And Sex-Specific Predictive Models For Heterotopic Ossification Following Hip Arthroplasty: The Role Of Surgical Approach And Comorbidities

Ana Alonso Pérez, Spain

16:25-16:35

The Role of Artificial Intelligence in Personalized Rehabilitation: VR and Telerehabilitation Approaches

Elif Tuğçe Çil Sertöz, Turkey

16:35-16:45

Clinical Applications and Outcomes of Digital Rehabilitation Technologies

Nilüfer Cerbezer, Turkey

16:45-16:55

Effect Of ChatGPT-5.2-Assisted Surgical Preparation On Operative Performance In Orthopaedic Residents And Specialists: A Prospective Controlled Simulation Study

Muhammed Yusuf Afacan, Turkey

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16:00-16:55 - **AULA D**

Free Papers 21

CLINICAL HIP & KNEE

*Chairs: Andrea D'Amelio, Italy
Alejandra Barra Domínguez, Spain*

16:00-16:08

Hip Abductor Muscle Composition And Its Age-Related Alterations In Female Patients With Bilateral Hip Osteoarthritis

Tadashi Yasuda, Japan

16:08-16:16

Efficacy And Safety Of Fondaparinux In Elective Total Hip Arthroplasty And Hip Fracture Surgery: A Systematic Review And Meta-analysis

Gonzalo Mariscal Ruiz-Rico, Spain

16:16-16:24

Changes In The Outcome Of Total Hip Arthroplasty In Patients With Osteonecrosis Of The Femoral Head Between 1995 And 2023

Laura Arcos Flores, Spain

16:24-16:32

Identification Of Three Stress Phenotypes In Late-Stage Osteoarthritis

Zsuzsa Jenei-Lanzl, Germany

16:32-16:40

A Modified Quadriceps Snip Technique In Primary Total Knee Arthroplasty For Hemophilic Stiff Knees: A Retrospective Case Series

Qunqun Chen, China

16:40-16:48

The Radiological Prevalence And Co-Pathology Associations Of Acromioclavicular Joint Arthritis In Symptomatic Shoulders: Preliminary Observations From A MRI-Based Study

Mehar Dhillon, India

16:00-16:55 - **AULA PUIG ADAM**

FREE PAPERS 22

BIOMECHANICS & ORTHOPAEDIC SURGERY

Chairs: Daniel Strack, Denmark

16:00-16:08

Incidence Of Proximal Junctional Kyphosis (PJK) After Lumbar Arthrodesis With Cortical Trajectory Screws: Comparison Between Freehand Technique And Intraoperative Navigation

Carles Fabrés Martín, Spain

16:08-16:16

Biomechanical Assessment Of Anterolateral Plating Solutions For Posterolateral Tibial Plateau Fractures

Ivan Zderic, Switzerland

16:16-16:24

A Modular Extra-Cortical Plate Attachment For Rapid Deployment And Improved Rotational Stability In Proximal Femoral Tumour Endoprostheses

Oliver Stevens, United Kingdom

16:24-16:32

Measurement Of Perfusion During Non-Union Bone Fracture Healing By Detecting Ultrasound-Responsive Microbubble Activities

Meng Chen Michelle Li, United Kingdom

16:32-16:40

Reprogramming Osseointegration Pathways With Bioelectronic Implants

Sasza Chyntara Nabilla, United Kingdom

16:40-16:48

Characterization Of A Novel Interlaminar Ligament In The Lumbar Spine: Radiographic, Endoscopic, And Histopathological Analysis

Xiaofeng Le, Singapore

16:48-16:56

CT-Based Micromotion Analysis Of Implant Migration In Robotic-Assisted Versus Manual Total Knee Arthroplasty: Interim Results From A Randomized Trial

Jakob Hermodsson, Sweden

17:00-18:00 - **SALÓN DE ACTOS**

Awards & Closing Ceremony

EXHIBITION MAP

