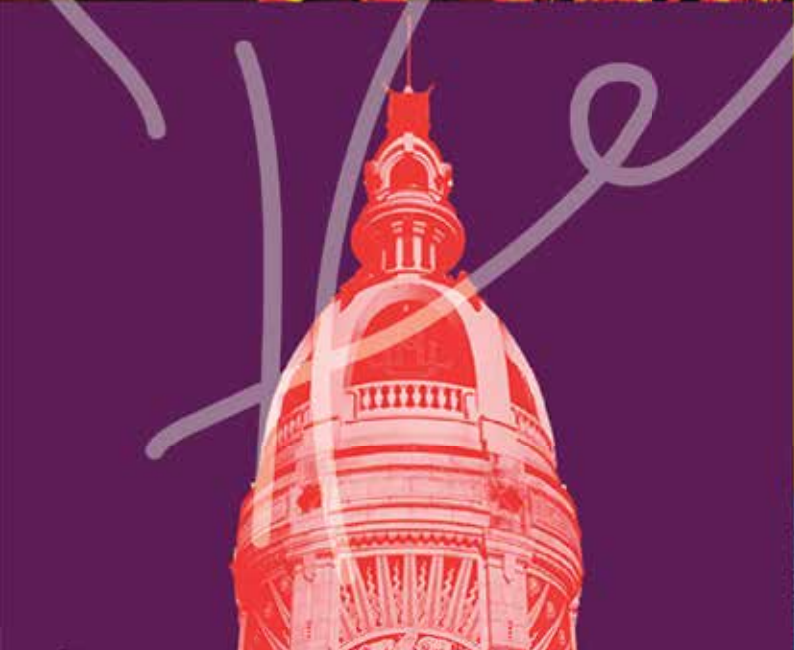
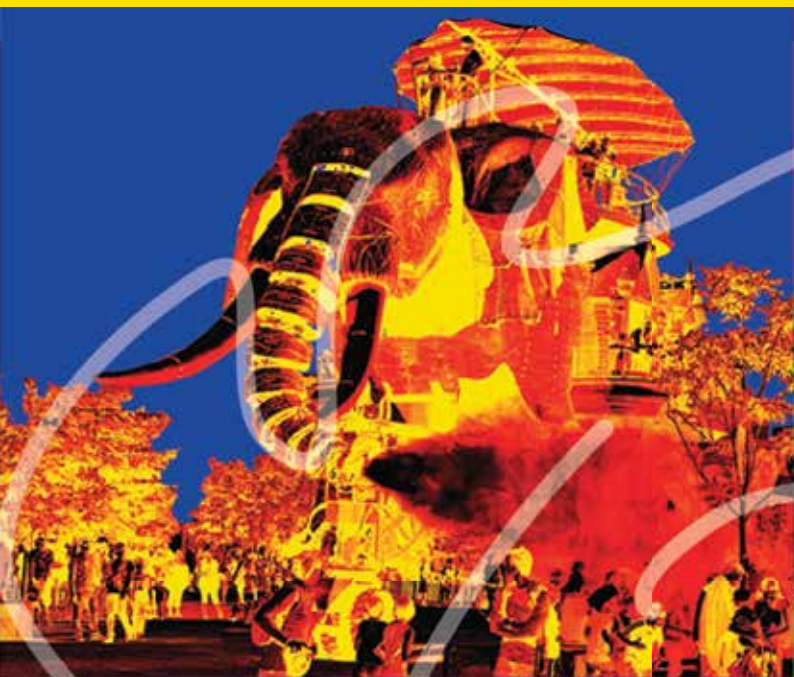


EORS 2014 NANTES

22nd Annual Meeting, 2-4 July 2014, Nantes, France

CONFERENCE PROGRAMME



Save the Date!



EORS 2015 Bristol

23rd Annual Meeting of the
European Orthopaedic
Research Society
4-5 September 2015

University of Bristol
Wills Memorial Building



www.eors2015.org

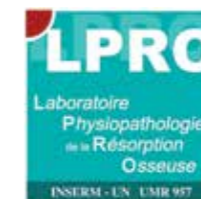
patronage & endorsements

EORS 2014 would like to thank the following organisations for their kind patronage and endorsement. Their official support is important in helping the European Orthopaedic Research Society further advances in this important field of orthopaedics research.



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 241879.

Coordination: Prof. Pierre Layrolle, PhD at Inserm U957, Nantes



timetable

	WEDNESDAY JULY 2		THURSDAY JULY 3		FRIDAY JULY 4	
	Amphi 450	Amphi 200	Amphi 450	Amphi 200	Amphi 450	Amphi 200
08.30			Keynote 2: AC Masquelet Amphi 450			
09.00	Registration Reception Mezzanine		O5 Bone Regeneration & Tissue Engineering II	O6 Biomechanics I	Keynote 3: D Heymann Amphi 450	
09.30					O15 Bone Tumors	O16 Infection & Trauma II
10.00			Coffee, Exhibition & Poster Visit Exhibition Hall		Coffee, Exhibition & Poster Visit Exhibition Hall	
10.30	S1 International Society of Ceramics in Medicine	S2 Horizon 2020	O7 Infection & Trauma I	O8 Biomaterials II	O17 Wear Particles & Osteoimmunology	S5 AO Foundation
11.00						
11.30						
12.00	Lunch, Exhibition Visit & Poster Session Exhibition Hall		Lunch, Exhibition Visit & Poster Session Exhibition Hall		Lunch, Exhibition Visit & Poster Session Exhibition Hall	
12.30						
13.00						
13.30	S3 Turkish Orthopaedic Society	S4 EU Reborne Project	O9 Osteoarthritis	O10 Implant Surface Modifications II	Keynote 4: A Scherberich Amphi 450	
14.00			O11 Hip Arthroplasty	O12 Tendon & Ligaments	O18 Cartilage Repair	O19 Surgical Navigation & imaging
14.30			Coffee, Exhibition & Poster Visit Exhibition Hall		Coffee, Exhibition & Poster Visit Exhibition Hall	
15.00	O1 Osteoporosis	O2 Biomaterials I	O13 The Knee	O14 The Spine	O20 Bone Regeneration & Tissue Engineering III	O21 Biomechanics II
15.30						
16.00						
16.30	Coffee, Exhibition & Poster Visit Exhibition Hall		Coffee, Exhibition & Poster Visit Exhibition Hall		Coffee, Exhibition & Poster Visit Exhibition Hall	
17.00	O3 Bone Regeneration & Tissue Engineering I	O4 Implant Surface Modifications I	Awards & Closing Ceremony Amphi 450			
17.30						
18.00						
18.30	Opening Ceremony Amphi 450					
19.00	Keynote 1: A Hillman Amphi 450					
19.30	Exhibitor Roadshow Amphi 450					
19.45	Wine & Cheese Reception Exhibition Hall		EORS 2014 Gala Dinner The Elephant: Les Machines de L'île (Til Late)			
20.00						
20.30	Classical Concert La Cité Event Center (Til Late)	Young Investigator Party Lieu Unique (Til Late)				

- Registration, Breaks, and Exhibition
- Keynotes
- Workshops and Sessions
- Ceremonies and Special Events

welcome eors2014

Dear friends and colleagues,

We warmly welcome you to the 22nd Annual Meeting of the European Orthopaedic Research Society, EORS 2014, held in Nantes, France from 2nd to 4th July 2014.

It is a great pleasure to host you in the premises of La Cité International Event Center. Over 300 delegates from all continents have registered for the EORS 2014 conference. Among them, there are many Young Investigators who will be able to meet a mentor for lunch or co-chair a session.

The scientific programme includes 4 plenary lectures, 200 oral presentations in 21 sessions, 5 symposia and over 100 posters. This rich and varied programme over the 3 days of the conference will provide you with many opportunities to share, exchange and discuss the latest innovations in orthopaedic research.

And since we are in France, we encourage you to network while enjoying fine French food during the breaks in the Exhibition Hall. We are also proud to offer you the chance to taste a selection of local Loire Valley wines and French cheeses at the Wine & Cheese Reception, and a truly memorable Gala Dinner at the home of the world-famous Nantes Elephant.

The social programme also includes the possibility to attend a Classical Concert and for Young Investigators Only, a dedicated social event at the 'Lieu Unique' with bars, live music, and cultural activities.

We trust that you will enjoy the conference and your stay in Nantes.

Pierre Layrolle



Director of Research, INSERM UMR957
Laboratory of Pathophysiology of Bone Resorption, Nantes, France

François Guin



Head of Orthopaedic Surgery,
University Hospital, Nantes, France

Florelle Gindraux



EORS French Ambassador,
University Hospital Center,
Besançon, France

eors2014 committees

scientific information

CONFERENCE CHAIRS

Pierre Layrolle, President EORS 2014
François Gouin, Vice-President EORS 2014
Florelle Gindraux, EORS French Ambassador

ORGANISING COMMITTEE

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Sandrine Maurice, LPRO FR
Victoria Caldy, MyMarketingTeam
Lauriane Pellaud, MyMarketingTeam
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Laurent Obert, University Hospital Center Besançon
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THANK YOU TO THE REVIEWERS

Yash Agarwal	Benedicte Le Royer
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Frederic Blanchard	Laurent Obert
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Nathalie Chevallier	Francesca Perut
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Denitsa Docheva	Geoff Richards
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Enrique Gomez Barrena	Klemens Trieb
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Dominique Heymann	Nico Verdonshot
Holger Jahr	Franck Verrecchia
Feza Korkusuz	Nuria Vilaboa

ECTS CREDITS

The EORS 2014 Organising Committee is happy to confirm that the EORS 22nd Annual Meeting is eligible for ECTS credits as follows:

- 10 ECTS credits for each oral presentation
- 5 ECTS credits for each poster presentation
- 2 ECTS credits for attending the conference

Following the conference, each participant will receive a certificate of attendance accordingly.

AWARDS

The EORS 2014 Scientific Committee is proud to announce the following awards:

- Best Overall Oral
- Best Overall Poster
- Best Young Investigator Poster Presentation in each of the following three categories: Clinical, Biomechanics, Biology
- Best Young Investigator Oral Presentation in each of the following three categories: Clinical, Biomechanics, Biology.

These awards will be delivered during the Closing Ceremony on Friday 4 July at 17.30 in the Amphitheatre.

ORAL PRESENTATIONS

Oral presentations are 6 minutes plus 2 minutes for discussion. The Chair/Moderator will strictly control time slots to ensure the programme stays on schedule.

Presentations should be prepared by using Microsoft Powerpoint. Special instructions apply for including video – please refer to the EORS 2014 website.

Presentations should be uploaded at the Preview Room (Room B, level 3) at least a half day before the scheduled time for your presentation. Please ensure your presentation is saved onto a USB key or PC-CD Rom.

Presenters shall introduce themselves to the Chair/Moderator 5 minutes prior to the start of the relevant scheduled session.

POSTER PRESENTATIONS

Poster size and format: Height 120cm x Width 90cm. Poster boards will be numbered and step up material will be available.

Poster mounting: between 09.00 and 12.00 midday on Wednesday 2 July. Please note all posters must be mounted by 12 noon.

Poster dismounting: posters may be dismantled as from 13.30 on Friday 4 July.

Poster sessions: all poster authors are expected to attend poster sessions at every lunch break.

young investigators

EORS 2014 recognizes the importance of Young Investigators for the future of orthopaedics research. The Scientific Committee has chosen to continue the initiatives introduced at CORS 2013 by offering Young Investigator Awards:

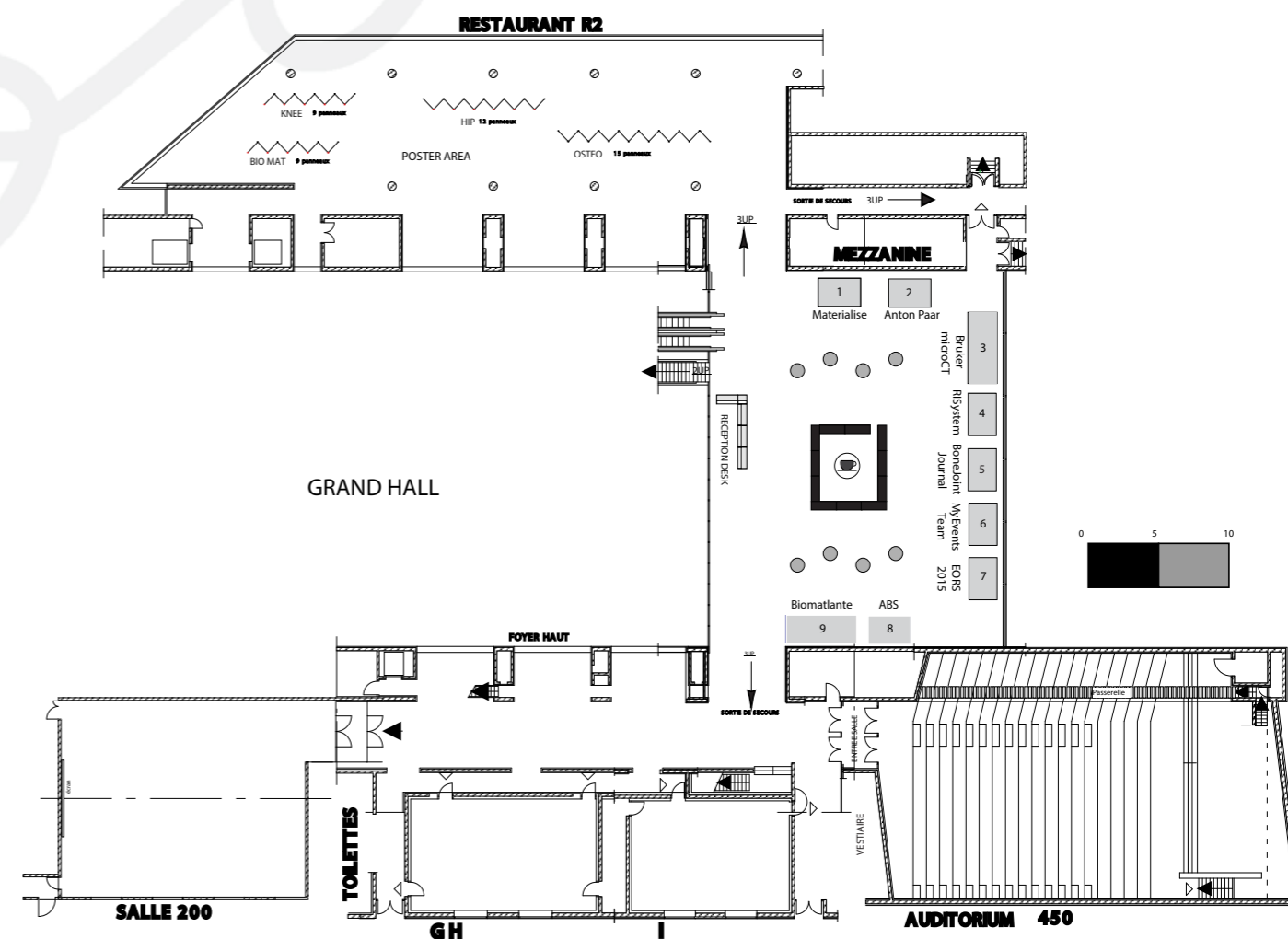
- Best Young Investigator Poster Presentation in the following categories: Clinical, Biomechanics, Biology
- Best Young Investigator Oral Presentation in the following categories: Clinical, Biomechanics, Biology.

The winner of each award will have the opportunity to attend the next Annual Meeting free of charge and so continue to further their network and valued work in orthopaedics research.

EORS 2014 also gives Young Investigators the chance to serve as a chairperson at a major international meeting. Young Investigators also have the opportunity to Meet-a-Mentor (keynote speakers, members of the EORS 2014 Scientific and Executive Committee) over lunch – look out for the sign-posted areas.

EORS 2014 is also happy to announce a Young Investigators Only Social Event on Wednesday, 2 July 2014 from 20.30 until late at The Lieu Unique, Nantes, just a short walk from La Cité Nantes Events Center. It's a great opportunity to encourage professional networking and start friendships in a relaxed atmosphere.

exhibition floorplan



exhibitor details

ANTON PAAR



Company Name Anton Paar
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 Email laurent.ducros@anton-paar.com
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 Stand Number 2

ATLANTIC BONE SCREEN



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 Mobile + 33 (0) 6 19 05 27 08
 Email elisabeth.porcher@atlantic-bone-screen.com
 Website www.atlantic-bone-screen.com
 Stand Number 8

BIOMATLANTE



Company Name Biomatlante
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 Position Marketing Assistant
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 -ZA Les Quatre Nations,
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 Phone + 33 (0) 2 28 02 00 09
 Email sebastienonillon@biomatlante.com
 Website www.biomatlante.com
 Stand Number 9

BONE & JOINT RESEARCH



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 Website www.bjr.boneandjoint.org.uk
 Stand Number 5

BRUKER MICROCT



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 Mobile +32 485 27 23 29
 Email hsing-yi.chen@bruker.com
 Website www.bruker-microct.com
 Stand Number 3

EORS 2015



Company Name EORS 2015
 Website www.eors2015.org
 Stand Number 7

MATERIALISE NV



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 Website www.biomedical.materialise.com
 Stand Number 1

MYEVENTSTEAM (MYMARKETINGTEAM)



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 44000 Nantes, France
 Phone +33 (0)2 40 48 22 98
 Email contact@myeventsteam.com
 Website www.myeventsteam.com
 Stand Number 6

RISYSTEM AG



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 Position CEO
 Address Talstrasse 2A,
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 Phone +41 81 511 56 02
 Mobile +41 76 594 26 13
 Email romano.matthys@risystem.com
 Website www.risystem.com
 Stand Number 4

social programme

OPENING CEREMONY

Wednesday 2 July, 18.30, Amphi 450, La Cité Nantes Events Center

Join us for the official Opening Ceremony of the EORS 22nd Annual Meeting on Wednesday 2 July at La Cité Nantes Events Center, at 18.30.

WINE & CHEESE RECEPTION

Wednesday 2 July, 19.45, Exhibition Hall, La Cité Nantes Events Center

The Organising Committee will host a Wine & Cheese Welcome Reception for all EORS 2014 Nantes delegates, exhibitors and accompanying persons on Wednesday 2nd July, from 19.45. Be sure to be there to taste a selection of local Loire Valley wines and French cheeses whilst you make the most of this the first of many networking opportunities at EORS 2014.

CLASSICAL CONCERT

Wednesday 2 July, 20.30, Grand Auditorium, La Cité Nantes Events Center

Following the Welcome Wine & Cheese Reception, we offer you the opportunity to attend the concert of the famous "Orchestre National des Pays de la Loire". At this the end of the concert season, the choir of the Pays de la Loire Orchestra and Angers Nantes Opera, both the soloists and the orchestra will come together to transport you even further on an emotional journey.

YOUNG INVESTIGATOR PARTY

Wednesday 2 July, 20.45, The Lieu Unique, Nantes, a short walk from La Cité Nantes Events Center

The EORS 2014 Organising Committee are organising a special social event just for Young Investigators at the Lieu Unique on Wednesday 2nd July, as from 20.45.

GALA DINNER

Thursday 3 July, 19.30, Les Machines de l'Île, Nantes

EORS 2014 has chosen a very special and unique venue for the Gala Dinner. "Home to the Elephant, Les Machines de l'Île", is an unprecedented project combining art and engineering. This mechanical phenomenon is a blend of the invented worlds of Jules Verne, the mechanical universe of Leonardo da Vinci, and the industrial history of Nantes, built on the site of the former shipyards.

Arrival drinks: enjoy a glass of wine while meandering through the Machine de l'Île Workshops. The Machine Gallery is a living space where new machines are exhibited after they are created in the workshop of the « La Machine » company.

Dinner: will feature regional specialities accompanied by a variety of French wines.

If you have not yet reserved one of the limited number of places, please contact the Reception Desk to enquire whether any places remain.

plenary lectures

K1 AVRIEL HILLMAN

FOUNDER, CURE AVN FONDATION, USA



Wednesday 2 July
19.00-19.30 • Amphi 450

Avriel will bring a new and important **patient's perspective** to the EORS 22nd Annual Meeting by presenting on the topic of:

"The role of patient advocates in the accelerated advance of innovative research – a case study in combating Avascular Necrosis."

Avriel Hillman (choreographer/dancer, actress and director) was diagnosed in 2012 with Stage III Avascular Necrosis. Her talk will outline key aspects of her journey from diagnosis to the creation of The Cure AVN Foundation. Avriel will also reveal her vision of what is required for **future advances**, including a new roadmap for how orthopedic researchers, doctors, and patient advocates can work synergistically to innovate solutions and enhance the field, as well as several concrete opportunities that lie ahead with the Foundation itself.

K2 PROF. ALAIN-CHARLES MASQUELET

AVICENNE HOSPITAL, PARIS, FRANCE



Thursday 3 July
08.30-09.00 • Amphi 450

"Perspectives on the induced membrane technique for bone defect reconstruction."

K3 PROF. DOMINIQUE HEYMANN

UNIVERSITY OF NANTES, FRANCE



Friday 4 July
09.00-09.30 • Amphi 450

"Bone sarcomas: the tumor niche as a source of new therapeutic targets."

K4 DR. ARNAUD SCHERBERICH

FROM THE GROUP OF PROF. IVAN MARTIN,
UNIVERSITY OF BASEL, SWITZERLAND



Friday 4 July
14.00-14.30 • Amphi 450

"Engineered osteogenic & vasculogenic grafts: from fundamental research on adipose-derived cells to a clinical trial."

symposia overview

S1 International Society of Ceramics in Medicine

Wednesday 2 July • 10.30-12.00 • Amphi 450 • Chair: Prof. Nobert Passuti & Prof. Guy Daculsi



This symposium has been organized by Prof. Guy Daculsi, General Secretary of the International Society for Ceramics in Medicine. Synthetic calcium phosphate bioceramics are widely used in bone regenerative surgery in combination with autologous bone grafts and bone marrow. More recently, these synthetic bone have been considered as scaffolds for cultured expanded mesenchymal stem cells.

S1.1

Bioceramic and Fibrin Sealant in High Tibial Valgus Osteotomy : Prospective Clinical Study

JEAN LOUIS ROUVILLAIN¹, GUY DACULSI^{1,2}, YVES CATONNE¹, DOMINIQUE CHAUVEAUX³, THIERRY FABRE³, JM N'Guyen², M MOINARD⁴, M PELE⁵, M Bagot d'Arc⁶, M DURAND¹

¹INSERM CIC-IT 802, Université de Bordeaux, France, ²INSERM U791, University of Nantes, ERT 2004 Clinical Research, Dental Faculty, Nantes University, NANTES, France, ³Service de chirurgie orthopédique, Hôpital Pellegrin, CHU de Bordeaux, Bordeaux, France, ⁴CHU LA MEYNARD, FORT DE FRANCE, Martinique, ⁵Service de chirurgie orthopédique, Hôpital Pitié Salpêtrière, Paris, France, ⁶Service d'imagerie diagnostique et interventionnelle de l'adulte, CHU de Bordeaux, Bordeaux, France, ⁷Baxter BioSurgery, Maurepas, France

S1.2

Clinical experience of Resorbable Micro Macrostructured Bioceramic in Orthopaedics

Andre-Pierre Uzel¹, Karine Copaver³, Stephane Henri¹, Guy Daculsi²

¹CHU, Pointe-à-Pitre, Guadeloupe, ²Inserm, Nantes, France, ³STAPS, Pointe-à-Pitre, Guadeloupe

S1.3

Use of autologous concentrated total bone marrow grafting in the orthopedic department of Nantes Hospital (2005-2013).

SYLVAIN BRIAND¹, GUILLAUME-ANTHONY ODRI¹, SOPHIE DERENNE², PIERRE LAYROLLE³, FRANCOIS GOUIN¹

¹DEPARTMENT OF ORTHOPAEDIC SURGERY, THE UNIVERSITY HOSPITAL OF NANTES, NATIONAL INSTITUTE OF HEALTH AND MEDICAL RESEARCH UMR-S 957, NANTES, France, ²FRENCH BLOOD ESTABLISHMENT, NANTES, France, ³NATIONAL INSTITUTE OF HEALTH AND MEDICAL RESEARCH UMR-S957, NANTES, France

S1.4

From bone substitutes to tissue engineering with mHSC: the European experience

Philippe Rosset

CHU de Tours, Tours, France

S2 Horizon 2020

Wednesday 2 July • 10.30-12.00 • Amphi 200 • Chair: Dr Marie Fauchadour & Dr Pierre Layrolle



Horizon 2020 is the new European Union funding programme for research and innovation. The H2020 programme has started in 2014 and will end in 2020 and benefits of a budget of €15 billion for the first 2 years, with a significant part dedicated to the Health sector. The purpose of this symposium is to present the different calls and funding opportunities of the H2020 programme in relation to orthopaedic research in order to prepare collaborative projects. The European Grant Support Department of the University of Nantes will first present different funding opportunities in H2020. The company ALCIMED will present their services and experience in the preparation and management of large collaborative projects. Pierre Layrolle, coordinator of Reborne will give insights on the benefits of European funding in translational research from bench to bedside. At the end, the audience will discuss opportunities to build collaborative projects.

S2.1

Helping researchers make their way through the Horizon 2020 funding opportunities.

Sebastien Davy

University of Nantes, Nantes, France

S2.2

Tips & tricks for writing successful H2020 projects

Marie Fauchadour

Alcimed, Paris, France

S2.3

The European project: Reborne

Pierre Layrolle

Inserm U957, LPRO, University of Nantes, Nantes, France

S3 Turkish Orthopaedic Society

Wednesday 2 July • 13.30-15.00 • Amphi 450 • Chair: Prof Feza Korkusuz



Tendon Research is becoming active and we have been following universal updates on this hot topic. ORS is organizing ISMMS New Frontiers in Tendon Research Conference in NY next September (<http://www.ors.org/orsismms-new-frontiers-in-tendon-research/>). Peter C. Amadio, MD who received the CORR-ORS Richard A Brand Award will present his study entitled "Engineering Flexor Tendon Repair with Lubricant Cells and Cytokines in a Canine Model" on Feb 16, 2014 at the ORS. Several institutes in Turkey research tendon healing and generation. We have therefore decided to propose the name our session as "Tendon regeneration from bench bedside."

S3.1

Tenocyte and functional extracellular matrix mechanics.

Feza Korkusuz

Hacettepe University Medical Faculty, Dept of Sports Medicine, Ankara, Turkey

S3.2

Restoration of the tendon sheet.

Eftal Gudemmez

Koç University Medical Faculty, Dept of Orthopaedic Surgery and Traumatology, Mersin, Turkey

S3.3

What have we learned from animal models.

Volkan Oztuna

Mersin University Medical Faculty, Dept of Orthopaedic Surgery and Traumatology, Mersin, Turkey

S3.4

Peripheral nerve accompanying the tendon

Gürsel Leblebicioğlu

Hacettepe University Medical Faculty, Dept of Sports Medicine, Ankara, Turkey

S3.5

Multidisciplinary approach to tendon injury and repair.

Sait Ada

EMOT Hospital, izmir, Turkey

Guest Country: Turkey



S4 EU Reborne Project

Wednesday 2 July • 13.30-15.00 • Amphi 200 • Chair: Prof Enrique Gomez-Barrena & Dr Pierre Layrolle

Reborne This collaborative project has received €12 million from the European Union. Reborne aims at regenerating bone by using mesenchymal stem cells and biomaterials and to perform multi-center clinical trials in orthopaedic and maxillo-facial surgery. A large consortium of 24 participants with top world class laboratories, SMEs manufacturing biomaterials, GMP- cells producing facilities and hospitals are collaborating to reach ambitious clinical targets.

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n 241879.

S4.1

The role of biomaterials in new bone regeneration strategies

[Maria-Pau Ginebra](#)

Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Metallurgy, Technical University of Catalonia, Barcelona, Spain

S5 AO Foundation

Friday 4 July • 11.00-12.30 • Amphi 200 • Chair: Dr Geoff Richards & Dr Pierre Hoffmeyer

AO Foundation Orthopaedic surgeons and scientists recognize infection as one of the most serious and distressing complications of orthopaedic procedures. The AOTrauma organization has established a new Clinical Priority Program. The bone infection CPP will aim to achieve better understanding of bone infection, provide solutions for the most pressing clinical problems and have a positive impact on patient.

S5.1

Clinical problem & Clinical Research in the AOTrauma Clinical priority programme

[Volker Alt](#)

Department of Trauma Surgery University Hospital Giessen-Marburg, Giessen, Germany

S5.2

Preclinical studies in the in the AOTrauma Clinical Priority Program

[Fintan Moriarty](#)

AO Research Institute Davos, Davos, Switzerland

S4.2

Pre-clinical studies of bone regeneration using human mesenchymal stem cells with biphasic calcium phosphate.

[Meadhbh Brennan](#)

LPRO, Nantes, France

S4.3

Clinical trials on expanded MSCs to treat nonunions and avascular necrosis of the femoral head: Update on the REBORNE EU--7FP project.

[Enrique Gomez Barrena](#)

Autonomous University of Madrid, Madrid, Spain

S5.3

Nasal Colonization of Orthopedic surgeons with multi-resistant bacteria

[Mario Morgenstern](#)

Department of septic and reconstructive surgery, Berufsgenossenschaftliche Unfallklinik Murnau, Murnau, Germany

S5.4

Why infection remains a challenge for orthopedic surgeons?

[Pierre Hoffmeyer](#)

Division of Orthopaedics and Musculoskeletal Trauma, University Hospitals of Geneva, Geneva, Switzerland

orals overview

O1 Osteoporosis

Wednesday 2 July • 15.00-16.30 • Amphi 450 • Chair: Prof Dominique Heymann & Prof Ashley Blom

O1.1, 15.00

Selective inhibition of BET bromodomains epigenetic signaling increases bone volume and modulates osteoblasts and osteoclasts numbers.

Marc Baud'huin^{1,3}, François Lamoureux^{1,2}, Lidia Rodriguez Calleja^{1,2}, Camille Jacques^{1,2}, Martine Berreur^{1,2}, Bénédicte Brounais^{1,2}, James E. Bradner⁴, Dominique Heymann^{1,3}, Benjamin Ory^{1,2}

¹INSERM, UMR 957, 44035 Nantes, France, ²Physiopathologie de la Résorption Osseuse et Thérapie des Tumeurs Osseuses Primitives, 44035 Nantes, France, ³Nantes University Hospital, 44035 Nantes, France, ⁴Department of Medicine, Harvard Medical School, Boston Massachusetts 02115, USA

O1.2, 15.08

Does PGE1 vasodilator prevent orthopaedic implant-related infection in diabetes? Preliminary results in a mouse model.

Arianna Barbara Lovati¹, Carlo Luca Romanò¹, Lorenzo Monti^{1,3}, Christian Vassena¹, Sara Previdi², Lorenzo Drago^{1,3}

¹IRCCS Galeazzi Orthopaedic Institute, Milan, Italy, ²Istituto di Ricerche Farmacologiche Mario Negri, Milan, Italy, ³University of Milan, Milan, Italy

O1.3, 15.16

Zoledronic acid induces severe disruption of bone alveolar remodeling in a surgical mouse model of osteonecrosis of the jaws

Luis CORDOVA^{1,4}, Severine BATTAGLIA^{1,2}, Celine CHARRIER^{1,2}, Dominique HEYMANN^{1,2}

¹INSERM, UMR 957, Nantes, France, ²University of Nantes, Nantes Atlantique Universities, Laboratory of Pathophysiology of Bone Resorption and Therapy of Primary Bone Tumors, Nantes, France, ³Nantes University Hospital, Nantes, France, ⁴Department of Oral and Maxillofacial Surgery, San Borja Arriaran University Hospital - Faculty of Dentistry, University of Chile - CONICYT, Santiago, Chile

O1.4, 15.24

Effects of commonly used medications on bone tissue mineralization in an SaOS2 human bone cell line - an in-vitro study

Moshe Salai, Somjen Dalia, Roy Gigi, Oleg Dolkart

Division of Orthopedic Surgery, Tel-Aviv Sourasky Medical Center, the Sackler Faculty of Medicine, Tel-Aviv University, Tel Aviv, Israel

O1.5, 15.32

Potent Anti-Osteoporosis of Teriparatide in Ovariectomized(OVX) rats : the role of IL-17

SHUNPING WANG¹, CHICHEN LIN²

¹Orthopaedic department, Taichung Veterans General Hospital, Taichung, Taiwan, ²Institute of Biomedical Science, National Chung-Hsing University, Taichung, Taiwan

O1.6, 15.40

Risk of fracture modelling in healthy and osteoporotic tibia

Magnús Gíslason^{1,2}, Sylvie Coupaud², Keisuke Sasagawa³, Yuji Tanabe³, Mariel Purcell⁴, David Allan⁴, Elizabeth Tanner⁵

¹Reykjavik University, Reykjavik, Iceland, ²University of Strathclyde, Glasgow, UK, ³Niigata University, Niigata, Japan, ⁴Southern General Hospital, Glasgow, UK, ⁵University of Glasgow, Glasgow, UK

O1.7, 15.48

Neuropeptide Y Mediates Glucocorticoid Excess Induction of Fatty Marrow and Bone Loss

Yu-Shan Chen, Feng-Sheng Wang, Jih-Yang Ko

Kaohsing Chang Gung Memorial Hospital, Kaohsiung, Taiwan

O1.8, 15.56

Atypical fractures of the ulna and bisphosphonate therapy: A case report and systematic review of published case reports

Si Heng, Sharon Tan¹, S Saseendar², Hsi Ming Bryan Tan², Aditya Pawaskar², VP Kumar¹

¹Yong Loo Lin School of Medicine, Singapore, Singapore, ²Department of Orthopaedic Surgery, University Orthopaedic, Hand and Reconstructive Microsurgery Cluster, National University Health System (NUHS), Singapore, Singapore

O1.9, 16.04

BONE MINERAL DENSITY IN WOMEN WITH COLLES' FRACTURE

Vladyslav Povoroznyuk, Maxim Garkusha, Maryna Bystrytska

Institute of Gerontology NAMS Ukrain, Kyiv, Ukraine

O1.10, 16.12

IS TBS DIFFERENT IN HEALTHY EUROPEAN CAUCASIAN MEN AND WOMEN?: CREATION OF NORMATIVE SPINE TBS DATA FOR MEN

Vladyslav Povoroznyuk¹, L. Del Rio², S. Di Gregorio², F. Michelet³, N. Dzerovych¹, A. Musienko¹, R. Winzenrieth³

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O1.11, 16.20

A new screw design for osteoporotic bone. A bio-mechanical comparison.

Erik Wilde, Robert Wendlandt, Klaus Waizner, Arndt-Peter Schulz, Andreas Paech

Dept. of Trauma & Orthopedics, University Hospital Schleswig-Holstein, Luebeck, Germany

O2 Biomaterials I

Wednesday 2 July • 15.00-16.30 • Amphi 200 • Chair: Prof Maria-Pau Ginebra & Dr Damien Le Nihouannen

O2.1, 15.00

Hydrated polyurethane polymers to increase growth factor bioavailability in wound healing

Hans Smola^{1,2}, Greta Maier², Martin Junginger², Markus Kettel², Sigrun Smola³

¹University of Cologne, Cologne, Germany, ²Paul Hartmann AG, Heidenheim, Germany, ³Saarland University, Homburg, Germany

O2.2, 15.08

Engineering a cell adhesive surface using a novel oriented recombinant fibronectin coating strategy

CYRINE DRIDI^{1,2}, BALIGH MILADI¹, GUILHEM BOEUF¹, SYLVIE CHANGOTADE², FLORENCE POIRRIER², DIDIER LUTOMSK², ABDELATIF ELMSELM¹, AHMED ELMARJOU³

¹ecole de biologie industrielle, cergy, val d'oise/ île de france, France, ²Université Paris XIII, Bobigny, Seine-Saint-Denis/ île de france, France, ³INSTITUT CURIE, paris, île de France, France

O2.3, 15.16

Antibacterial efficiency of biomaterials with open porosity of 15% and total porosity of 20%

Ingaus Skadinis¹, Juta Kroica¹, Ilze Salma², Aigars Reinis¹, Marina Sokolova², Natalija Berza¹

¹Riga Stradins University, Biology and Microbiology Department, Riga, Latvia, ²Biomaterial Innovation and Development Centre, Riga Technical University, Riga, Latvia

O2.4, 15.24

Elution Characteristics From Two Commercially Available Growth Factor Products

Amit Govil, Sahil Jalota

Advanced Biologics, Carlsbad, CA, USA

O2.5, 15.32

Mechanical and biological characterisation of alkaline substituted orthophosphate bone substitutes containing meta- and di-phosphates

Moritz Klein¹, Georg Berger², Tim Pohlemann¹, Michael D. Menger¹, Patric Garcia²

¹University of Saarland, Homburg, Germany, ²Federal Institute for Material Research and Testing, Berlin, Germany, ³University of Münster, Münster, Germany

O2.6, 15.40

Grain size distribution and its effect on the mechanical properties in bone impaction grafting

David Putzer¹, Alexander Wurm¹, Debora Coraca-Huber¹, Werner Schmoelz², Michael Nogler¹

¹Innsbruck Medical University, Department of Orthopaedics, Experimental Orthopaedics, Innsbruck, Tirol, Austria, ²Innsbruck Medical University, Department of Trauma Surgery, Innsbruck, Tirol, Austria

O2.7, 15.48

Effect of manganese substitution on sintered hydroxyapatite: a solid-state NMR study

Joanna Kolmas¹, Anna Ślósarczyk², Wacław Kolodziejski¹

¹Medical University of Warsaw, Warsaw, Poland, ²AGH University of Science and Technology, Cracow, Poland

O2.8, 15.56

Subsidence of bioactive glass granules, morselized cancellous allograft, and tricalcium phosphate granules in an in situ defect model

Dennis Hulsen^{1,2}, Jan Geurts¹, Bert van Rietbergen², Jacobus Arts^{1,2}

¹Maastricht University Medical Centre, Maastricht, The Netherlands, ²Eindhoven University of Technology, Eindhoven, The Netherlands

O2.9, 16.04

Evaluation of resorbable magnesium plates and screws using a miniswine maxillofacial fracture repair model

Cathy Tkaczyk¹, Thomas Imwinkelried², Michel Assad¹, Benoît Schaller³, Tateyuki Iizuka³, Stefan Beck²

¹AccelLAB, Boisbriand, QC, Canada, ²Synthes GmbH, Oberdorf, Switzerland, ³University Hospital of Bern (Inselspital), Department of Cranio-Maxillofacial Surgery, Bern, Switzerland

O2.10, 16.12

Degradation Rates and Cellular Responses to Bioresorbable Magnesium Implants for Orthopaedic Applications.

Olga Charveva^{1,2}, Daniel Zukowski¹, Frank Feyerabend³, Katrin Lips²

¹aap Biomaterials, Dieburg, Germany, ²Justus-Liebig University, Experimental Trauma Surgery, Giessen, Germany, ³Helmholtz Zentrum Geesthacht, Geesthacht, Germany

O2.11, 16.20

Post-operative radiology delays in a Major Trauma Centre: the bigger picture

Gemma Green, Elin Cox, Arash Aframian, Caroline Hing

St Georges Hospital, London, UK

O3 Bone Regeneration & Tissue Engineering I

Wednesday 2 July • 17.00-18.30 • Amphi 450 • Chair: Dr Florelle Gindraux & Prof Stuart Goodman

O3.1, 17.00

A mechanical tunable Hyaluronan hydrogel for endochondral bone tissue engineering

[Claudia Loebel](#)^{1,2}, [Matteo D'Este](#)¹, [Mauro Alini](#)¹, [David Eglin](#)¹

¹AO Research Institute Davos, Davos Platz, Switzerland, ²ETH Zurich, Zurich, Switzerland

O3.2, 17.08

Role of Platelet-released growth factors in detoxification of reactive oxygen species in osteoblasts

[Mersedeh Tohidnezhad](#)¹, [Christoph-Jan Wruck](#)¹, [Alexander Slowik](#)^{1,2}, [Nisreen Kweider](#)¹, [Rainer Beckmann](#)¹, [Andreas Bayer](#)³, [Holger Jahr](#)⁴, [Daiké Varoga](#)³, [Sebastian Lippross](#)³, [Thomas Pufe](#)¹

¹Department of Anatomy and Cellbiology, RWTH Aachen University, Aachen, Germany, ²Institute of Neuroanatomy, RWTH Aachen University, Aachen, Germany, ³Department of Trauma Surgery, University Hospital of Schleswig Holstein, Campus Kiel, Kiel, Germany, ⁴Department of orthopaedic surgery, RWTH Aachen University, Aachen, Germany

O3.3, 17.16

Osteoclast differentiation from blood precursors is influenced by calcium-phosphate substrates

[Gemma Di Pompo](#)^{1,2}, [Gabriela Ciapetti](#)¹, [Sofia Avnet](#)¹, [Edgar B Montufar](#)³, [Maria Pau Ginebra](#)³, [Nicola Baldini](#)^{1,2}

¹Orthopaedic Pathophysiology and Regenerative Medicine Unit, Istituto Ortopedico Rizzoli, Bologna, Italy, ²Department of Biomedical and Neuromotor Sciences, University of Bologna, Bologna, Italy, ³Department of Materials Science and Metallurgical Engineering, Biomaterials, Biomechanics and Tissue Engineering Group, Universitat Politècnica de Catalunya, Barcelona, Spain

O3.4, 17.24

Osteogenic and osteoclastic differentiation of human mesenchymal stem cells and monocytes in a miniaturized three-dimensional culture with mineral granules

[Gambin Anne Laure](#)^{1,2}, [Renaud Audrey](#)¹, [Charrier Celine](#)^{1,2}, [Hulin Philippe](#)³, [Louarn Guy](#)⁴, [Heymann Dominique](#)^{1,3}, [Layrolle Pierre](#)^{1,2}, [Trichet Valerie](#)^{1,2}

¹INSERM, UMR957, Nantes, France, ²University of Nantes, LPRO, EA3822, Nantes, France, ³MicroPiCell, SFR Santé Francois Bonamy, UMS 016, CNRS 3556, Nantes, France, ⁴Laboratoire de Physique des Matériaux et Nanostructures, UMR 6502, Nantes, France, ⁵chu, hotel dieu, Nantes, France

O3.5, 17.32

Dendrimers Presenting Spatially Controlled Clusters of Binding Epitopes for Tailoring hMSCs Microenvironments.

[Ryan Seelbach](#)^{1,2}, [Peter Fransen](#)³, [Fabian Duttenhoefer](#)³, [Miriam Royo](#)³, [Sebastian Sauerbier](#)⁴, [Mauro Alini](#)¹, [Marianna Peroglio](#)¹, [Alvaro Mata](#)⁵, [David Eglin](#)¹

¹AO Research Institute Davos, Davos, Switzerland, ²Universitat de Barcelona, Barcelona, Spain, ³Biomedical Research Networking Center in Bioengineering, Biomaterials and Nanomedicine, Barcelona, Spain, ⁴Universitätsklinik Freiburg, Freiburg, Germany, ⁵Queen Mary, University of London, London, UK

O3.6, 17.40

Forming Bone-like Tissues in the Self-made Bioreactor System for Bone Tissue Engineering

[Ching-Yun Chen](#)¹, [Cherng-Jyh Ke](#)², [Jui-Sheng Sun](#)^{2,3}, [Feng-Hui Lin](#)¹

¹Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, ²Department of Orthopedics, College of Medicine, National Taiwan University, Taipei, Taiwan, ³Department of Orthopedics, National Taiwan University Hospital, Taipei, Taiwan

O3.7, 17.48

Clay nanoparticles enhance bone cell osteogenic response to Bone Morphogenic Protein

[David Gibbs](#), [Richard Orefo](#), [Jonathan Dawson](#)

University of Southampton, Southampton, UK

O3.8, 17.56

Osteoblast-like Cells Incubated on Porous Stoichiometric HA Scaffolds are Sensitive to Dynamic Ion Exchange with Silicate-substituted Bone Graft Materials

[Navinderpal Kaur Chana](#)¹, [Simon Charles Fielding Rawlinson](#)², [Karin Angela Hing](#)¹

¹Queen Mary University of London, School of Engineering and Materials Science, London, UK, ²Research Centre for Oral Growth and Development, Barts and The London School of Medicine and Dentistry, London, UK

O3.9, 18.04

Influence of Media Replenishment on Dynamic Ion Exchange with Silicate-substituted Bone Graft Substitutes and Subsequent Osteoblast-like Cell Response

[Navinderpal Kaur Chana](#)¹, [Simon Charles Fielding Rawlinson](#)², [Karin Angela Hing](#)¹

¹Queen Mary University of London, School of Engineering and Materials Science, London, UK, ²Research Centre for Oral Growth and Development, Barts and The London School of Medicine and Dentistry, London, UK

O3.10, 18.12

BMP-2 and BMP-9 effect on preosteoblast differentiation: identification of a growth factor mimicking the serum action on BMP-9 cell response

[Marc-Antoine Lauzon](#), [Alex Daviau](#), [Olivier Drevelle](#), [Bernard Marcos](#), [Nathalie Faucheux](#)

Université de Sherbrooke, Sherbrooke, Québec, Canada

O3.11, 18.20

Oncostatin M, an inflammatory cytokine produced by monocytes / macrophages, supports intramembranous bone healing in a mouse model of tibia injury.

[Boutet Marie-Astrid](#)^{1,2}, [Guihard Pierre](#)^{1,2}, [Brounais Bénédicte](#)^{1,2}, [Gambin Anne-Laure](#)^{1,2}, [Amiaud Jérôme](#)^{1,2}, [Renaud Audrey](#)^{1,2}, [Berreur Martine](#)^{1,2}, [Redini Françoise](#)^{1,2}, [Heymann Dominique](#)^{1,2}, [Layrolle Pierre](#)^{1,2}, [Blanchard Frédéric](#)^{1,2}

¹Inserm UMR 957, Nantes, France, ²Université de Nantes, Nantes, France

O4 Implant Surface Modifications I

Wednesday 2 July • 17.00-18.30 • Amphi 200 • Chair: Prof Enrique Gomez-Barrena & Prof Philippe Rosset

O4.1, 17.00

Novel surface modification of ceramic implants with glass solder matrices for improved osseointegration

[Enrico Mick](#)¹, [Jana Markhoff](#)¹, [Aurica Mitrovic](#)², [Anika Jonitz-Heincke](#)¹, [Rainer Bader](#)¹

¹University Medicine Rostock, Department of Orthopaedics, Biomechanics and Implant Technology Research Laboratory, Rostock, Mecklenburg-Vorpommern, Germany, ²ZM Präzisionsdentalttechnik GmbH, Rostock, Mecklenburg-Vorpommern, Germany

O4.2, 17.08

Early bacterial attachment to modified Ti6Al4V surface

[Miguel Ángel Pacha-Olivenza](#)^{1,2}, [Abraham Rodríguez-Cano](#)^{2,1}, [Amparo M. Gallardo-Moreno](#)^{2,1}, [José M. Bruque](#)^{2,1}, [M. Luisa González-Martín](#)^{2,1}

¹Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Badajoz, Spain, ²Dept. Applied Physics, University of Extremadura, Badajoz, Spain

O4.3, 17.16

An in vitro approach to "the race for the surface" theory: Staphylococcus spp. and osteoblasts in a competitive assay.

[Marta Martínez-Pérez](#)¹, [Concepción Pérez-Jorge](#)¹, [Daniel Lozano](#)¹, [Ramón Pérez-Tanoira](#)¹, [Ana Conde](#)², [Maria A. Arenas](#)², [Juan Manuel Hernández-López](#)², [Juan J. de Damborenea](#)², [Pedro Esbrit](#)¹, [Enrique Gómez-Barrena](#)³, [Jaime Esteban](#)¹

¹IIS-Fundación Jiménez Díaz Hospital, Madrid, Spain, ²CENIM-CSIC, Madrid, Spain, ³Hospital la Paz, Madrid, Spain

O4.4, 17.24

Antibacterial coating by plasma electrolytic oxidation

[Cyrille Gasquères](#)¹, [Amir Eliezer](#)², [Eric Devine](#)³, [Gregor Schneider](#)⁴, [Katrin Susanne Lips](#)⁵, [Daniel Zukowski](#)¹

¹aap Implantate AG, Berlin, Germany, ²Corrosion Research Center, Nano-Bio & Advanced Materials, Sami Shamon College of Engineering, Beer-Sheva, Israel, ³EXCORLab GmbH, Obernburg, Germany, ⁴rent a scientist GmbH, Regensburg, Germany, ⁵Justus Liebig, Universität Gießen, Klinik für Poliklinik und Unfallchirurgie, Labor für Experimentelle Unfallchirurgie, Gießen, Germany

O4.5, 17.32

Efficacy of a lipid-and-polymer-based PolyPid drug delivery coating containing doxycycline to prevent implant-related infection

[Noam Emanuel](#)², [Or Cohen](#)², [Yosef Rosenfeld](#)², [Geoff Richards](#)¹, [Fintan Moriarty](#)¹

¹AO Research Institute Davos, Davos, Switzerland, ²PolyPid Ltd, Tel Aviv, Israel

O4.6, 17.40

PREDICTIONS ON THE OSTEOGENESIS OF HYDROTHERMALLY COATED TI-BASED IMPLANTS

[Martina Lorenzetti](#)^{1,2}, [Olga Dakischew](#)³, [Katja Trinkaus](#)³, [Katrin Lips](#)³, [Reinhard Schnettler](#)³, [Spomenka Kobe](#)^{1,2}, [Saša Novak](#)^{1,2}

¹Jožef Stefan Institute, Ljubljana, Slovenia, ²Jožef Stefan International Postgraduate School, Ljubljana, Slovenia, ³University-Hospital of Giessen and Marburg, Giessen, Germany

O4.7, 17.48

Assessing the surface charge and protein adsorption on hydrothermally treated titanium by the zeta potential

[Martina Lorenzetti](#)¹, [Thomas Luxbacher](#)¹, [Sasa Novak](#)³, [Spomenka Kobe](#)³, [Cyril Defontaine](#)²

¹Anton Paar GmbH, Graz, Austria, ²Anton Paar France S.A.S., Les Ulis, France, ³Institut Jozef Stefan, Ljubljana, Slovenia

O4.8, 17.56

Collagen type I pre-adsorption on poly(NaSS) grafted Ti6Al4V surfaces enhances MC3T3-E1 osteoblast-like cells matrix mineralization

[Helena Felgueiras](#), [Véronique Migonney](#)

LBPS-CSPBAT UMR CNRS 7244, Université Paris 13, Villetaneuse, Paris, France

O4.9, 18.04

Enhancement of integrin-mediated cell attachment by pre-adsorbed model proteins on poly(NaSS)-functionalized Ti6Al4V substrates: a QCM-D study

[Helena Felgueiras](#)¹, [Sven D. Sommerfeld](#)², [N. Sanjeeva Murthy](#)², [Joachim Kohn](#)², [Véronique Migonney](#)¹

¹LBPS-CSPBAT UMR CNRS 7244, Université Paris 13, Villetaneuse, Paris, France, ²New Jersey Center for Biomaterials, Rutgers University, New Jersey, USA

O4.10, 18.12

Oxidized Zirconium Femoral Component for TKA: 10 years follow up

[Massimo Innocenti](#), [Christian Carulli](#), [Fabrizio Matassi](#), [Lorenzo Nistri](#), [Roberto Civinini](#)

Orthopedic Clinic of Florence, Florence, Italy

05 Bone Regeneration & Tissue Engineering II

Thursday 3 July • 09.00-10.30 • Amphi 450 • Chair: Dr Arnaud Scherberich & Prof Denitsa Docheva

05.1, 9.00

Keynote session : Osteodifferentiation of human amniotic membrane: outcome for clinical uses

[Florelle GINDRAUX](#)

CHU, Besançon, France

05.2, 9.16

Comparison of Masquelet's Subcutaneous Induced Membranes by PMMA vs. Silicone spacers and the influence of irradiation

[Erwan de Monès](#)^{1,2}, [Silke Schlaubitz](#)², [Jean-Marie d'Elbée](#)¹, [Reine Bareille](#)¹, [Lionel Couraud](#)¹, [Chantal Bourget](#)¹, [Marlène Durand](#)², [Jean-Christophe Fricain](#)¹

¹INSERM U1026, Bioingénierie tissulaire, 33000 Bordeaux, France, ²CHU de Bordeaux, Service d'ORL, 33000 Bordeaux, France, ³CHU de Bordeaux, CIC-IT BioDiMI, 33000 Bordeaux, France

05.3, 9.24

Optimisation of macromolecular crowding conditions in vitro for enhanced deposition of tissue-specific extracellular matrix

[Diana Gaspar](#), [Abhay Pandit](#), [Dimitrios Zeugolis](#)

Network of Excellence for Functional Biomaterials, National University of Ireland Galway, Galway, Ireland

05.4, 9.32

Perfusion bioreactor for engineering bone constructs: Bone regeneration in sheep using coral scaffold and autologous mesenchymal stem cells

[Veronique Viateau](#)¹, [Mathieu Manassero](#)^{2,1}, [Adeline Decambron](#)^{1,2}, [Karim Oudina](#)¹, [Delphine Logeart Avramoglou](#)¹, [Herve Petite](#)¹, [Morad Bensedhoum](#)¹

¹CNRS, University Paris 7, Paris, France, ²Ecole Vétérinaire Maison Alfort, Maison Alfort, France

05.5, 9.40

Effect of shear stress and hydrostatic pressure on early human MSCs response to mechanical stimuli

[Pierre Becquart](#)¹, [Magali Cruet](#)², [Hervé Petite](#)¹, [Delphine Logeart-Avramoglou](#)¹, [Thierry Hoc](#)², [Morad Bensedhoum](#)¹

¹CNRS, INSIS, Paris, France, ²Ecole Centrale Lyon, Lyon, France

05.6, 9.48

Human muscle-derived induced pluripotent stem cells loaded onto coral scaffolds are osteoinductive in an ectopic mouse model.

[Karim OUDINA](#)¹, [Joseph PAQUET](#)¹, [Emmanuelle MASSOURIDES](#)², [Morad BENSIDHOUM](#)¹, [Mickael DESCHEPPER](#)¹, [Peter UPEX](#)¹, [Christian PINSET](#)², [Hervé PETITE](#)¹

¹CNRS UMR7052-B2OA, Université Paris 7, Paris, France, ²ISTEM/CECS, Evry, France

05.7, 9.56

Mechanism of action of mesenchymal stromal stem cells in union with calcium phosphate ceramic for bone regeneration

[Gamblin Anne Laure](#)¹, [Brennan Meadhbh](#)¹, [Renaud Audrey](#)¹, [Charrier Celine](#)¹, [Heymann Dominique](#)^{1,2}, [Trichet Valerie](#)^{1,2}, [Layrolle Pierre](#)¹

¹INSERM, UMR957, Nantes, France, ²University of Nantes, LPRO, EA3822, Nantes, France

05.8, 10.04

Human mesenchymal stromal cells survive and directly contribute to bone regeneration in vivo

[Julie Leotot](#)^{1,2}, [Angélique Lebouvier](#)^{1,2}, [Philippe Hernigou](#)^{1,3}, [Philippe Bierling](#)^{2,4}, [Hélène Rouard](#)^{1,2}, [Nathalie Chevallier](#)^{1,2}

¹Université Paris-Est Créteil, Faculté de médecine, Laboratoire de "Bioingénierie Cellulaire, Tissulaire et Sanguine", Créteil, France, ²Etablissement Français du Sang d'Ile-de-France, Unité d'Ingénierie et de Thérapie Cellulaire, Créteil, France, ³Service de Chirurgie Orthopédique et Traumatologique, AP-HP Hôpital Henri-Mondor, Créteil, France, ⁴INSERM UMR955, Paris-Est University, Créteil, France

05.9, 10.12

Non-invasive biomechanical monitoring of bone healing in a dynamized bone defect in sheep

[Ursula Eberli](#), [Ronald Schwyn](#), [Manuela Ernst](#), [Ivan Zderic](#), [Markus Windolf](#), [Vincent Stadelmann](#)

AO Research Institute, Davos Platz, Switzerland

06 Biomechanics I

Thursday 3 July • 09.00-10.30 • Amphi 200 • Chair: Dr Stijn Bolink & Prof Edward Valstar

06.1, 9.00

Vibration-based Fixation Assessment of Tibial TKA Components: A Numerical and Experimental In Vitro Study

[Tom Vander Sloten](#)², [Koen De Landsheer](#)², [Steven Leuridan](#)¹, [Quentin Goossens](#)^{2,1}, [Leonard Pastrav](#)², [Kathleen Denis](#)^{2,1}, [Hendrik Delport](#)^{1,4}, [Wim Desmet](#)³, [Jos Vander Sloten](#)¹

¹KU Leuven, Biomechanics Section, Leuven, Belgium, ²Groep T, Leuven, Belgium, ³KU Leuven, PMA, Leuven, Belgium, ⁴UZ Pellenberg, Leuven, Belgium

06.2, 9.08

Full field strain evaluation of sMCL during ex-vivo experiments

[Matthias Verstraete](#)^{1,2}, [Thomas Luyckx](#)^{1,3}, [Karel De Roo](#)¹, [Wim De Waele](#)², [Johan Bellemans](#)³, [Jan Victor](#)¹

¹Ghent University - Dept. of Orthopaedics and Traumatology, Ghent, Belgium, ²Ghent University - Dept. of Mechanical Construction and Production, Ghent, Belgium, ³University Hospitals Leuven - Dept. of Orthopaedic Surgery and Traumatology, Leuven, Belgium

06.3, 9.16

Initial fixation stability of two types of cementless TKA femoral implants

[Bo Gao](#), [Nick Stroud](#), [Laurent Angibaud](#)

Exactech, Gainesville, USA

06.4, 9.24

Predict TKA implant axial rotation constraint using Finite Element Analysis

[Bo Gao](#), [Laurent Angibaud](#)

Exactech, Gainesville, USA

06.5, 9.32

Prediction of ligament behaviour and knee kinematics for both intact knee and implanted knee during squat motion

[Valentine Vanheule](#)^{1,2}, [Michael Skipper Andersen](#)³, [Roel Wirix-Speetjens](#)¹, [Ilse Jonkers](#)⁴, [Jos Vander Sloten](#)², [Jan Victor](#)⁵

¹Materialise N.V., Leuven, Belgium, ²Biomechanics section, KU Leuven, Leuven, Belgium, ³Department of Mechanical and Manufacturing Engineering, Aalborg university, Aalborg, Denmark, ⁴Department of Kinesiology, KU Leuven, Leuven, Belgium, ⁵Department of Physical Medicine and Orthopedic Surgery, Ghent University, Ghent, Belgium

06.6, 9.40

Actual physical activity monitoring using single accelerometer in patients with end-stage knee osteoarthritis, TKA patients and healthy subjects.

[Loek Verlaan](#), [Ide Heyligers](#), [Bernd Grimm](#), [Rachel Senden](#)

Atrium MC AHORSE, Heerlen, The Netherlands

06.7, 9.48

A Virtual Hand Assessment System for Efficient Measures of Hand Rehabilitation

[Bilal Nasser](#), [Heba Lakany](#), [Bernard Conway](#)

University of Strathclyde, Glasgow, UK

06.8, 9.56

Inertia based functional scoring of the shoulder in subacromial impingement syndrome: a 5-year follow-up study.

[Rob Korver](#), [Rachel Senden](#), [Ide Heyligers](#), [Bernd Grimm](#)

AHORSE Research Foundation, Department of Orthopaedic Surgery and Traumatology, Atrium Medical Center Parkstad Heerlen, Heerlen, The Netherlands

06.9, 10.04

Telemetric Hallux Valgus Deformity Correction Shoes

[Hasan HAVITCIOGLU](#)^{1,2}, [Erdem KUMTEPE](#)², [Fatih ERTEM](#)²

¹Dokuz Eylul University, Medicine Faculty, Department of Orthopaedics and Traumatology, Izmir, Turkey, ²Dokuz Eylul University, The Institute of Health Science, Department of Biomechanics, Izmir, Turkey

06.10, 10.12

Influence of stepwise removal of UHMWPE sublaminar wires on segmental stability in long segment instrumentation for early onset scoliosis correction

[Alex Roth](#)¹, [Albert van der Veen](#)², [Paul Willems](#)¹, [Jacobus Arts](#)¹, [Lodewijk van Rhijn](#)¹

¹Maastricht University Medical Center, Maastricht, The Netherlands, ²VU University Medical Center, Amsterdam, The Netherlands

06.11, 10.20

Towards routine motion analysis in clinical practice: inertial sensor versus optoelectronic motion capture system.

[Hamed Naisas](#), [Stijn Bolink](#), [Rachel Senden](#), [Bernd Grimm](#), [Ide Heyligers](#)

AHORSE, Atrium Medical Centre, Heerlen, The Netherlands

07 Infection & Trauma I

Thursday 3 July • 11.00-12.30 • Amphi 450 • Chair: Prof Chris Arts & Dr Didier Mainard

07.1, 11.00

Wound Complications Following Locking Plate Fixation of Distal Fibula Fractures

Christopher Gee, Alexander Vaughan, Thomas Jackson, Khadir Mohammed, Simon Kavanagh

St Richard's Hospital, Chichester, UK

07.2, 11.08

Cronobiological study in Traumatology

Francisco Ardura-Araon, David Cesar Noriega-Gonzalez, Carlos Barrios-Pitarque, Jesus Andres-De Llano, Jose Ramon Garmendia-Leiza

¹Clinical University Hospital of Valladolid, Valladolid, Spain, ²Catholic University of Valencia, Valencia, Spain, ³Palencia University Hospital Complex, Palencia, Spain, ⁴Jardinillos Primary Care, Palencia, Spain

07.3, 11.16

Acceleration of healing of long bone fractures in patients with concomitant head or spinal cord injuries

Fathy Khalaf, Elijah Kehinde, Sundus Hussein, Ahmed Mostafa

¹Department of Orthopaedic Surgery, Jahra Hospital, Kuwait Foundation, Kuwait, ²Faculty of Medicine, Kuwait University, Kuwait Foundation, Kuwait, ³Department of Pathology, Mubarak Al-Kabeer Hospital, Kuwait, Kuwait Foundation for, Kuwait

07.4, 11.24

Clinical Results of Low-intensity Pulsed Ultrasound for Nonunions or Delayed Union

Nobuyuki Takenaka, Yukihiro Arai, Yoshinobu Watanabe, Mitsuru Hirose, Narutaka Katoh, Motoyuki Takaki, Takashi Matsushita

Dept. Orthopaedic Surg. Teikyo Univ. School of Med., Tokyo Kaga 2-11-1, Japan

07.5, 11.32

Outcome of a computer-assisted navigation system to optimize lag screw positioning in the Gamma3 system compared with conventional technique.

Erik Wilde, Jan Herzog, Robert Wendlandt, Manuel Schroeder, Heiko Gottschling, Rainer Burgkart, Arndt-Peter Schulz

¹Dept. of Trauma & Orthopedics, University Hospital Schleswig-Holstein, Lübeck, Germany, ²Clinic for Orthopaedics and Traumatology, Technische Universität München (TUM), München, Germany

07.6, 11.40

Radiological Outcome and Patient Reported Function Following Intramedullary Tibial Nailing: Comparison of the Retropatellar and Infrapatellar Approach

Mark Jones, Michael Parry, Michael Whitehouse, Steve Mitchell

¹University Hospitals Bristol NHS Foundation Trust, Bristol, UK, ²University Of Bristol, Bristol, UK

07.7, 11.48

Outcomes of internal fixation with PERI-LOC proximal humerus locking plate for proximal humeral fractures.

Yuen Chan, James Ricketts, Veesh Selvaratnam, Peter Ralte, Nasir Shah

Warrington and Halton NHS Trust, Warrington, UK

07.8, 11.56

Junior doctors' compliance with guidelines for high INR correction in patients with a neck of femur fracture and its effect on time delay to surgery

Waleed Riaz, Zainab Batool, Meena Nagarajan, Basil Budair, Dip Chakrabarti, Paresh Sonsale

Good Hope Hospital, Heart of England Foundation Trust, Sutton Coldfield, UK

07.9, 12.04

Childhood Obesity As A Risk Factor For Upper Extremity Fractures

Ali Abdulkarim, Andrew Moriarity, Eoin Sheehan

Midland Regional Hospital, Tullamore, Co Offaly, Ireland

07.10, 12.12

Agricultural and Equestrian Injuries in the Irish Midland.

Ali Abdulkarim, Peter Coffey, Eoin Sheehan, Andrew Moriarty

Midland Regional Hospital, Tullamore, Co Offaly, Ireland

07.11, 12.20

Long term radiological assessment of achondroplastic patients who have undergone lower limb lengthening using the Ilizarov method

Maria Stefanou, Panayiotis Papagelopoulos, Dimitrios Mastrokoulos, Chrisa Tzoumaka-Bakoula, Konstantinos Pistevos, Nikolaos Papandreou, Dimitrios Pasparakis

¹2nd Orthopaedic Department, Panayiotis & Aglaia Kyriakou Children's Hospital, Athens, Greece, ²1st Orthopaedic Department, University General Hospital 'Attikon', Athens, Greece

08 Biomaterials II

Thursday 3 July • 11.00-12.30 • Amphi 200 • Chair: Dr David Pastorino & Prof Feza Korkusuz

08.1, 11.00

The Aggregation of Internalised Calcium Phosphate Nanoparticles Influences Biological Response

Richard Williams, Liam Grover

University of Birmingham, Birmingham, UK

08.2, 11.08

Nanomechanical evaluation of newly-formed bone regenerated by magnetic scaffolds

Michele Bianchi, Marco Boi, Maria Sartori, Gianluca Giavaresi, Nicola Lopomo, Alessandro Ortolani, Anna Tampieri, Valentin Alek Dediu, Maurilio Marccacci, Alessandro Russo

¹Rizzoli Orthopaedic Institute, Bologna, Italy, ²ISTEC-CNR, Bologna, Italy, ³ISMN-CNR, Bologna, Italy

08.3, 11.16

Mechanical properties of a bioactive glass granules/morselized allograft mixture in confined compression.

Dennis Hulsen, Jan Geurts, Bert van Rietbergen, Jacobus Arts

¹Maastricht University Medical Centre, Maastricht, The Netherlands, ²Eindhoven University of Technology, Eindhoven, The Netherlands

08.4, 11.24

Characterization, Biocompatibility and Bioactivity of Strontium/Zinc Doped Hydroxyapatite Nanoparticles Synthesized by Sol-Gel Method

Pimsiree Suwanna, Likit Temprom, Suphasinee Seet, Patcharaporn Tippayawat

Khon Kaen University, Khon Kaen, Thailand

08.5, 11.32

PEEK/Calcium sulphate composites for hard tissue repair

Erik Hughes, Roger Wise, Liam Grover

¹University of Birmingham, Birmingham, UK, ²TWI Ltd, Cambridge, UK

08.6, 11.40

Calcium phosphate coatings on carbon fibers cloth for their use as biomaterial.

Quentin Picard, Sandrine Delpeux, Jérôme Chancalon, Nathalie Rochet, Franck Fayon, Fabienne Warmont, Sergey Mikhailovsky, Sylvie Bonnamy

¹Centre de Recherche sur la Matière Divisée, CNRS/Université d'Orléans, Orléans, France, ²Institut de biologie Valrose INSERM/BIPOA, Nice, France, ³Conditions extrêmes et Matériaux: Haute Température et Irradiation, CNRS, Orléans, France, ⁴School of Pharmacy and Biomolecular Sciences, University of Brighton, Brighton, UK

08.7, 11.48

Osteoblastic differentiation and cell infiltration of human mesenchymal stem cells are superior to novel jet-sprayed nanofiber scaffolds compared to electrospun scaffolds

Meadhbh Brennan, Audrey Renaud, Cyril D'Arros, Dominique Heymann, Pierre Layrolle

¹INSERM UMR957, Laboratory of the Pathophysiology of Bone Resorption, Faculty of Medicine, University of Nantes, Nantes, France, ²Biomedical Tissues SAS, IRTUN, Nantes, France

08.8, 11.56

Ready-to-use injectable Calcium Phosphate Foams: Simplifying the surgeon's job

David Pastorino, Malgorzata Marcinkowska, Cristina Canal, Maria-Pau Ginebra

¹Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Metallurgy, Technical University of Catalonia, Barcelona, Spain, ²Subtilis Biomaterials S.L., Barcelona, Spain

08.9, 12.04

In vivo resorption of biomimetic hydroxyapatite/collagen composites: injectable cements versus pre-set microspheres.

Erika Silva, Roman A. Perez, Jordi Franch, Cristina Manzanera, Maria-Pau Ginebra

¹Biomaterials, Biomechanics and Tissue Engineering Group, Department of Materials Science and Metallurgy, Technical University of Catalonia, Barcelona, Spain, ²Department of Animal Medicine and Surgery, Autonomous University of Barcelona, Barcelona, Spain, ³Department of Pathology and Experimental Therapy, Bellvitge Health Sciences Campus, University of Barcelona, Barcelona, Spain

08.10, 12.12

Local tissue effects and performance evaluation of several dental bone grafting material devices in dogs

Augusto André Baptista, Catherine Wittmann, Capucine Rondot, Antoine Alvens, Georges Boivin, Christian Gagnieu, Patricia Forest, Jean-Pierre Bernard

¹Private practice, Remich, Luxembourg, ²Ecole de Chirurgie, Université de Lorraine, Nancy, France, ³Faculté d'Odontologie, Nancy, France, ⁴Biom'Up S.A., Saint-Priest, France, ⁵NAMSA, Chasse-sur-Rhône, France, ⁶INSERM, UMR1033, Equipe Qualité Osseuse et Marqueurs Biologiques, Lyon, France, ⁷Université de Lyon, Lyon, France, ⁸MATEIS, UMR 5510, Equipe Interactions Biologiques et Biomateriaux, Lyon, France, ⁹INSA de Lyon, Université Claude Bernard, Lyon, France, ¹⁰Faculté de Médecine Division de Stomatologie Chirurgie Orale et Radiologie Dentaire et Maxillofaciale, Genève, Switzerland, ¹¹Université de Genève, Genève, Switzerland

08.11, 12.20

Medical Documentation in a Major Trauma Centre: Can we improve patient safety?

Gemma Green, Arash Aframian, Louise Jones, Mark Harris, Jason Bernard

St Georges Hospital, London, UK

O9 Osteoarthritis

Thursday 3 July • 14.00-15.00 • Amphi 450 • Chair: Dr Frederic Blanchard & Dr Ashley Blom

O9.1, 14.00

Evaluation of the accuracy of the subluxation index: 2D versus 3D

Matthijs Jacxsens¹, Andreas Müller¹, Victor Valderrabano¹, Alexander Van Tonge², Lieven De Wilde²

¹University Hospital of Basel, Basel, Switzerland, ²Gent University Hospital, Gent, Belgium

O9.2, 14.08

Spatio-temporal parameters of the gait in various severities of knee osteoarthritis

Zohreh Shafizadegan¹, Mohammad Taghi Karimi², Zahra Sadat Rezaeian³, Fatemeh Shafizadegan³

¹rehabilitation student research center(Treata), Faculty of Rehabilitation Science, Isfahan University of Medical Science, Isfahan, Iran, ²MusculoSkeletal Research Center, Isfahan University of Medical Science, Isfahan, Iran, ³Post graduated student of Artificial Intelligence, Faculty of Computer Engineering, University of Isfahan, Isfahan, Iran

O9.3, 14.16

Evidence for an inflammatory and a degenerative role of the infrapatellar fat pad in osteoarthritis.

Didier MAINARD, Jean-Baptiste GROSS, Cecile GUILLAUME, Pascale GEGOUT-POTTIE, Nathalie PRESLE

UMR 7365 CNRS-University of Lorraine, Vandoeuvre les Nancy, France

O9.4, 14.24

Meniscus contribution to the Hydrodynamic lubrication of the knee Joint

Farid Amirouche¹, Roberto D'Amato², Giovanni F. Solitro¹

¹University of Illinois at Chicago, Chicago, IL, USA, ²Universidad Politecnica de Madrid, Madrid, Spain

O9.5, 14.32

MicroRNA-29a Repression of Th17 Immune Reactions Ameliorates Cartilage Destruction and Synovial Fibrosis in Osteoarthritic Knees

Feng-Sheng Wang, Pei-Chin Chuang, Yi-Chih Sun, Jih-Yang Ko

Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

O9.6, 14.40

A mouse model of surgical osteoarthritis, induced by destabilization of the medial meniscus, for the evaluation of a peptidyl-glucosamine derivative

Francesca Veronesi¹, Anna Scotto d'Abusco², Rosa Maria Borzi³, Giovanna Desando³, Eleonora Olivotto³, Brunella Grigolo^{3,4}, Gianluca Giavaresi^{1,5}, Lucia Martini^{1,5}, Milena Fini^{1,5}

¹Laboratory of Preclinical and Surgical Studies, Rizzoli Orthopaedic Institute, Bologna, Italy, ²Department of Biochemical Sciences, Sapienza University of Roma, Roma, Italy, ³Laboratory of Immunorheumatology and Tissue Regeneration, Rizzoli Orthopaedic Institute, Bologna, Italy, ⁴Laboratory RAMSES, Rizzoli Orthopaedic Institute, Bologna, Italy, ⁵Laboratory of Biocompatibility, Innovative Technologies and Advanced Therapies, Department Rizzoli RIT, Rizzoli Orthopaedic Institute, Bologna, Italy

O9.7, 14.48

Heat Shock Protein 60 Stabilizes Cartilage Integrity in Osteoarthritic Knees

Yi-Chih Sun, Feng-Sheng Wang, Jih-Yang Ko

Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

O10 Implant Surface Modifications II

Thursday 3 July • 14.00-15.00 • Amphi 200 • Chair: Dr Valerie Trichet & Dr Claudia Loebel

O10.1, 14.00

Influence of the nanostructure of F-doped TiO₂ films on osteoblast growth and mineralization capacity

Daniel Lozano^{1,2}, JM Hernández-López³, Pedro Esbrit¹, MA Arenas³, Enrique Gómez-Barrena⁴, J de Damborenea³, Jaime Esteban⁵, C Pérez-Jorge⁵, R Pérez-Tanoira⁵, Ana Conde⁶

¹Laboratorio de Metabolismo Mineral y Óseo, Instituto de Investigación Sanitaria (IIS)-Fundación Jiménez Díaz, Madrid, Spain, ²Departamento de Química Inorgánica y Bioinorgánica Facultad de Farmacia, Universidad Complutense de Madrid, Madrid, Spain, ³Centro Nacional de Investigaciones Metalúrgicas, CENIM/CSIC, Madrid, Spain, ⁴Grupo de Investigación de Cirugía OsteoArticular, Instituto de Investigación Hospital Universitario La Paz (IdiPAZ), Madrid, Spain, ⁵Departamento de Microbiología Clínica, Instituto de Investigación Sanitaria (IIS)-Fundación Jiménez Díaz, Madrid, Spain

O10.2, 14.08

Biomimetic osteoinductive coating of orthopaedic implants

Raphael GUILLOT¹, Flora GILDE¹, Isabelle PIGNOT-PAINTRAND¹, Pierre BECQUART², Aurelien LAPEYRERE¹, Frederic SAILHAN², Delphine LOGEART-AVRAMOGLOU³, Catherine PICART¹

¹LMGP, UMR 5628, CNRS and Grenoble Institute of Technology, MINATEC, Grenoble, France, ²Department of Orthopaedic Surgery, Hôpital Cochin, 27, rue du Faubourg Saint-Jacques, Paris, France, ³Laboratoire Biomécanique et Biomatériaux Ostéo-Articulaires (B2OA) CNRS - UMR 7052, Paris, France

O10.3, 14.16

Osteostatin-coated porous titanium implants improve early bone regeneration in cortical bone defects in rats.

Johan van der Stok¹, Daniel Lozano^{2,3}, Yoke Chin Chai⁴, Saber Amin Yavari⁵, Angela P. Bastidas Coral¹, Jan A.N Verhaar¹, Enrique Gómez-Barrena³, Jan Schrooten⁴, Holger Jahr⁶, Amir A. Zadpoor⁵, Pedro Esbrit², Harrie Weinans^{5,7}

¹Erasmus University Medical Center, Rotterdam, The Netherlands, ²IIS-RETICEF, Madrid, Spain, ³Instituto de Investigación Hospital Universitario La Paz, Madrid, Spain, ⁴KU Leuven, Leuven, Belgium, ⁵Delft University of Technology, Delft, The Netherlands, ⁶University Hospital RWTH, Aachen, Germany, ⁷Utrecht University Medical Center, Utrecht, The Netherlands

O10.4, 14.24

Osseointegration of polyethylene implants coated with a thin layer of titanium and biomimetically or electro-chemically deposited Hydroxyapatite in a rabbit model

Caroline Scemama^{1,2}, Morad Bendsidhoum², Bertrand David³, Moussa Hamadouche¹

¹Cochin Hospital, Paris, France, ²UMR CNRS 7052, Paris, France, ³UMR CNRS 8579, Chatenay Malabry, France

O10.5, 14.32

Bone apposition on nanoporous titanium implants

Laëtitia Salou^{1,2}, Alain Hoornaert³, Guy Louarn², Pierre Layrolle¹

¹Inserm U957, Lab. Pathophysiology of bone resorption, University of Nantes, Nantes, France, ²CNRS - Institut des Matériaux, Nantes, France, ³Academic Hospital of Nantes, Nantes, France

O10.6, 14.40

Influence of calcium phosphate coatings on the enhancement of new bone osteogenesis

Roman Surmenev, Maria Surmeneva, Anna Ivanova

National Research Tomsk Polytechnic University, Tomsk, Russia

O10.7, 14.48

Nanotubular oxide films fabricated in Ti6Al4V alloys doped with ibuprofen.

Juan Manuel Hernández-López², María Angeles Arenas², Antonio Luis Doadrio³, Ana Conde², Conchita Pérez-Jorge¹, Juan José de Damborenea², María Vallet-Regí³, Enrique Gómez-Barrena⁴, Jaime Esteban¹

¹IIS-Fundación Jiménez Díaz, Madrid, Spain, ²CENIM-CSIC, Madrid, Spain, ³University Complutense of Madrid, Madrid, Spain, ⁴La Paz Hospital, Madrid, Spain

O11 Hip Arthroplasty

Thursday 3 July • 15.00-16.30 • Amphi 450 • Chair: Prof François Guin & Dr Caroline Scemama

O11.1, 15.00

Research to the Design and Testing in Silico oriented to Develop Custom Orthopaedic Implants

Clara Isabel López, Keren Astrid Rojas, Ivonne María Ruiz, Juan Carlos Moreno, Julio Cesar Pinillos

Industrial Santander University, Bucaramanga, Colombia

O11.2, 15.08

Proximity of The Sciatic Nerve in Relation to the Posterior Approach to the Hip, and its relationship to femoral head size

Nebu Jacob, Daniel Withers

Whiston Hospital, Merseyside, UK

O11.3, 15.16

Total hip replacement in patients under 30 years – a review of functional outcomes.

Roland Walker, Matthew Gee, Marc George, Marcus Bankes, Adil Ajuied

Guys and St Thomas' Hospital, London, UK

O11.4, 15.24

TOTAL HIP REPLACEMENT FOR FRACTURE NECK OF FEMUR: CEMENTED OR UNCEMENTED?

Veenesh Selvaratnam, Aaron Borbora, Badri Narayan

Royal Liverpool and Broadgreen University Hospitals NHS Trust, Liverpool, UK

O11.5, 15.32

DOES TIP APEX DISTANCE PREDICT LATE FAILURES IN PROXIMAL FEMORAL FRACTURES?

Veenesh Selvaratnam, Gunasekaran Kumar

Royal Liverpool and Broadgreen University Hospitals NHS Trust, Liverpool, UK

O11.6, 15.40

Abductor biomechanics clinically impact the total hip replacement dislocation rate

Eduardo García-Rev, Eduardo García-Cimbrello, Enrique Gómez-Barrena

Hospital-Idi Paz, Madrid, Spain

O11.7, 15.48

Biomechanics factors determine cup press-fit fixation in uncemented total hip replacement

Eduardo García-Rev, Eduardo García-Cimbrello, Enrique Gómez-Barrena

Hospital La Paz-Idi Paz, Madrid, Spain

O11.8, 15.56

The impact of enhanced recovery protocol on hospital stay and short term complications in patients undergoing elective lower limb arthroplasty surgery.

Kirsten de Burlet, James Widnall, Cevin Barton, Veera Gudimetla

Leighton Hospital, Crewe, UK

O11.9, 16.04

Early Death Following Primary Total Hip Arthroplasty

Mark Jones¹, Michael Parry^{1,2}, Michael Whitehouse^{1,2}, Ashley Blom^{1,2}

¹Avon Orthopaedic Centre, South Mead Hospital, North Bristol NHS Trust, Bristol, UK, ²University of Bristol, Bristol, UK

O11.10, 16.12

Impact of BMI and ASA grade on length of stay in patients undergoing elective Total Hip Replacement

Waheeb A K Al-Azzani^{1,2}, Hafiz J Iqbal¹, Yassr Al-Soudaine¹, Mohd Izzat Suhaimi¹, Alun John¹

¹University Hospital Llandough, Cardiff, Wales, UK, ²Cardiff University, Cardiff, Wales, UK

O11.11, 16.20

Understanding the patient reported factors determining time taken to return to work after joint replacement

Benjamin Klein¹, Ajay Malviya², Steven Rushton¹, David Deehan¹

¹Newcastle University, Newcastle upon Tyne, Tyne and Wear, UK, ²Northumbria Healthcare Trust, Newcastle upon Tyne, Tyne and Wear, UK

O12 Tendons & Ligaments

Thursday 3 July • 15.00-16.30 • Amphi 200 • Chair: Dr Françoise Rédini & Dr Ching Yun Chen

O12.1, 15.00

Correlation of clinical, histological and radiological findings of Posterior Tibial Tendon Dysfunction

Abhijit Bhosale, Kedar Chirputkar, Farhan Sayed, Anand Pillai

University Hospital of South Manchester, Manchester, UK, UK

O12.2, 15.08

The effect of poly(styrene sodium sulfonate) grafting on PET LARS ligaments on in vitro mineralisation and in vivo bone tissue integration

Cedryck Vaquette², Véronique Viateau^{4,5}, Mathieu Manassero^{4,5}, Bernard Brulez², Véronique Migonney¹

¹LBPS/CSPBAT UMR CNRS 7244, Université Paris 13, Sorbonne Paris Cité, Villetaneuse, France, ²Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia, ³Société Lars, Arc sur Tille, France, ⁴Ecole Nationale Vétérinaire d'Alfort, Service de Chirurgie, Maisons Alfort, France, ⁵Laboratoire B2OA, UMR CNRS 7052, Université Paris Diderot, Sorbonne Paris Cité, Paris, France

O12.3, 15.16

Biomechanical characterisation of Achilles tendon using axial transmission speed of ultrasound, transferring concept to clinical practice.

Joseph Fournier^{1,2}, Camille Plag^{2,4}, Frederic Patat^{2,4}, Jean Brilhault^{3,4}

¹CHRU TOURS, service de chirurgie orthopédique pédiatrique, Tours, France, ²Université François-Rabelais, UMRS INSERM U930, Tours, France, ³CHRU TOURS, service de chirurgie orthopédique et traumatologique, Tours, France, ⁴CIC-IT 1415, CHRU TOURS, Tours, France

O12.4, 15.24

In vitro maintenance of tenogenic phenotype with macromolecular crowding.

Kyriakos Spanoudes, Abhigyan Satyam, Abhay Pandit, Dimitrios Zeugolis, Diana Gaspar

Network of Excellence for functional Biomaterials, National University of Ireland Galway (NUIG), Galway, Ireland

O12.5, 15.32

PRP Enhances the Maturity of Healing Tendon Tissues in Acute Achilles Ruptures : a human immunohistochemistry study

Joseph Alsousou, Mark Thompson, Paul Harrison, Kieth Willett, Sarah Franklin

University of Oxford, Oxford, UK

O12.6, 15.40

THE EFFECT OF THIEL EMBALMING OR DEHYDRATION ON BIOMECHANICAL PROPERTIES OF TENDONS, AS COMPARED TO FRESH FROZEN TENDONS.

Bram De Lepeleere, Gert-Jan Opsomer, Thomas Luyckx, Tom Van Hoof, Catherine Van Der Straeten, Jan Victor, Matthias Verstraete

Ghent University, Ghent, Belgium

O12.7, 15.48

A mixed autologous and allogenic composite nerve graft: a project to evaluate a novel technique for nerve decellularization.

Filippo Boriani^{1,2}, Nicola Fazio², Caterina Fotia^{1,2}, Nicoletta Zini², Nicola Baldini^{1,2}

¹Laboratory of Orthopaedic Pathophysiology and Regenerative Medicine, Bologna University, Bologna, Italy, ²Rizzoli Orthopaedic Institute, Bologna, Italy

O12.8, 15.56

The incidence of Second fracture in patients with ACL rupture.

Rhodri Gwyn^{1,2}, Ben Hickey^{1,2}, Angus Robertson^{1,3}

¹University Hospital of Wales, Cardiff, UK, ²Cardiff University, Cardiff, UK, ³Cardiff Metropolitan University, Cardiff, UK

O13 The Knee

Thursday 3 July • 17.00-18.30 • Amphi 450 • Chair: Prof Klemens Trieb & Dr Benoit Le Goff

O13.1, 17.00

Pain and Functional Outcomes with Tourniquet Use in Total Knee Arthroplasty

Ali Abdulkarim¹, KE Krause², Eoin Sheehan¹, Andrew Moriarty¹

¹Midland Regional Hospital, Tullamore, Co Offaly, Ireland, ²University of Limerick, Limerick, Ireland

O13.2, 17.08

A simple and reliable surgical technique to perform TKR in patients with inaccessible femoral medullary canal.

Gianluca Castellarin, Carlo Dottino

Suzzara Hospital, Suzzara, Italy

O13.3, 17.16

Evaluation of patient specific instrumentation in total knee arthroplasty compared to conventional systems: a prospective study

Klemens Trieb, David Ullmann, Stefan Hofstaetter

Dept. of Orthopedics, Wels, Austria

O13.4, 17.24

How accurate can we measure the alignment before and after TKA: a 3D vs 2D analysis.

Rutger Callens, Matti Slabbaert, Stefaan Van Onsem, Catherine Van Der Straeten, Jan Victor

Ghent University Hospital, Ghent, Belgium

O13.5, 17.32

TKA patient body weight, height and BMI as functions of implant size

Bo Gao, Laurent Angibaud, Diane Johnson

Exactech, Gainesville, USA

O13.6, 17.40

Effect of forefoot surgery on return to the fashionable footwear in women

Abhijit Bhosale¹, Cal Robinson², Anand Pillai¹

¹University Hospital of South Manchester, Manchester, UK,

²Manchester University, Manchester, UK

O13.7, 17.48

Innovative use of per-cutaneous neuro-muscular stimulation to reduce the post-operative swelling after Hallux Valgus Surgeries- a Pilot Study

Abhijit Bhosale¹, Nicola Pickford², Tom Wainwright³, Anand Pillai¹

¹University Hospital of South Manchester, Manchester, UK,

²Stockport College Academy, Manchester, UK, ³The Royal Bournemouth Hospital, Bournemouth, UK

O13.8, 17.56

Impact of alignment variability on patient function and satisfaction.

Stefaan Van Onsem, Matti Slabbaert, Rutger Callens, Catherine Van Der Straeten, Jan Victor

Ghent University Hospital, Ghent, Belgium

O14 The Spine

Thursday 3 July • 17.00-18.30 • Amphi 200 • Chair: Dr Christoph Brochhausen & Dr Gianluca Vadala

O14.1, 17.00

Improved injectability of PMMA cements for vertebroplasty

Malin Nilsson^{*1}, Jérémy Le Guennec², Alejandro López¹, Cecilia Persson¹

¹Uppsala University, Sweden, ²ENSIACET, France

O14.2, 17.08

Performance of low-modulus acrylic bone cement in a human ex vivo model of vertebroplasty

Cecilia Persson¹, Alejandro López¹, Ondrej Holub², Vishal Borse², Malin Nilsson¹, Håkan Engqvist¹, Nik Kapur², Richard Hall²

¹Uppsala University, Uppsala, Sweden, ²University of Leeds, Leeds, UK

O14.3, 17.16

Inefficiency of preoperative donated autologous blood to decrease transfusion requirements during and after correction surgery in AIS patients

Carlos Barrios¹, Jesús Burgos², César Pérez-Caballero², Vicente García², Ignasi Sanpera³, Gabriel Pizá-Vallespir³, Pedro Domenech⁴, Miguel Antón-Rodríguez²

¹Valencia Catholic University, Valencia, Spain, ²Hospital Ramón y Cajal, Madrid, Spain, ³Hospital Son Espases, Palma de Mallorca, Spain, ⁴Hospital General, Alicante, Spain, ⁵Hospital de la Mancha, Alcázar de San Juan, Spain

O14.4, 17.24

Spinal cord tolerance to anteroposterior and lateral compression: experimental study showing differences in electrophysiological response and cord pathological changes

Carlos Barrios¹, Lidia Cabañes², Jesús Burgos², Gema de Blas², Elena Montes², Eduardo Hevia³, Carlos Correa²

¹Valencia Catholic University, Valencia, Spain, ²Hospital Ramón y Cajal, Madrid, Spain, ³Hospital La Fraternidad, Madrid, Spain

O14.5, 17.32

A new method to evaluate impingement in lumbar spinal disc arthroplasty in vitro

Thomas M Grupp^{1,2}, James J Yue³, Rolando Garcia Jr.⁴, Bernhard Fritz¹, Christoph Schilling¹, Jens Schwiesau¹

¹Aesculap AG Research & Development, Tuttlingen, Germany, ²Ludwig Maximilians University Clinic for Orthopaedic Surgery, Campus Grosshadern, Munich, Germany, ³Yale University School of Medicine, Dept. of Orthopaedics and Rehabilitation, New Haven CT, USA, ⁴Orthopedic Care Center, Aventura FL, USA

O14.6, 17.40

Is radiation a limit for Cone Beam tomography-based image guided spinal surgery?

Ruben Hernandez, David Noriega, Francisco Ardura, Ricardo Torres, Manuel Agulla, David Migue, Raul Corredera, Javier Aguado

University Clinical Hospital Valladolid, Valladolid, Spain

O14.7, 17.48

Mini-invasive spine surgery or open surgery in degenerative lesions and traumatic fractures: a medico-economic response.

Nicolas Maillard¹, Kevin Buffeloir-Billet¹, Olivier Hamel¹, Benoit Lefranc², Olivier Sellal¹, Nathalie Surer¹, Eric Bord¹, Gael Grimandi¹, Johann Clouet¹

¹University Hospital Of Nantes, Nantes, France, ²St Louis General Hospital, La Rochelle, France

O14.8, 17.56

WHICH FACTORS DETERMINE THE ABILITY TO ACHIEVE AN ANATOMICAL REDUCTION FOR THE TREATMENT OF A VERTEBRAL COMPRESSION FRACTURE?

David C Noriega^{1,2}, Francisco Ardura¹, Ruben Hernandez Ramajo¹, Antonio Krüger³

¹University Hospital, Valladolid, Spain, ²Royal Academy of Medicine and Surgery, Valladolid, Spain, ³Marburg University Trauma center, Marburg, Germany

O14.9, 18.04

Examining the in-vivo anti-biofilm, in-vitro osteoconductive and biomechanical properties of a new PEEK-Silver Zeolite composite and its potential in spine

Sriram Sankar², Joseph Crudden², Hans Jorg Meisel¹

¹Center of Neurosciences of the BG-Clinic Bergmannstrost Halle, Halle, Germany, ²DiFusion Inc., Georgetown, Texas, USA

O14.10, 18.12

Study of the urinary system functional capabilities using excretory urography in patients with spine-and-spinal cord injuries

Shchurova Elena, Diachkova Galina, Novikova Olga

The Russian Ilizarov Scientific Center Restorative Traumatology and Orthopaedics of the Ministry of Health Care and Social Development of Russia, Kurgan, Russia

O15 Bone Tumours

Friday 4 July • 09.30-10.30 • Amphi 450 • Chair: Nicola Baldini & Dr François Lamoureux

O15.1, 9.30

Hybrid hydrogel containing magnetic nanoparticles: new vehicles on the road towards bone cancer treatment.

Melania Maglio¹, Rolando Barbucci², Marianna Uva³, Elena Della Bella¹, Roberto Giardino^{1,3}, Milena Fini^{1,3}

¹Laboratory of Preclinical and Surgical Studies, Rizzoli Orthopedic Institute, Bologna, Italy, ²University of Siena, Department of Biotechnology, Chemistry and Pharmacy, Siena, Italy, ³Laboratory of Biocompatibility, Innovative Technologies and Advanced Therapies, RIT-Rizzoli Orthopaedic Institute, Bologna, Italy

O15.2, 9.38

Preclinical evidence of craniofacial adverse effect of zole-dronic acid in newborn mice: potential consequences in pediatric osteosarcoma and Ewing's sarcoma patients

Frédéric LEZOT^{1,2}, Julie CHESNEAU^{1,2}, Séverine BATTAGLIA^{1,2}, Régis BRION^{1,2}, Jean-Christophe FARGES^{3,4}, Géraldine LESCAILLES⁵, Béatriz CASTANEDA⁵, Catherine CHAUSSAIN⁶, Perrine MAREC-BERARD⁷, Laurence BRUGIERES⁸, Marie-Cécile LEDELEY⁹, Sophie PIPER-NO-NEUMANN¹⁰, Dominique HEYMANN^{1,2}, Françoise REDINI^{1,2}

¹INSERM UMR957, Nantes, France, ²Université de Nantes, Nantes, France, ³IGFL, CNRS UMR-5242, ENS de Lyon, Lyon, France, ⁴Université de Lyon 1, Faculté d'odontologie, Lyon, France, ⁵Service d'Odontologie, Hôpital Pitié-Salpêtrière, Paris, France, ⁶Service d'Odontologie, AP-HP Hôpital Bretonneau, Paris, France, ⁷Institut d'Hémo-Oncologie Pédiatrique, Lyon, France, ⁸Cancérologie de l'Enfant et de l'adolescent, Institut Gustave Roussy, Villejuif, France, ⁹Département de Biostatistiques et d'épidémiologie, Institut Gustave Roussy, Villejuif, France, ¹⁰Département d'oncologie médicale, Institut Curie, Paris, France

O15.3, 9.46

Effect of Soluble Factors produced by Adipose Tissue on Osteosarcoma Cell Growth

Pierre AVRIL^{1,2}, Pierre PERROT^{1,2}, Dominique HEYMANN^{1,2}, Valérie TRICHET^{1,2}

¹INSERM, Nantes, France, ²Université de Nantes, Nantes, France

O15.4, 9.54

Human osteosarcoma-derived cells: mesenchymal stem cells appearance but cancerous behaviour.

Louis-Romée Le Nail^{1,2}, Pierre Avril¹, Frédéric Deschaseaux³, Philippe Rosset^{1,2}, Dominique Heymann¹, Gonzague de Pinieux^{1,4}, Valérie Trichet¹

¹INSERM UMR 957, Université de Nantes, Laboratoire de Physiopathologie de la Résorption Osseuse et Thérapie des Tumeurs Osseuses Primitives, EA3822, Nantes, France, ²Service de Chirurgie Orthopédique 2, Hôpital Trousseau, CHRU de Tours, Tours, France, ³STROMA lab, UMR UPS/CNRS 5273, EFS-PM, U1031 Inserm, IFR 150, BP 84225, Toulouse, France, ⁴Service d'Anatomie Pathologique, Hôpital Trousseau, CHRU de Tours, Tours, France

O15.5, 10.02

Granular cell tumours recurred on chest wall after wide resection of abdominal wall lesion

Koshi Hattori¹, Takashi Murakami², Shigemi Ito²

¹Fukushima Rosai Hosp., Iwaki, Fukushima, Japan, ²Miyagi Cancer Center, Natori, Miyagi, Japan

O15.6, 10.10

Metastasized, malignant solitary fibrous tumour of the pleura (SFTP): case report and review of literature

Sebastian Stemmer¹, Jörg Friesenbichler¹, Werner Maurer-Ertl¹, Lukas Holzer¹, Bernadette Liegl-Atzwanger², Andreas Leithner¹

¹Department of Orthopedic Surgery, Medical University of Graz, Graz, Steiermark, Austria, ²Institute of pathology, Medical University of Graz, Graz, Steiermark, Austria

O15.7, 10.18

OUTCOME OF OSTEOSARCOMA IN AN AFRICAN COUNTRY: ARE WE THERE YET?

HEMED EL-BUSAIDY

UNIVERSITY OF NAIROBI, NAIROBI, Kenya

O16 Infection & Trauma II

Friday 4 July • 09.30-10.30 • Amphi 200 • Chair: Dr Geoff Richards & Dr Marta Tellez

O16.1, 9.30

Cognitive Impairment and Co-morbidity are associated with Increased Post-Operative Urinary Tract and Lower Respiratory Tract Infections in Neck of Femur Fracture Patients.

Andrew Hotchen¹, John Jeffery¹, Emily Ironside², Naomi Avery¹, Oliver Pearce¹

¹Milton Keynes General Hospital, Milton Keynes, UK, ²University of Warwick, Warwickshire, UK

O16.2, 9.38

Local administration of bupivacaine may augment the activity of gentamicin.

Peter Mihok¹, Mohammed Hassaballa¹, Karen Bowker², James Robinson¹, Andrew Porteous¹, Andrew Lovering², James Murray¹

¹Avon Orthopaedic Centre, Bristol, UK, ²Department of Microbiology, Southmead Hospital, Bristol, UK

O16.3, 9.46

A rat osteomyelitis model evaluated by imaging techniques, blood analysis, pharmacological measurements, and histology: a longitudinal follow-up of bacterial activity

Silke Schlaubitz¹, Sandro Cornet¹, Martine Renard¹, Lionel Couraud¹, Benoit Rousseau², Dominique Ducint³, Evelyne Deridet³, Mathieu Molimard³, Marylène Viana⁴

¹CHU de Bordeaux, CIC-IT BioDiMI, 33000 Bordeaux, France, ²Animalerie A2 de Bordeaux, 33000 Bordeaux, France, ³CHU de Bordeaux, Laboratoire de toxico-pharmacologie, 33000 Bordeaux, France, ⁴CNRS 7315, Laboratoire de Pharmacie Galénique, 87000 Limoges, France, ⁵INSERM U1026, Bioingénierie tissulaire, 33000 Bordeaux, France

O16.4, 9.54

Bacterial Contamination Of Diathermy Tips Used During Orthopaedic Procedures

Ali Abdulkarim, Andrew Moriarity, Peter Coffey, Eoin Sheehan

Midland Regional Hospital, Tullamore, Co Offaly, Ireland

O16.5, 10.02

The Effect Of Orthopaedic Surgery On The Intrinsic Properties Of Surgical Gloves

Ali Abdulkarim, Andrew Moriarity, Eoin Sheehan

Midland Regional Hospital, Tullamore, Co Offaly, Ireland

O16.6, 10.10

Change in Frequency of Surgical Site Incision Infections in Orthopedic Department of a Tertiary Care Facility in Rawalpindi, followed by Remedial Measures

Ahmed Hassaan, Nayyab Zehra

Army Medical College, Rawalpindi, Pakistan

O17 Wear Particles & Osteoimmunology

Friday 4 July • 11.00-12.30 • Amphi 450 • Chair: Dr Stuart Goodman & Dr Luis Cordova

O17.1, 11.00

Unusual complications of Metal-on-Metal Total Hip Replacements

Waheeb A K Al-Azzani^{1,2}, Hafiz J Iqbal¹, Alun John¹

¹University Hospital Llandough, UK, ²Cardiff University, UK

O17.2, 11.08

Wear under Severe Edge Loading due to Translational Surgical Mal-Positioning of Hip Replacement Bearings

Mazen Al-Hajjar¹, Sophie Williams¹, Louise M Jennings¹, Jonathan Thompson², Graham H Isaac^{1,2}, Eileen Ingham¹, John Fisher¹

¹Institute of Medical and Biological Engineering, School of Mechanical Engineering, University of Leeds, Leeds, UK, ²DePuy Synthes Joint Reconstruction, Leeds, UK

O17.3, 11.16

In vivo local release of aluminum ions from alumina-on-alumina hip replacement

Pascal BIZOT, Daniel CHAPPARD

GEROM, IRIS-IBS, University and CHU of Angers, Angers, France

O17.4, 11.24

Characterisation of CoCrMo wear debris from prosthetic hip implants and their interactions with the immune system

Mark Pearson¹, Richard Williams¹, Liam Grover¹, Edward Davis², Janet Lord¹

¹University of Birmingham, Birmingham, West Midlands, UK, ²The Royal Orthopaedic Hospital, Birmingham, West Midlands, UK

O17.5, 11.32

Investigation of changed value levels of miRNAs, that regulate inflammation in painful-aseptic loosened Total Hip Arthroplasties. New insights into aseptic loosening.

Konstantinos Evangelou¹, Katerina Grafanaki², Dimitrios Anastasakis², Christos Georgiou¹, Constantinos Stathopoulos², Panagiotis Megas¹

¹Orthopaedic Department, University Hospital of Patras, Patras, Greece, ²Laboratory of Biochemistry, Faculty of Medicine, University of Patras, Patras, Greece

O17.6, 11.40

Influence of Metal-on-Metal hip endoprosthesis wear particles and ions on mesenchymal stromal cells and osteoblasts: An in vitro and in vivo study.

Frank Schulze¹, Anastasia Rakow², Janosch Schoon¹, Thilo John², Carsten Perka², Georg Duda¹, Andrea Ode¹

¹Charite Universitätsmedizin, Julius Wolff Institute, Berlin, Germany, ²Charite Universitätsmedizin, Centre for Musculoskeletal Surgery, Berlin, Germany, ³DRK Kliniken Berlin Westend, Department for Orthopaedics and Trauma Surgery, Berlin, Germany

O17.7, 11.48

NF-κB Decoy Oligodeoxynucleotide Mitigates UHMWPE Wear Particle-induced Pro-inflammatory Cytokine and Chemokine Production by Macrophages

Tzu-hua Lin¹, Zhenyu Yao¹, Taishi Sato^{1,2}, Jukka Pajarenen¹, Kensuke Egashira², Stuart Goodman¹

¹Stanford University, Stanford, CA, USA, ²Kyushu University, Kyushu, Japan

O17.8, 11.56

NF-κB Decoy Oligo-deoxynucleotide protects Bone Marrow Derived Mesenchymal Stem Cell Viability and Function during Exposure to UHMWPE Wear Particles

Tzu-hua Lin¹, Heather Waters¹, Katherine Barcay¹, Taishi Sato^{1,2}, Jukka Pajarenen¹, Zhenyu Yao¹, Kensuke Egashira², Stuart Goodman¹

¹Stanford University, Stanford, CA, USA, ²Kyushu University, Kyushu, Japan

O17.9, 12.04

Evaluation of the in vivo inflammatory response of three types of polyethylene in a murine model.

Camille Rodaix^{1,2}, Amine Zaoui¹, Jean Langlois¹, Christophe Nich², Morad Bensidhoum², Delphine Logeart², Hervé Petite², Moussa Hamadouche^{1,2}

¹Service de chirurgie orthopédique, Hôpital Cochin, Paris, France, ²Laboratory of Bioengineering and Bioimaging for Osteo-Articular Tissues, UMR 7052 CNRS, Paris, France

O17.10, 12.12

Pelvic Fractures Associated with Urological Injuries. A 5 year observational study at a tertiary pelvic referral centre

Gemma Green, Amol Chitre, Elin Cox, Mark Rickman
St Georges Hospital, London, UK

O18 Cartilage Repair

Friday 4 July • 14.30-16.00 • Amphi 450 • Chair: Dr Feng Sheng Wang & Dr Gianluca Vadala

O18.1, 14.30

Cartilage tissue engineering from nose to knee: early results of a Phase 1 Clinical Trial

Marcus Mumme^{1,2}, Andrea Barbero², Sylvie Miot², Anke Wixmer², Dirk Johannes Schaefer³, Ueli Studler⁴, Anna Hirschmann⁴, Thomas Schwamborn⁵, Ivan Martin², Marcel Jakob^{1,2}

¹Clinic for Traumatology, University Hospital Basel, Basel, Switzerland, ²Department of Biomedicine, University of Basel, Basel, Switzerland, ³Department of Plastic Surgery, University Hospital Basel, Basel, Switzerland, ⁴Department of Radiology, University Hospital Basel, Basel, Switzerland, ⁵Orthopaedic Surgery, Crossklinik Basel, Basel, Switzerland

O18.2, 14.38

Intervertebral disc biomechanics are partially preserved after annulus puncture due to application of a bio-degradable glue.

Pieter-Paul Vergroesen¹, Agnieszka Bochynska², Kaj Emanuel^{1,3}, Idsart Kingma², Dirk Grijpstra², Theo Smit¹

¹VUmc, Amsterdam, The Netherlands, ²TU Twente, Enschede, The Netherlands, ³VU University, Amsterdam, The Netherlands

O18.3, 14.46

Regeneration and preservation of hyaline cartilage after spheroid-based autologous chondrocyte transplantation - a clinico-pathological study

Christoph Brochhausen, David Grevenstein, Jakob Grevenstein, Andreas Mamilos, C. James Kirkpatrick

REPAIR-lab, Institute of Pathology, University Medical Centre Mainz, Mainz, Germany

O18.4, 14.54

Evaluation of disc regeneration by transplantation of bone marrow mesenchymal stem cells (MSCs) using quantitative T2 mapping in a rabbit model

Feng Cai¹, Xiao-Tao Wu¹, Xin-Hui Xie^{1,2}

¹Department of Orthopaedics, Affiliated Zhongda Hospital, Southeast University, Nanjing, China, ²Department of Orthopaedics, The First Affiliated Hospital of Soochow University, Suzhou, China

O18.5, 15.02

An In Vivo Study of A Novel Tissue Engineered Scaffold For The Regeneration And Repair Of Knee Joint Osteochondral Defects

Ashwanth Ramesh^{1,2}, Tanya Levingstone^{1,2}, Robert Brady^{1,2}, Pieter Brama², John Glesson⁴, Fergal O'Brien^{1,2}

¹Tissue Engineering Research Group, Royal College of Surgeons in Ireland (RCSI), Dublin, Ireland, ²Advanced Materials and Bioengineering Research (AMBER) Centre, RCSI & TCD, Dublin, Ireland, ³School of Veterinary Medicine, University College Dublin (UCD), Dublin, Ireland, ⁴SurgaColl Technologies Ltd., Rubicon Centre, Cork, Ireland

O18.6, 15.10

Pulsed electromagnetic field stimulation and bone marrow concentrate enhance osteochondral defect regeneration in an in vivo model

Francesca Veronesi¹, Matteo Cadossi^{2,3}, Gianluca Giavaresi^{1,4}, Lucia Martini^{1,4}, Stefania Setti⁵, Roberto Buda^{2,3}, Sandro Giannini^{2,3}, Milena Fini^{1,4}

¹Laboratory of Preclinical and Surgical Studies, Rizzoli Orthopaedic Institute, Bologna, Italy, ²Orthopaedics and Trauma Clinic, Rizzoli Orthopaedic Institute, Bologna, Italy, ³University of Bologna, Bologna, Italy, ⁴Laboratory of Biocompatibility, Innovative Technologies and Advanced Therapies, Department Rizzoli RIT, Rizzoli Orthopaedic Institute, Bologna, Italy, ⁵IGEA S.p.A, Carpi-Modena, Italy

O18.7, 15.18

TGF-β2 is involved in the preservation of the chondrocyte phenotype under hypoxic conditions

Ruud H. Das¹, Ufuk T. Timur¹, Seval Edip¹, Esther Haak¹, Christoph Wruck², Harrie Weinans^{3,4}, Holger Jahr^{2,1}

¹Erasmus MC, Rotterdam, The Netherlands, ²RWTH Aachen, Aachen, Germany, ³UMC Utrecht, Utrecht, The Netherlands, ⁴TU Delft, Delft, The Netherlands

O18.8, 15.26

TGFβ2 knockdown under physiological osmolarity improves COL2 expression in chondrocytes in vitro

Ufuk Tan Timur¹, Anna Van der Windt¹, Esther Haak¹, Jenny Visser¹, Harrie Weinans^{2,3}, Holger Jahr⁴

¹Erasmus MC, Rotterdam, The Netherlands, ²UMCU, Utrecht, The Netherlands, ³Technical University, Delft, The Netherlands, ⁴RWTH Aachen, Germany

O18.9, 15.34

Biomechanical Evaluation of the Transpedicular Nucleotomy with Intact Anulus Fibrosus

Fabrizio Russo¹, Gianluca Vadala¹, Robert Allen Hartman², Kevin M. Bell², Gwendolyn A. Sowa², Nam Vo², James Kang², Vincenzo Denaro¹

¹University Campus Bio-Medico of Rome, Rome, Italy, ²University of Pittsburgh, Pittsburgh, USA

O18.10, 15.42

Reproducible disc degeneration scale in a large animal model

G Vadala¹, F Russo¹, F De Strobel², M Bernardini², G De Benedictis², M Musumeci¹, D Eglin³, L Denaro², M Alini², D D'Avella², R Busetto², V Denaro¹

¹University Campus Bio-Medico of Rome, Rome, Italy, ²University of Padua, Padua, Italy, ³AO Research Institute, Davos, Switzerland

O18.11, 15.50

MATRIX AND MATERIAL PROPERTIES DISTRIBUTION IN PORCINE ARTICULAR CARTILAGE

M Armengol¹, H.S. Gill², P. Hulley¹, A.P. Price¹

¹University of Oxford, Oxford, UK, ²University of Bath, Bath, UK

O19 Surgical Navigation & Imaging

Friday 4 July • 14.30-16.00 • Amphi 200 • Chair: Dr Pierre Layrolle & Prof Enrique Gomez-Barrena

O19.1, 14.30

Effects of repetitive training practices using an image-free computer-assisted guidance system on cognitive and technical skills

Laurent Angibaud¹, Ralph Liebelt^{2,3}, Bo Gao¹, Xeve Silver¹

¹Exactech, Gainesville, FL, USA, ²Triangle Orthopaedic Associates, Durham, NC, USA, ³North Carolina Specialty Hospital, Durham, NC, USA

O19.2, 14.38

Evaluation of a new computer guidance system

Gerard Giordano², Jeffrey Ginther³, Bernard Stulberg⁴, Sandrine Polakovic⁵, Nicolas Hohl¹

¹Exactech France, Illkirch, France, ²Hopital Joseph Ducuing, Toulouse, France, ³Riverview Hospital, Noblesville, IN, USA, ⁴The Cleveland Clinic, Cleveland, OH, USA, ⁵Blue Ortho, La Tronche, France

O19.3, 14.46

Effects of bone deformity on accuracy of a computer-assisted guidance system for total knee arthroplasty

Laurent Angibaud¹, Ralph Liebelt^{2,3}, Bo Gao¹, Scott Gulbransen¹, Xeve Silver¹

¹Exactech, Gainesville, FL, USA, ²Triangle Orthopaedic Associates, Durham, NC, USA, ³North Carolina Specialty Hospital, Durham, NC, USA

O19.4, 14.54

Diffusion-Weighted MRI Assessment of Adjacent Disc Degeneration after Thoracolumbar Vertebral Fractures

David C Noriega^{1,2}, Francisco Ardura¹, Ruben Hernandez Ramajo¹, Antonio Krüger², Carlos Barrios³

¹University Hospital, Valladolid, Spain, ²Royal Academy of Medicine and Surgery, Valladolid, Spain, ³Catholic University, Valencia, Spain, ⁴Marburg University Trauma Center, Marburg, Germany

O19.5, 15.02

Diagnostic Efficacy of 3.0 Tesla MRI for Knee Injuries Using Arthroscopy as a Reference Standard- A Meta-Analysis

Christian Smith, Ciaran McGarvey, Ziad Harb, Diane Back, Russell Houghton, Andrew Davies, Adil Ajuied

Guy's and St Thomas' NHS Foundation Trust, London, UK

O19.6, 15.10

ACCURACY OF MRI IN THE DIAGNOSIS OF ROTATOR CUFF TEARS IN A DISTRICT GENERAL HOSPITAL.

Eleanor Davidson¹, Vittoria Bucknall¹, Rehan Siddiq²

¹Royal Infirmary of Edinburgh, Edinburgh, UK, ²Borders General Hospital, Borders, UK

O19.7, 15.18

Postoperative 3D analysis based on X-ray images

Lara Vigneron¹, Hendrik Delport², Davy Willems¹, Lars Neumann¹, Sebastian De Boodt¹, Herlien Declerck¹

¹Materialise NV, Leuven, Belgium, ²KULeuven, Leuven, Belgium

O19.8, 15.26

Prediction Of The Primary Stem Stability For Total Hip Arthroplasty Using Numerical Modal Analysis Based On Preoperative Three-dimensional Planning

Ehadi Sariali^{1,2}, Quentin Vallet¹, Quentin Grimal¹, Pascal Laugier¹

¹Université Pierre et Marie Curie Paris VI, L.I.B, Paris, France, ²Hopital Pitié Salpêtrière, Paris, France

O19.9, 15.34

Visualisation of bone mineralization around two different cup designs after total hip arthroplasty using ¹⁸F-fluoride PET/CT-scans.

Marloes Peters¹, Boudewijn Brans², Emiel Beijer², Roel Wiertz², René ten Broeke¹, Chris Arts¹

¹Department of Orthopaedic Surgery, Maastricht University Medical Center, Maastricht, The Netherlands, ²Departments of Nuclear Medicine and Radiology, Maastricht University Medical Center, Maastricht, The Netherlands

O19.10, 15.42

In vivo local bone remodeling assessed by High Resolution pQCT

Rafaa Ellouz¹, Roland Chapurlat¹, Bert van Rietbergen², Patrik Christen², Elisabeth Sornay-Rendu¹, Pawel Szulc¹, Stephanie Boutroy¹

¹INSERM UMR 1033, Université de Lyon, Lyon, France, ²Orthopaedic Biomechanics, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands

O20 Bone Regeneration & Tissue Engineering III

Friday 4 July • 16.30-17.30 • Amphi 450 • Chair: Dr Nathalie Chevallier & Dr Meadhbh Brennan

O20.1, 16.30

Identification of a novel mutation in heritable osteonecrosis of the femoral head

Tracy Wang^{1,3}, Wayne Mah¹, Edward Harvey^{1,2}, Jacek Majewski³, David Rosenblatt³, Chantal Seguin^{1,4}

¹Bone Engineering Labs, Surgical Research, Research Institute McGill University Health Center, Montreal, QC, Canada, ²Department Surgery, Division Orthopaedic Surgery, McGill University Health Center, Montreal, QC, Canada, ³Department of Human Genetics, McGill University, Montreal, QC, Canada, ⁴Department of Medicine, Divisions Haematology and Oncology, McGill University Health Center, Montreal, QC, Canada

O20.2, 16.38

Delayed Bone regeneration in Nrf2 knock out mice.

Rainer Beckmann¹, Sebastian Lippross², Mersedeh Tohidnezhad¹, Nadine Streubesand², Graem Campbell³, Christian Glüer³, Andreas Seekamp², Holger Jahr⁴, Thomas Pufe¹, Christophe Wruck¹

¹Department of Anatomy and Cell Biology, Medical Faculty, RWTH Aachen University, Aachen, Germany, ²Department of Trauma Surgery, University Hospital Schleswig-Holstein, Campus Kiel, Kiel, Germany, ³Section Biomedical Imaging, Department of Diagnostic Radiology, University Hospital Schleswig-Holstein, Campus Kiel, Kiel, Germany, ⁴Department of Orthopaedics and Trauma Surgery, RWTH Aachen University Hospital, Aachen, Germany

O20.3, 16.46

Early prediction of osteogenic potential of human MSCs by Runx2/Sox9 ratio

Claudia Loebel^{1,2}, Ewa Czekanska¹, Mauro Alini¹, Martin Stoddart¹

¹AO Research Institute Davos, Davos-Platz, Switzerland, ²ETH Zurich, Zurich, Switzerland

O20.4, 16.54

Accelerated spinal fusion by collagen scaffolds modified with low dosage of engineered collagen-binding human bone morphogenetic protein-2 in rats

Qin Shi, Xinglong Han, Huan Zhao, Wen Zhang, Li Ni, Huilin Yang, Jianwu Dai

Orthopedic Department, The First Affiliated Hospital of Soochow University, Suzhou, China

O20.5, 17.02

Dual-Antibiotic Delivery via 3D Printed Calcium Phosphates Improves Outcome of Implant-Associated Osteomyelitis Compared to Vancomycin-laden PMMA

Jason Inzana, Edward Schwarz, Stephen Kates, Hani Awad

University of Rochester, Rochester, NY, USA

O20.6, 17.10

In vivo and in situ bioprinting of cells and biomaterials to guide tissue repair.

Virginie Keriquel¹, Sylvain Catros¹, Sophia Ziane¹, Reine Bareille¹, Murielle Remy¹, Samantha Delmond², Benoit Rousseau³, Joelle Amédée¹, Fabien Guillemot¹, Jean-Christophe Fricain¹

¹Inserm U1026, Bordeaux, France, ²CIC-IT, CHU Bordeaux, Pessac, France, ³Animalerie A2, Univ Bordeaux, Bordeaux, France

O21 Biomechanics II

Friday 4 July • 16.30-17.30 • Amphi 200 • Chair: Prof Bernd Grimm & Dr Frederic Lézot

O21.1, 16.30

Shear wave elastography for cervical disc characterization: a feasibility study

Claudio Vergari¹, Dominique Bonneau¹, Guillaume Dubois¹, Jean Dubousset¹, Mickael Tanter², Jean-Luc Gennisson², Wafa Skalli¹

¹Arts et Métiers ParisTech, LBM, Paris, France, ²Institut Langevin, Ondes et Images, ESPCI ParisTech, CNRS UMR7587, INSERM U979, Paris, France

O21.2, 16.38

Introducing Monitored Real-Time Patient-Specific Technique for Total Knee Arthroplasty

Bernard Stulberg¹, Laurent Angibaud², Jayson Zadzilka¹

¹Cleveland Clinic, Cleveland, OH, USA, ²Exactech, Gainesville, FL, USA

O21.3, 16.46

Patient-reported outcome measures vs. performance-based inertial sensor measures A follow-up study in patients undergoing total knee arthroplasty.

Stijn Bolink, Rachel Senden, Bernd Grimm, Ide Heyligers

Atrium Medical Center Heerlen, Heerlen, The Netherlands

O21.4, 16.54

Relation Between Metal Taper Conditions And The Burst Load Of Ceramic Component

Bernard Masson

CeramTec, Plochingen, Germany

O21.5, 17.02

Determination of factors affecting taper fretting/wear using a novel in vitro test methodology

Tim Marriott, Tony Lane, Imran Khan

Biomet, Swindon, UK

O21.6, 17.10

Microdamage assessment of bone-cement interfaces using in situ testing, digital volume correlation and finite element analysis

Gianluca Tozzi, Qing-Hang Zhang, Jie Tong

University of Portsmouth, Portsmouth, Hampshire, UK

O21.7, 17.18

OUTCOME OF INTRA-ARTICULAR CALCANEAL FRACTURE FIXATION USING PERCUTANEOUS FIXATION TECHNIQUE AND BONE GRAFTING

Raj R Thakrar¹, Amit Kotecha¹, Yaser Ghani², Abhay Tillu¹

¹Sandwell General Hospital, Birmingham, UK, ²Royal National Orthopaedic Hospital, London, UK

poster sessions

P1 Biomechanics

P1.1

Shoulder Instability as a Cam-follower Mechanism

Laurent Willemot^{1,2}, *Ryan Breighner*¹, *Alexander Hooke*¹, *Andrew Thoreson*¹, *Olivier Verborgt*³, *Kai-nan An*¹

¹Mayo Clinic, Minnesota, USA, ²Ghent University, Gent, Belgium, ³AZ Monica, Antwerp, Belgium

P1.2

Are current accelerometer based activity monitors are valid for orthopaedic clinical studies?

Rob Houben^{2,3}, *Dieter Rosenbaum*⁴, *Matthijs Lipperts*^{1,5}, *Rachel Senden*¹, *Carsten Müller*⁴, *Dieter Klein*⁴, *Bernd Grimm*¹

¹AHORSE Foundation, Atrium Medical Center, Heerlen, The Netherlands, ²Dept Medical Physics, Atrium Medical Center, Heerlen, The Netherlands, ³Dept Physics, Technical University Eindhoven, Eindhoven, The Netherlands, ⁴Center for Musculoskeletal Medicine, University of Münster, Münster, Germany, ⁵St. Anna Hospital, Geldrop, The Netherlands

P1.3

Biomechanical comparison of headless antegrade screw versus retrograde cortical screw for coronoid fracture fixation.

Ahmet Karakaşlı, *Onur Başcı*, *Onur Hapa*, *Cemal Dinçer*, *Vadiym Zhamilov*, *Erdem Kumtepe*, *Mustafa Güvencer*, *Hasan Havitçioğlu*

Dokuz Eylül University, İzmir, Turkey

P1.4

Biomechanical comparison of the new designed micro movement allowing plate with respect to the rigid plate.

*Ozgur BINBAS*¹, *Bora UZUN*², *Hakan OFLAZ*³, *Onder BARAN*¹, *Hasan HAVITCIOGLU*¹

¹Dokuz Eylül University, Medical Faculty, Department of Orthopedics and Traumatology, İzmir, Turkey, ²Dokuz Eylül University, Health Science Institute, Department of Biomechanics, İzmir, Turkey, ³Izmir Katip Celebi University, Department of Bioengineering, İzmir, Turkey

P1.5

Biomechanical comparison of different screw designs for the correction of severe metatarsus primus varus based on the Ludloff osteotomy

Klemens Trieb, *Stefan Hofstaetter*

Dept. of Orthopedics, Wels, Austria

P1.6

Improving of intramedullary nails used on bone defects and extremity lengthening: design of a new intramedullary nail.

*Bora UZUN*¹, *Hasan HAVITCIOGLU*^{2,1}

¹Dokuz Eylül University, Health Science Institute, Department of Biomechanics, İzmir, Turkey, ²Dokuz Eylül University, Medical Faculty, Department of Orthopedics and Traumatology, İzmir, Turkey

P1.7

A new intramedullary sustained dynamic compressive nail for the treatment of long bone fractures: a biomechanical study

*Ahmet KARAKASLI*¹, *Orcun TAYLAN*², *Salih CELIK*², *Hasan HAVITCIOGLU*^{1,2}

¹Dokuz Eylül University, Medical Faculty, Department of Orthopedics and Traumatology, İzmir, Turkey, ²Dokuz Eylül University, Health Science Institute, Department of Biomechanics, İzmir, Turkey

P1.8

Biomechanical comparison between a standart intramedullary nail and self-guided multiple cannulated intramedullary nail.

*Savas DUZEL*¹, *Fatih ERTEM*², *Orcun TAYLAN*², *Bora UZUN*², *Hasan HAVITCIOGLU*^{1,2}

¹Dokuz Eylül University, Medical Faculty, Department of Orthopedics and Traumatology, İzmir, Turkey, ²Dokuz Eylül University, Health Science Institute, Department of Biomechanics, İzmir, Turkey

P1.9

Biomechanical study of the intramedullary nailing in the treatment of femoral shaft fractures

Sergio Puértolas^{1,2}, *Sergio Gabarre*¹, *Jorge Albareda*^{4,3}, *Antonio Herrera*^{3,5}, *Elena Ibarz*^{1,2}, *Enrique López*⁶, *Luis Gracia*^{1,2}

¹Department of Mechanical Engineering, University of Zaragoza, Zaragoza, Spain, ²Aragon Institute of Engineering Research (i3A), Zaragoza, Spain, ³Department of Surgery, University of Zaragoza, Zaragoza, Spain, ⁴Department of Orthopaedic Surgery and Traumatology, Lozano Blesa University Hospital, Zaragoza, Spain, ⁵Aragón Health Sciences Institute, Zaragoza, Spain, ⁶Department of Design and Manufacturing Engineering, University of Zaragoza, Zaragoza, Spain

P2 Bone Regeneration & Tissue Engineering

P2.1

Evaluation of the contribution of a marine hemoglobin in the culture of mesenchymal stem cells in two- and three-dimensional scaffolds.

Fiona Le Page^{1,2}, *Elisabeth Leize-Zal*^{1,3}, *Frédéric Dubrana*⁴, *Claude Férec*^{1,5}, *Morgane Rousselot*³, *Franck Zaïr*³, *Pascal Delépine*¹

¹Inserm U1078, Brest, France, ²Hemarina S.A, Morlaix, France, ³UFR d'Odontologie, Brest, France, ⁴Centre Hospitalier Régional Universitaire, Brest, France, ⁵Etablissement Français du Sang, Brest, France

P2.2

Superiority of human mesenchymal stem cells derived from bone marrow compared to adipose tissue for bone tissue engineering

*Meadhbh Brennan*¹, *Audrey Renaud*¹, *Jérôme Amiaud*¹, *Fabien Guilloton*², *Frederic Deschaseaux*², *Luc Sensebé*², *Dominique Heymann*¹, *Pierre Layrolle*¹

¹INSERM UMR957, Laboratory of the Pathophysiology of Bone Resorption, Faculty of Medicine, University of Nantes, Nantes, France, ²STROMALab UMR UPS/CNRS 5273, U1031 INSERM, EFS-Pyrénées-Méditerranée 31432, Toulouse, France

P2.3

Age matters- Molecular mechanisms contributing to tendon ageing.

Renate Gehwolf^{1,4}, *Andrea Wagner*^{1,4}, *Christine Lehner*^{1,4}, *Herbert Tempfer*^{1,4}, *Amy D. Bradshaw*², *Heimo Wolinski*³, *Hans-Christian Bauer*^{1,4}, *Andreas Traweager*^{1,4}

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P2.4

Regeneration of a rat femoral critical-size defect using tendon-derived stem cells.

Nadja Kunkel^{1,4}, *Andrea Wagner*¹, *Renate Gehwolf*¹, *Oliver Betz*¹, *Peter Augat*³, *Heinz Redl*⁵, *Herbert Resch*⁴, *Patrick Heimel*⁵, *Herbert Tempfer*¹, *Hans-Christian Bauer*¹, *Andreas Traweager*¹

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P2.5

Najdanovic J, Najman S, Cvetkovic V, Trickovic D, Curlis JZ, Zivkovic J, Trajanovic M. The effect of endothelial supplements on endothelial cell differentiation of BALB/c mice adipose tissue-derived mesenchymal cells in vitro.

*Jelena Najdanovic*¹, *Stevo Najman*¹, *Vladimir Cvetkovic*², *Dragana Trickovic-Vukic*¹, *Jelena Zivanov-Curlis*¹, *Jelena Zivkovic*¹, *Miroslav Trajanovic*³

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P2.6

The pH in the microenvironment of human mesenchymal stem cells is a critical factor for optimal osteogenesis in tissue engineered constructs

*Laurent-Emmanuel Monfoulet*¹, *Morad Bensidhoum*^{1,2}, *Pierre Becquart*¹, *David Marchat*³, *Marianne Bourguignon*^{1,2}, *Hervé Petite*^{1,2}, *Delphine Logeart-Avramoglou*^{1,2}

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P2.7

Nanog down-regulates the Wnt signaling pathway via β -catenin phosphorylation during epidermal stem cell proliferation and differentiation

Peng Chena, *Anmin Chen*, *Hui Huang*, *Fengjing Guo*

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P2.8

Adenoviral mediated co-expression of BMP-2 and VEGF-165 in Tissue Engineering

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P3 Cartilage Repair & Osteoarthritis

P3.1

Atorvastatin increases the biomechanical strength of the repaired rotator cuff, by the cyclooxygenase-2 dependent mechanism

[Oleg Dolkart](#)^{1,2}, [Tamar Liron](#)², [Ofir Chechik](#)¹, [Dalia Somjen](#)¹, [Tamar Brosh](#)³, [Yankel Gabet](#)², [Eran Maman](#)¹

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P3.2

Cyclic tensile strain stimulates TGF- β -Smad3-dependent expression of CCN2 and COL2A1 in chondrocytic SW1353 cells

[Takayuki Furumatsu](#), [Takaaki Tanaka](#), [Tomoko Kanazawa](#), [Shinichi Miyazawa](#), [Masataka Fujii](#), [Toshifumi Ozaki](#)

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P3.3

Mechanical stretch-mediated CCN2 up-regulation in meniscus cells

[Takaaki Tanaka](#), [Takayuki Furumatsu](#), [Tomoko Kanazawa](#), [Emi Ogawa](#), [Shinichi Miyazawa](#), [Yukimasa Okada](#), [Masataka Fujii](#), [Hiroto Inoue](#), [Toshifumi Ozaki](#)

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P3.4

Intra-articular doxycycline-chondroitin sulfate application improves cartilage hardness in osteoarthritic rabbit knees

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P3.5

Biocompatibility and biomechanics features of chondrocyte cells on loofah based scaffolds combination with hydroxyapatite, cellulose, poly-L-lactic acid.

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P3.6

The Capacity of Differentiation in human mesenchymal stem cells into discogenic phenotype using three dimensional culture

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P3.7

The identification of differentially expressed long intergenic non-coding RNAs (lincRNAs) in knee osteoarthritis cartilage.

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P3.8

Expression of proteoglycan in the intervertebral disc cells using deferexamine

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P3.9

Simultaneous Anterior Vertebral Column Resection-Distractio and Posterior In-Situ Rod Contouring for Restoration of Sagittal Balance: Report of a Technique and Results of a Case Series.

[Alexander Durst](#), [Shaishav Bhagat](#), [Am Rai](#)

Norfolk and Norwich University Hospital, Norwich, UK

P3.10

Multimodal neuromonitoring is the gold standard in spinal deformity surgery: A single centre experience of 353 consecutive adult and paediatric spinal deformity operations

[Alexander Durst](#), [Shaishav Bhagat](#), [Helen Grover](#), [Julian Blake](#), [Am Rai](#), [Lennel Lutchman](#), [Robert Crawford](#)

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P3.11

Pathogenesis of hypertrophied ligamentum flavum in lumbar spinal canal stenosis

[Yutaka Yabe](#)¹, [Yoshihiro Hagiwara](#)¹, [Akira Ando](#)¹, [Masahiro Tsuchiya](#)¹, [Takashi Minowa](#)², [Taro Takemura](#)², [Masahito Honda](#)², [Kazuaki Sonofuchi](#)¹, [Kenji Kanazawa](#)¹, [Masashi Koide](#)¹, [Takuya Sekiguchi](#)¹, [Eiji Itoi](#)¹

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P3.12

Anterior Cruciate Ligament Injury And Radiological Progression Of Knee Osteoarthritis

[Adil Ajuied](#)¹, [Fabian Wong](#)¹, [Christian Smith](#)¹, [Mark Norris](#)¹, [Peter Earnshaw](#)¹, [Diane Back](#)¹, [Andrew Davies](#)^{2,1}

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P3.13

How Knee Osteoarthritis May Change Gait Biomechanics: a review study

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P3.14

The expression and functional role of visfatin in patients with hip osteoarthritis.

[Ashleigh Evans](#), [Mark Pearson](#), [David Bartlett](#), [Janet Lord](#), [Simon Wynn-Jones](#)

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P3.15

Two-to-twelve year's outcome of Foot Surgery in Rheumatoid Arthritis

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P4 Ethics & Regulation

P4.1

Consent Lament? A National Survey of Procedure Specific Consent Form Implementation in UK Spinal Centres

[James Corbett](#), [Kajan Mahendran](#), [Shaishav Bhagat](#)

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P4.2

Experience and development of the Voluntary Harmonization Procedure for multinational clinical trials

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P5 Hip Arthroplasty

P5.1

Cellular oxidative stress and its relationship with osteonecrosis of femoral head

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P5.2

Upregulation of TNF, NF- κ B, and CCL18 in periprosthetic tissues from early revisions in stable implants comparing to tissues from aseptically loosened total hip arthroplasty

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P5.3

Do genes influencing pro-inflammatory molecules (IL-6, CCL2/MCP-1, CRP) affect the prosthesis failure? – A pilot study

Petra Schneiderova¹, Regina Fillerova¹, Tereza Tomankova¹, Frantisek Mrazek¹, Jiri Gallo^{2,3}, Eva Kriegova¹

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P5.4

Femoro-acetabular impingement in young dysplastic hips treated with hip arthroscopy: 1-year outcomes.

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P5.5

Cement intravasation. An incidental finding in uncomplicated well cemented femoral stems.

Juan Antonio Alonso del Olmo, José Emilio Reyes Rodriguez, Ernesto Carlos Otero Tabares, Ana Fajardo Ruiz, Lidia Cid García

Hospital General Segovia, Segovia, Spain

P5.6

Tranexamic acid versus fibrin sealant in total hip replacement. A non-randomised comparative study.

Aatif Mahmood, Aaron Borbora, Gunasekaran Kumar, Viju Peter

Royal Liverpool and Broadgreen University Hospitals NHS Trust, Liverpool, UK

P5.7

Peri-prosthetic Cement Mantle Fracture without Associated Femoral Fracture Following Total Hip Arthroplasty

John Jeffery¹, Reza Mayahi¹, Andrew Hotchen², Peter McLardy-Smith¹

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P5.8

Technique of Minimally Invasive Hip Screw Fixation for Intertrochanteric Fractures.

Jill Rutherford-Davies, Aatif Mahmood, Gunasekaran Kumar

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P5.9

Radiographic Subsidence In Excia Hip Prosthesis Following Elective Un-cemented Total Hip Arthroplasty

Iain Bohler, Vimal Velu, Yahya Husami, Alec Campbell

University Of Glasgow, Glasgow, UK

P5.10

A novel approach for in situ observation of lubricant film at the interface between artificial head and cup of THA

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P6 Osteoporosis & Bone Diseases

P6.1

Analysis of signal-to-noise ratio in cortical bone of the ovariectomized rats at early stage by using MRI with SWIFT technique

Tsuyoshi Sukenari¹, Motoyuki Hori¹, Kazuya Ikoma¹, Masamitsu Kido¹, Shigeki Hayashi¹, Yusuke Hara¹, Tetsuro Yamasaki¹, Hiroyoshi Fujiwara¹, Toru Morihara¹, Mitsuhiro Kawata², Toshikazu Kubo¹

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P6.2

Training with jumps improves the mechanical properties and bone mineral density in osteopenic rats

Gabriela Yanagihara, Aline Paiva, Ana Macedo, Adrielly Morgenstern, Álvaro Penoni, Gabriel Gasparini, José Volpon, Antônio Shimano

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P6.3

DXA not accurate enough: A new application of Dental Cone-Beam CT to predict the cortical bone strength based on rat model.

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P6.4

Metabolism disorders and connections with thyroid problems

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P6.5

Cortical thickness and porosity of the proximal humerus correlate with osteoporotic bone remodelling: An analysis of micro-structural remodelling

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P6.6

Efficacy of Silicate-Substituted Calcium Phosphate with Increased Strut Porosity as a Standalone Bone Graft Substitute and Graft Extender in an Ovine Critical Defect Model

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P6.7

Cement flow behaviour in artificial cancellous bone structures.

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P6.8

Inhibition of TGF-beta signaling pathway blocks the development of osteosarcoma lung metastases

Audrey Lamora^{1,2}, Julie Talbot^{1,2}, Jérôme Amiaud^{1,2}, Gwénelou Bougras^{1,2}, Marie Cécile Le Deley³, Dominique Heymann^{1,2}, Françoise Rédini^{1,2}, Franck Verrecchia^{1,2}

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P6.9

The Effects of Direct Factor Xa Inhibitor (Rivaroxaban) on Bone Healing : an in vitro and in vivo study.

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P6.10

Extraskeletal Mesenchymal Chondrosarcoma Arising in Adductor Magnus with Metastatic Foci; Radiological Findings and Clinical Management- First Report

Alan Alexander¹, Kyle Hunter¹, Allen Rovner², Ankur Garg²

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P6.11

Evaluation of femoral perfusion in a rabbit model of steroid-induced osteonecrosis by dynamic contrast-enhanced MRI

Shigeki Hayashi¹, Mikihiro Fujioka¹, Kazuya Ikoma¹, Masazumi Saito¹, Keiichiro Ueshima¹, Masashi Ishida¹, Masaaki Kuribayashi¹, Akira Ikegami¹, Osam Mazda², Toshikazu Kubo¹

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P6.12

EFFECTS OF INGESTION OF COFFEE AND CALCIUM IN QUALITY OF BONE TISSUE

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P7 Biomaterials

P7.1

Biomaterial antibacterial efficiency with reduced level of porosity

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P7.2

Hydrogel Encapsulating Antibiotic in Osteomyelitis Prevention in Rats

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P7.3

Animal models of peri-prosthetic joint infection. Literature review and description of our model.

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P7.4

Bupivacaine-Loaded Injectable Calcium Phosphate Cement can reduce Postoperative Pain in iliac bone graft model dogs.

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P7.5

Efficacy of bone morphogenetic protein-2 immobilized on copolymer scaffolds: *in vitro* and *in vivo* evaluations

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P7.6

Evaluation of biocompatibility of newly developed surgical threads made of PGA-co-PLA & PHB

Boauslawa Zywicka¹, Elzbieta Mielicka², Anna Pinar², Ewa Zaczynska³, Anna Czarny³, Agnieszka Walak², Izabela Krucinska⁴, Danuta Ciechanska⁵, Piotr Walak⁶, Barbara Uminska-Wasiluk⁶, Izabela Oleksiewicz²

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P7.7

Effects of high molecular weight hyaluronan for joint capsule in a rat immobilized knee model

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P7.8

Comparison of intraarticular reactions to Multi Walled Carbon Nanotubes(MWCNTs) by injection at once with three divided times.

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P7.9

Evaluation of peripheral nerve regeneration with Diffusion Tensor Imaging (DTI); *in vivo* rabbit study.

Tetsuro Yamasaki¹, Ryo Oda¹, Hiroyoshi Fujiwara¹, Shigeki Hayashi¹, Tsuyoshi Sukenari¹, Yusuke Hara¹, Shinsuke Morisaki¹, Kazuya Ikoma¹, Kei Yamada², Mitsuhiro Kawata³, Toshikazu Kubo⁴

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P8 Infection & Trauma

P8.1

The usefulness of neutrophil CD64 expression in diagnosis of musculoskeletal infection

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P8.2

OPEN FRACTURE DISLOCATION OF THE ANKLE COMPLICATED BY TIBIALIS POSTERIOR TENDON INTERPOSITION

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P8.3

Adequacy of 'Trauma Pelvis X-rays' in Accident & Emergency in a District General Hospital

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P8.4

High Mortality And Reduction In Function Following Distal Femoral Fractures In The Elderly.

Jill Rutherford-Davies¹, Aatif Mahmood¹, Gunasekaran Kumar¹
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P8.5

Temporal Variance of Abbreviated Mental Test Score in Proximal Femoral Fracture Patients

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P8.6

Analysis of sacroiliac joint screw fixation: Do quality of reduction and screw orientation influence biomechanical stability?

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P8.7

Do intramedullary elastic nails remain a viable option for treating femoral fractures in obese children?

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P8.8

Dual plating for fixation of humeral shaft fractures: Mechanical comparison of various combinations of plate lengths.

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P8.9

Outcomes of distal radius fractures in very elderly active patients; should we use distal volar locking plates?

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P8.10

A Biomechanical Evaluation Of Vancouver Type B1 Femoral Periprosthetic Fracture Fixation Using A Purpose-Designed Plating System.

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P8.11

The Use of Hydroxyapatite coated wires in non union surgery using the Ilizarov frame

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P8.12

OSTEOINDUCTION OF LARGE BONE DEFECT WITH ARTIFICIAL BONE GRAFT AND AUTOLOGOUS BONE MARROW ASPIRATE- A CASE REPORT.

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P9 The Knee

P9.1

Total Knee Arthroplasty Using Patient Specific Guides In Valgus Knees: Our Experience In 37 Patients

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P9.2

The use of the Ligament Augmentation and Reconstruction System (LARS) for posterior cruciate reconstruction: A review of 129 cases.

Christian Smith, Fabian Wong, Mark Norris, Diane Back, Andrew Davies, Adil Ajuied

Guy's and St Thomas' NHS Foundation Trust, London, UK

P9.3

Publication Trends In Knee Surgery- A Review Of The Last 16 Years

Christian Smith, Fabian Wong, Diane Back, Andrew Davies, Peter Earnshaw, Adil Ajuied

Guy's and St Thomas' NHS Foundation Trust, London, UK

P9.4

Effects of bone deformity on alignment discrepancies during total knee arthroplasty using an image-free computer-assisted guidance system

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P9.5

Right or wrong side surgery?

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P9.6

Total Knee Arthroplasty In Patients Aged 50 Years and Younger, Where are we now:- A Review.

Adil Ajuied, Ziad Harb, Christian Smith, Ciaran McGarvey, Diane Back, Andrew Davies

Guy's and St Thomas' NHS Foundation Trust, London, UK

P9.7

Non Patella Resurfacing Techniques in Total Knee Arthroplasty, are all Interventions Equal?

Iain Findlay, Fabian Wong, Christian Smith, Peter Earnshaw, Diane Back, Adil Ajuied

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P9.8

A prospective radiological study for treatment of juvenile flexible flatfoot; effect of the calcaneus stop screw to the heel valgus

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P9.9

Trifocal Osteotomy for the correction of severe Hallux Valgus deformity

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P9.10

Relationship between TKA implant size and patient body size - effect of surgery types

Bo Gao, Laurent Angibaud, Diane Johnson

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P9.11

Simultaneous Bilateral Knee Arthroscopy: Safe and Cost Effective?

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P9.12

Reverse Total Shoulder Arthroplasty: A prospective functional assessment study of 63 consecutive patients in a district general hospital

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P9.13

Extreme bradycardia associated with the use of radiofrequency ablation probe at knee arthroscopy

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P9.14

Abbreviated mental test score as a guide for patient consenting & predicting mortality after orthopaedic surgery: A need for re-look

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P9.15

Impinging cement body in uni-compartmental knee replacement & arthroscopic removal

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P10 Implant Surface Modifications

P10.1

Effect of bone-related gene expression on the implant coatings incorporating manganese

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P10.2

SEM and XPS Surface Study of Five Clinically Retrieved Titanium Dental Implants

Margarita Hierro-Oliva^{1,2}, Alberto Monje⁴, Raúl González-García⁵, María Coronada Fernández-Calderón^{1,3}, Fernando Suarez⁴, Pablo Galindo-Moreno⁶, Hom-Lay Wang⁴, Florencio Monje⁵, María Luisa González-Martin¹

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P10.3

In vitro assessment of PEEK surfaces functionalized with RGD/OGP peptidomimetics to enhance osteointegration

Joseba Oyarbide^{1,2}, Patxi Azpirroz^{1,2}, Iñigo Braceras^{1,2}, Carolina Vera^{1,2}, Anetxu Ayerdi^{1,2}, Beatriz Olalde^{1,2}, Nerea Briz^{1,2}, Jesus Valero^{1,2}, Fabrice O. Morin^{1,2}, Maialen Sagartzazu Aizpurua³, Jesus M. Aizpurua³

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P10.4

Enhancing mineralization of high crystalline Sr-HA coatings on titanium

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P10.5

The new forged ultralow-nickel Co-Cr-Mo alloys reduced metal ion release in mice

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P10.6

Anti-Microbial Modification by Using Covalently Attached Chlorhexidine on Photodefinable Parylene Coatings for Orthopedic Metal Implant

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P10.7

Antimicrobial Surface of Orthopedic Metal Plate by Thin Coating with Waterborne Polyurethane and Novel Ag-silicate Platelet Nanohybrids

Mark Hung-Chih Chen¹, Bing-Heng Lee¹, Yi-Hsiu Huang², Chia-Jie Chen¹, Pin-Chun Chou¹, Shu-Yun Yeh¹, Jiang-Jen Lin², Chih-Hao Chang^{1,3}

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P10.8

In Vitro Assessment of Novel Vancomycin containing VK100 for Cell Culture Studies, Vancomycin Release Studies and Anti-microbiological Action

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P10.9

Local delivery of alendronate and bone remodelling in rat models

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author index

Abdulkarim, Ali	O13.1 O16.4 O16.5 O7.10 O7.9		O21.2 O6.3 O6.4 P9.10 P9.4	Barcay, Katherine Bareille, Reine Barla, Jorge Barrios, Carlos	O17.8 O20.6 O5.2 P8.6 O14.3
Achan, Pramod	P8.10	An, Kai-nan	P1.1		O14.4
Ada, Sait	S3.5	Anne-Laure, Gamblin	O3.4		O19.4
Aframian, Arash	O2.11 O8.11 P8.3 P9.11 P9.12 P9.13 P9.14 P9.15 O14.6	Antón-Rodríguez, Miguel	O5.7 O3.11 O14.3	Barrios-Pitarque, Carlos Bartlett, David Barton, Cevin	O7.2 P3.14 O11.8
Aguado, Javier	O14.6	Anwar, Rahij	P9.1	BASCI, Onur	P8.8
Agulla, Manuel	O14.6	Arai, Yukihiro	O7.4	Bastidas Coral, Angela P	O10.3
Aizpurua, Jesus M	P10.3	Ardura-Aragon, Francisco	O7.2 O14.6 O14.8	Batool, Zainab BATTAGLIA, Séverine	O7.8 O1.3 O15.2
Ajuied, Adil	O11.3 O19.5 P3.12 P9.2 P9.3 P9.6 P9.7	Arenas, María Angeles	O19.4 O10.1 O4.3 O10.7	Baud'huin, Marc Bauer, Hans-Christian	O1.1 P2.3 P2.4
Al-Azzani, Waheeb A K	O11.10 O17.1 P1.9 P6.10 O17.2 O18.10 O20.3 O3.1 O3.5 O1.6	Armengol, M	O18.11	Beckmann, Rainer	O3.2 O20.2
Albareda, Jorge	P1.9	Arts, Chris	O19.9	Beck, Stefan	O2.9
Alexander, Alan	P6.10	Arts, Jacobus	O2.8 O6.10 O8.3 O2.9	BECQUART, Pierre	O10.2 O5.5 P2.6
Al-Hajjar, Mazen	O17.2	Assad, Michel	P6.6	Beijer, Emiel	O19.9
Alini, Mauro	O18.10 O20.3 O3.1 O3.5 O1.6	Audrey, Renaud	O3.11 O3.4 O5.7 P2.4	Bellemans, Johan Bell, Kevin M Bénédicte, Brounais Bensidhoum, Morad	O6.2 O18.9 O3.11 O10.4
Allan, David	O18.10	Augat, Peter	P2.4		O17.9
ALMASS, ALI	O20.3	Avery, Naomi	O16.1		O5.4
Alonso del Olmo, Juan Antonio	O3.1	Avnet, Sofia	O3.3		O5.5
Al-Soudaine, Yassr	O3.5	AVRIL, Pierre	O15.3 O15.4 O20.5		O5.6 P2.6
Alsousou, Joseph	O1.6	Awad, Hani	P3.4	Berger, Georg	O2.5
Alt, Volker	P8.12	Aydin, Ozlem	P10.3	Bernardini, M	O18.10
Alvès, Antoine	P5.5	Ayerdi, Anetxu	P10.3	Bernard, Jason	O8.11
Amar, Eyal	O11.10	Azpirroz, Patxi	P1.3	Bernard, Jean-Pierre	O8.10
Amédée, Joelle	O12.5	Başçı, Onur	O19.5	Berreuer, Martine	O1.1
Amiaud, Jérôme	S5.1	Back, Diane	P3.12 P9.2 P9.3 P9.6 P9.7	Berza, Natalija	O2.3 P7.1 P2.4 P3.10 P3.9
Amin Yavari, Saber	O8.10	Bader, Rainer	O4.1	Betz, Oliver	P7.1
Amirouche, Farid	P6.9	Bagot d'Arc, M	S1.1	Bhagat, Shaishav	P2.4 P3.10 P3.9
Anastasakis, Dimitrios	O20.6	Baldini, Nicola	O12.7 O3.3		P4.1
Andersen, Michael Skipper	P6.8	Bankes, Marcus	O11.3	Bhosale, Abhijit	O12.1
Ando, Akira	O10.3 O9.4 O17.5 O6.5 P3.11 P7.7	Baptista, Augusto André	O8.10		O13.6 O13.7 P3.15 P9.9
Andres-De Llano, Jesus	O7.2	BARAN, Onder	P1.4	Bianchi, Michele	O8.2
Angibaud, Laurent	O13.5 O19.1 O19.3	Barbero, Andrea	O18.1	Bierling, Philippe	O5.8
		Barbucci, Rolando	O15.1	Bilgic, Elif	P3.4

BINBAS, Ozgur	P1.4		O14.4	Chitre, Amol	O17.10		P3.12		P6.9	Evans, Ashley	P3.7
BIZOT, Pascal	O17.3	Busetto, R	O18.10		P5.4		P9.2	Domenech, Pedro	O14.3	FABRE, THIERRY	S1.1
Blake, Julian	P3.10	Bystrytska, Maryna	O1.9	Chou, Pin-Chun	P10.6		P9.3	Dominique, Heymann	O3.11	Fajardo Ruiz, Ana	P5.5
Blasco, Carmen	P5.1	Cabañes, Lidia	O14.4		P10.7		P9.6		O3.4	FARGES, Jean-Christophe	O15.2
Blom, Ashley	O11.9	Cadossi, Matteo	O18.6	Christen, Patrik	O19.10	Davis, Edward	O17.4		O5.7	Fauchadour, Marie	S2.2
Bochynska, Agnieszka	O18.2	Cai, Feng	O18.4	Chuang, Pei-Chin	O9.5	Davy, Sebastien	S2.1	Doskeland, Anne	P7.5	Faucheux, Nathalie	O3.10
BOEUF, GUILHEM	O2.2	Callens, Rutger	O13.4	Chung, Eugene	P9.1	Dawson, Jonathan	O3.7	Dottino, Carlo	O13.2	Fayon, Franck	O8.6
Boger, Andreas	P6.7		O13.8	Chu, Yu-Pu	P10.4	De Benedictis, G	O18.10	Drago, Lorenzo	O1.2	Fazio, Nicola	O12.7
Bohler, Iain	P5.9	Camino, Gaston	P8.6	Ciapetti, Gabriela	O3.3	de Blas, Gema	O14.4	Drevelle, Olivier	O3.10	Fehily, Max	P5.4
Boi, Marco	O8.2	Campbell, Alec	P5.9	Cid García, Lidia	P5.5	De Boodt, Sebastian	O19.7	DRIDI, CYRINE	O2.2	Felgueiras, Helena	O4.8
Boivin, Georges	O8.10	Campbell, Graem	O20.2	Ciechanska, Danuta	P7.6	de Buret, Kirsten	O11.8	Dubois, Guillaume	O21.1		O4.9
Bolink, Stijn	O21.3	Campion, Charlie	P6.6	Civinini, Roberto	O4.10	Decambrom, Adeline	O5.4	Dubouset, Jean	O21.1	Fellah, Borhane	P7.4
	O6.11	Canal, Cristina	O8.8	Clouet, Johann	O14.7	Declerck, Herlien	O19.7	Dubrana, Frédéric	P2.1	Férec, Claude	P2.1
Bonnamy, Sylvie	O8.6	Capkova, Zuzana	P5.2	Coffey, Peter	O16.4	de Damborenea, Juan José	O10.1	Ducint, Dominique	O16.3	Fernández- Calderón, María	P10.2
Bonneau, Dominique	O21.1	Carrasco, Joaquin	P5.1		O7.10		O4.3	Duda, Georg	O17.6	Coronada	
Borbora, Aaron	O11.4	Carulli, Christian	O4.10	Cohen, Or	O4.5		O10.7	Durand, Marlène	S1.1	Feyerabend, Frank	O2.10
	P5.6	CASTANEDA, Béatriz	O15.2	Conde, Ana	O10.1	Dediu, Valentin Alek	O8.2		O5.2	Fillerova, Regina	P5.2
Bord, Eric	O14.7	Castellarin, Gianluca	O13.2		O10.7	Deehan, David	O11.11	Durst, Alexander	P3.10		P5.3
Boriani, Filippo	O12.7	CATONNE, YVES	S1.1		O4.3	Defontaine, Cyril	O4.7		p3.9	Findlay, Iain	P9.7
Borse, Vishal	O14.2	Catros, Sylvain	O20.6	Conway, Bernard	O6.7	De Landsheer, Koen	O6.1	Duttenhoefer, Fabian	O3.5	Fingernagel, Thomas	P9.8
Borzi, Rosa Maria	O9.6	CECEN, Berivan	P3.5	Copaver, Karine	S1.2	d'Elbée, Jean-Marie	O5.2	DUZEL, Savas	P1.8	Fini, Milena	O15.1
Bougras, Gwenola	P6.8	CELIK, Salih	P1.7	Coraca-Huber, Debora	O2.6	De Lepeleere, Bram	O12.6	Dzerovych, N	O1.10		O18.6
Bouler, Jean-Michel	P7.4	Celine, Charrier	O3.4	Corbett, James	P4.1	Delépine, Pascal	P2.1	Earnshaw, Peter	P3.12		O9.6
Bourget, Chantal	O5.2		O5.7	CORDOVA, Luis	O1.3	Della Bella, Elena	O15.1		p9.3	Finne-Wistrand, Anne	P2.8
Bourguignon, Marianne	P2.6	Chakrabarti, Dip	O7.8	Cornet, Sandro	O16.3	Delmond, Samantha	O20.6		p9.7	Fisher, John	O17.2
Boutroy, Stephanie	O19.10	Chana, Navinderpal Kaur	O3.8	Correa, Carlos	O14.4	Delpeux, Sandrine	O8.6	Eberli, Ursula	O5.9	Forest, Patricia	O8.10
Bowker, Karen	O16.2		O3.9	Corredera, Raul	O14.6	Delpont, Hendrik	O19.7		P6.5	Fotia, Caterina	O12.7
Braceras, Iñigo	P10.3	Chancolon, Jérôme	O8.6	Coupaud, Sylvie	O1.6		O6.1	Edip, Seval	O18.7	Fournier, Joseph	O12.3
Bradner, James E	O1.1	Chang, Chih-Hao	P10.6	Couraud, Lionel	O16.3	Del Rio, L	O1.10	Egashira, Kensuke	O17.7	Franch, Jordi	O8.9
Bradshaw, Amy D	P2.3		P10.7		O5.2	de Monès, Erwan	O5.2		O17.8	Françoise, Redini	O3.11
Brady, Robert	O18.5	CHANGOTADE, SYLVIE	O2.2	Cox, Elin	O17.10	Denaro, L	O18.10	Eglin, David	O18.10	Franklin, Sarah	O12.5
Brama, Pieter	O18.5	Chan, Yuen	O7.7		O2.11	Denaro, Vincenzo	O18.10		O3.1	Fransen, Peter	O3.5
Brans, Boudewijn	O19.9	CHAPPARD, Daniel	O17.3	Crawford, Robert	P3.10		O18.9		O3.5	Frédéric, Blanchard	O3.11
Breighner, Ryan	P1.1	Chapurlat, Roland	O19.10	Crémieux, Anne-Claude	P7.3	Denis, Kathleen	O6.1	EL-BUSAIDY, HEMED	O15.7	Fricain, Jean-Christophe	O20.6
Brennan, Meadhbh	O8.7	CHARRIER, Celine	O1.3	Crudden, Joseph	O14.9	de Pinieux, Gonzague	O15.4	Elena, Shchurova	O14.10		O5.2
	S4.2	Charyeva, Olga	O2.10	Cruel, Magali	O5.5	DERENNE, SOPHIE	S1.3	Eliezer, Amir	O4.4	Friesenbichler, Jörg	O15.6
BRIAND, SYLVAIN	S1.3	CHAUSSAIN, Catherine	O15.2	Cvetkovic, Vladimir	P2.5	Deridet, Evelyne	O16.3	Ellouz, Rafaa	O19.10	Fritz, Bernhard	O14.5
Brilhault, Jean	O12.3	CHAUVEAUX, DOMIQUE	S1.1	Czarny, Anna	P7.6	De Roo, Karel	O6.2	ELMARJOU, AHMED	O2.2	Fujii, Masataka	P3.2
BRION, Régis	O15.2	Chechik, Ofir	P3.1	Czekanska, Ewa	O20.3	Desai, Ankit	P8.11	ELMSELMY, ABDELATIF	O2.2		P3.3
Briz, Nerea	P10.3	Chen, Anmin	P2.7	D'Este, Matteo	O3.1	Desando, Giovanna	O9.6	Emanuel, Kaj	O18.2	Fujioka, Mikihiro	P6.11
Brochhausen, Christoph	O18.3	Chen, Chia-Jie	P10.6	D'Arros, Cyril	O8.7	Deschaseaux, Frédéric	O15.4	Emanuel, Noam	O4.5	Fujiwara, Hiroyoshi	P6.1
Brosh, Tamar	P3.1		P10.7	DACULSI, GUY	S1.1	DESCHAPPER, Mickael	O5.6	Engqvist, Håkan	O14.2		P7.9
Brounais, Bénédicte	O1.1	Chen, Ching-Yun	O3.6		S1.2	Desmet, Wim	O6.1	Ernst, Manuela	O5.9	Furumatsu, Takayuki	P3.2
Bruce, Warwick	P9.1		P7.2	Dai, Jianwu	O20.4	De Strobel, F	O18.10	ERTEM, Fatih	O6.9		P3.3
BRUGIERES, Laurence	O15.2	Cheng, Peng	P2.7	Dakischew, Olga	O4.6	Devine, Eric	O4.4		P1.8	Gabarre, Sergio	P1.9
Bruland, Ove	P2.8	Chen, Hsien-Yeh	P10.6	Dalia, Somjen	O1.4	De Waele, Wim	O6.2		P8.8	Gabet, Yankel	P3.1
Brulez, Bernard	O12.2	Chen, Mark Hung-Chih	P10.6	D'Amato, Roberto	O9.4	De Wilde, Lieven	O9.1	Esbrit, Pedro	O10.1	Gagnieu, Christian	O8.10
Bruque, José M	O4.2		P10.7	Dasí, Francisco	P5.1	Di Gregorio, S	O1.10		O10.3	Galina, Diachkova	O14.10
Bucknall, Vittoria	O19.6	Chen, Yu-Shan	O1.7	Das, Ruud H	O18.7	Dinçer, Cemal	P1.3		O4.3	Galindo-Moreno, Pablo	P10.2
Budair, Basil	O7.8	CHESNEAU, Julie	O15.2	D'Avella, D	O18.10	Di Pompo, Gemma	O3.3	Esteban, Jaime	O10.1	Gallardo-Morenos, Amparo M	O4.2
Buda, Roberto	O18.6	Chevallier, Nathalie	O5.8	Daviau, Alex	O3.10	Doadrio, Antonio Luis	O10.7		O10.7	Gallo, Jiri	P5.10
Buffeloir-Billet, Kevin	O14.7	Chiba, Akihiko	P10.5	David, Bertrand	O10.4	Dodia, Nazera	P3.15		O4.3		P5.2
Burgkart, Rainer	O7.5	Chin Chai, Yoke	O10.3	Davidson, Eleanor	O19.6	Dolkart, Oleg	O1.4	Evangelou, Konstantinos	O17.5		P5.3
Burgos, Jesús	O14.3	Chirputkar, Kedar	O12.1	Davies, Andrew	O19.5		P3.1	Evans, Ashleigh	P3.14	Gao, Bo	O13.5
											O19.1

	O19.3	Glesson, John	O18.5	Guillemot, Fabien	O20.6	Herrera, Antonio	P1.9	Iizuka, Tateyuki	O2.9	Kanazawa, Kenji	P3.11
	O6.3	Glüer, Christian	O20.2	GUILLOT, Raphael	O10.2	Herzog, Jan	O7.5	Ikegami, Akira	P6.11		P7.7
	O6.4	Gomar, Francisco	P5.1	Gulbransen, Scott	O19.3	Hevia, Eduardo	O14.4	Ikoma, Kazuya	P6.1	Kanazawa, Tomoko	P3.2
	P9.10	Gómez-Barrena, Enrique	S4.3	Guo, Fengjing	P2.7	Heyligers, Ide	O21.3		P6.11		P3.3
	P9.4		O10.1	Güvencer, Mustafa	P1.3		O6.11		P7.9	Kang, James	O18.9
García-Cimbrelo, Eduardo	O11.6		O10.3	Guy, Louarn	O3.4		O6.6	Imwinkelried, Thomas	O2.9	Kang, Youngmi	P3.6
	O11.7		O10.7	Gwyn, Rhodri	O12.8		O6.8	Ingham, Eileen	O17.2		P3.8
García Jr., Rolando	O14.5		O11.6	Haak, Esther	O18.7	Heymann, Dominique	O1.1	Innocenti, Massimo	O4.10	Kankilic, Berna	P10.8
García, Patric	O2.5		O11.7		O18.8		O1.3	Inoue, Hiroto	P3.3	Kapur, Nik	O14.2
García-Rey, Eduardo	O11.6		O4.3	Hagiwara, Yoshihiro	P10.5		O15.2	Inzana, Jason	O20.5	Karakaşlı, Ahmet	P1.3
	O11.7	González-García, Raúl	P10.2		P3.11		O15.3	Iqbal, Hafiz J	O11.10		P1.7
García, Vicente	O14.3	González-Martín, María Luisa	P10.2		P7.7		O15.4		O17.1		P8.8
Garg, Ankur	P6.10		O4.2	Hall, Richard	O14.2		O8.7	Ironside, Emily	O16.1	Karimi, Mohammad Taghi	O9.2
Garkusha, Maxim	O1.9	Goodman, Stuart	O17.7	Hamadouche, Moussa	O10.4		P6.8	Isaac, Graham H	O17.2	Kates, Stephen	O20.5
Garmendia-Leiza, Jose Ramon	O7.2		O17.8		O17.9	Hickey, Ben	O12.8	Ishida, Masashi	P6.11	Kato, Hiroyuki	P7.8
		Goossens, Quentin	O6.1	Hamel, Olivier	O14.7	Hierro-Oliva, Margarita	P10.2	Ito, Eiji	P10.5	Katoh, Narutaka	O7.4
Gaspar, Diana	O12.4	Gottschling, Heiko	O7.5	Haniu, Hisao	P7.8	Hilário, Bruna	P6.12		P3.11		P8.1
	O5.3	GOUIN, FRANCOIS	S1.3	Han, Xinglong	O20.4	Hing, Caroline	O2.11		P7.7	Kavanagh, Simon	O7.1
Gasparini, Gabriel	P6.2	Goulart, Patricia	P6.12	Hapa, Onur	P1.3	Hing, Karin Angela	P6.6	Ito, Shigemi	O15.5	Kawano, Mitsuko	P10.5
Gasquères, Cyrille	O4.4	Govil, Amit	O2.4	Haque, Sahena	P3.15		O3.8	Ivanova, Anna	O10.6	Kawata, Mitsuhiro	P6.1
Gatin, Laure	P7.3	Gracia, Luis	P1.9	Hara, Yusuke	P6.1		O3.9	Jackson, Thomas	O7.1		P7.9
Gauthier, Olivier	P7.4	Grafanaki, Katerina	O17.5		P7.9	Hirose, Mitsuru	O7.4		P8.9	Ke, Cherng-Jyh	O3.6
Gee, Chris	P8.9	Green, Gemma	O17.10	Harb, Ziad	O19.5	Hirschmann, Anna	O18.1	Jacob, Joshua	P8.11		P7.2
Gee, Christopher	O7.1		O2.11		P9.6	Hoc, Thierry	O5.5	Jacob, Nebu	O11.2	Kehinde, Elijah	O7.3
Gee, Matthew	O11.3		O8.11	Harmankaya, Necati	P10.9	Hoffmeyer, Pierre	S5.4	Jacques, Camille	O1.1	Keriquel, Virginie	O20.6
	P8.10		P8.3	Harris, Mark	O8.11	Hofstaetter, Stefan	O13.3	Jacxsens, Matthijs	O9.1	Keskin, Dilek	P3.4
GEGOUT-POTTIE, Pascale	O9.3		P9.11	Harrison, Paul	O12.5		P1.5	Jahr, Holger	O10.3	Kettel, Markus	O2.1
Gehwolf, Renate	P2.3		P9.12	Hartl, Martin	P5.10		P9.8		O18.7	Khaleel, Arshad	P8.11
	P2.4		P9.13	Hartman, Robert Allen	O18.9	Hohl, Nicolas	O19.2		O18.8	Khallaf, Fathy	O7.3
Gennisson, Jean-Luc	O21.1		P9.14	Harvey, Edward	O20.1	Hollinghurst, David	P8.5		O20.2	Khan, Imran	O21.5
George, Marc	O11.3		P9.15	Hassaan, Ahmed	O16.6	Holopherne-Doran, Delphine	P7.4		O3.2	Khor, Suan	P9.13
Georgiou, Christos	O17.5	Grevenstein, David	O18.3	Hassaballa, Mohammed	O16.2	Holub, Ondrej	O14.2	Jakob, Marcel	O18.1	Kido, Masamitsu	P6.1
Geurts, Jan	O2.8	Grevenstein, Jakob	O18.3	Hattori, Koshi	O15.5	Holzer, Lukas	O15.6	Jalota, Sahil	O2.4	Kim, Jihye	P3.6
	O8.3	Grigolo, Brunella	O9.6	Havitchioğlu, Hasan	P1.3	Honda, Masahito	P3.11	James, Chris	P9.15		P3.8
Ghani, Yaser	O21.7	Grijpstra, Dirk	O18.2	HAVITCIOGLU, Hasan	O6.9	Hooke, Alexander	P1.1	Janvier, Pascal	P7.4	Kingma, Idsart	O18.2
	P8.2	Grimal, Quentin	O19.8		P1.4	Hoornaert, Alain	O10.5	Jeer, Parminder	P8.3	Kini, Sunil	P9.1
Giannini, Sandro	O18.6	Grimandi, Gael	O14.7		P1.6	Hope, Peter	P9.5		P9.11	Kirkpatrick, C James	O18.3
Giardino, Roberto	O15.1	Grimm, Bernd	O21.3		P1.7	Horii, Motoyuki	P6.1		P9.13	Kleim, Benjamin	O11.11
Giavaresi, Gianluca	O18.6		O6.11		P1.8	Hotchen, Andrew	O16.1	Jeffery, John	O16.1	Klein, Dieter	P1.2
	O8.2		O6.6		P3.5		P5.7		P5.7	Klein, Moritz	O2.5
	O9.6		O6.8		P8.8	Houben, Rob	P1.2	Jennings, Louise M	O17.2	Kobe, Spomenka	O4.6
Gibbs, David	O3.7		P1.2	Hayashi, Shigeki	P6.1	Houghton, Russell	O19.5	Jérôme, Amiaud	O3.11		O4.7
Gigi, Roy	O1.4	GROSS, Jean-Baptiste	O9.3		P6.11	Huang, Hui	P2.7	John, Alun	O11.10	Kohn, Joachim	O4.9
	P6.9	Grover, Helen	P3.10		P7.9	Huang, Yi-Hsiu	P10.7		O17.1	Koide, Masashi	P3.11
GILDE, Flora	O10.2	Grover, Liam	O17.4	Heimel, Patrick	P2.4	Hughes, Erik	O8.5	Johnson, Diane	O13.5		P7.7
Gill, HS	O18.11		O8.1	Helfen, Tobias	P6.5	Hulley, P	O18.11		P9.10	Koizumi, Yuichiro	P10.5
GINDRAUX, Florelle	O5.1		O8.5	Henri, Stephane	S1.2	Hulsen, Dennis	O2.8	John, Thilo	O17.6	Ko, Jih-Yang	O1.7
Ginebra, Maria-Pau	O3.3	Grupp, Thomas M	O14.5	Hernández-López, Juan Manuel	O10.1		O8.3	Jones, Louise	O8.11		O9.5
	O8.8	Güdemez, Eftal	S3.2			Hunter, Kyle	P6.10	Jones, Mark	O11.9		O9.7
	O8.9	Gudimetla, Veera	O11.8		O10.7	Husami, Yahya	P5.9		O7.6	Kolmas, Joanna	O2.7
	S4.1	Gueorguiev, Boyko	P6.5		O4.3	Hussein, Sundus	O7.3	Jones, Simon	P3.7	Kolodziejski, Wacław	O2.7
Ginther, Jeffrey	O19.2		P6.7	Hernandez Ramajo, Ruben	O14.8	Hutchens, Stacy	P6.6	Jonitz-Heincke, Anika	O4.1	Kopru, Cagla Zubeyde	P10.8
Giordano, Gerard	O19.2		P8.6		O19.4	Hutchinson, Richard	P8.7	Jonkers, Ilse	O6.5	Korkusuz, Feza	P10.8
Gislason, Magnús	O1.6	GUILLAUME, Cecile	O9.3	Hernandez, Ruben	O14.6	Ibarz, Elena	P1.9	Junginger, Martin	O2.1		P3.4
Giwa-Osagie, Uyi	P8.3			Hernigou, Philippe	O5.8						

	S3.1	Lefranc, Benoit	O14.7		O4.3	Meadhbh, Brennan	O5.7	Murthy, N Sanjeeva	O4.9		O5.6
Korkusuz, Petek	P10.8	Le Guennec, Jérémy	O14.1	Lui, Truan-Sheng	P10.1	Megas, Panagiotis	O17.5	Murthy, Sathya	P9.12	Oyarbide, Joseba	P10.3
	P3.4	Lehner, Christine	P2.3	Lutchman, Lennel	P3.10	Meisel, Hans Jorg	O14.9		P9.14	Ozaki, Toshifumi	P3.2
Korver, Rob	O6.8	Leithner, Andreas	O15.6	LUTOMSKI, DIDIER	O2.2	Menger, Michael D	O2.5	Musiienko, A	O1.10		P3.3
Kotecha, Amit	O21.7	Leize-Zal, Elisabeth	P2.1	Luxbacher, Thomas	O4.7	Michelet, F	O1.10	Mustafa, Abubakar	P9.9	Oztuna, Volkan	S3.3
KOZACI, Didem	P3.5	Le Nail, Louis-Romé	O15.4	Luyckx, Thomas	O12.6	Mick, Enrico	O4.1	Mustafa, Kamal	P2.8	Pacha-Olivenza, Miguel Ángel	O4.2
K.P., ARUN	P8.12	Leotot, Julie	O5.8		O6.2	Mielicka, Elzbieta	P7.6		P7.5	Paech, Andreas	O1.11
Krause, KE	O13.1	Le Pape, Fiona	P2.1	Macedo, Ana	P6.2	Migonney, Véronique	O12.2	Musumeci, M	O18.10	Paiva, Aline	P6.2
Kriegova, Eva	P5.2	LESCAILLES, Géraldine	O15.2	Maglio, Melania	O15.1		O4.8	N'Guyen, JM	S1.1	Pajarenin, Jukka	O17.7
	P5.3	Leuridan, Steven	O6.1	Mahendran, Kajan	P4.1		O4.9	NADIRADZE, Kakha	P6.4		O17.8
Kroica, Juta	O2.3	Levingstone, Tanya	O18.5	Mahmood, Aatif	P5.6	Migue, David	O14.6	Nagarajan, Meena	O7.8	Panaiteescu, Carmen	P4.2
	P7.1	LEZOT, Frédéric	O15.2		P5.8	Mihok, Peter	O16.2	Naisas, Hamed	O6.11	Pandit, Abhay	O12.4
Krucinska, Izabela	P7.6	Liebelt, Ralph	O19.1		P8.4	Mikhailovsky, Sergey	O8.6	Najdanovic, Jelena	P2.5		O5.3
Krüger, Antonio	O14.8		O19.3	Mahmood, Ihsan	P5.4	MILADI, BALIGH	O2.2	Najman, Stevo	P2.5	Papagelopoulos, Panayiotis	O7.11
	O19.4		P9.4	Mah, Wayne	O20.1	Minowa, Takashi	P3.11	Narayan, Badri	O11.4	Papandreou, Nikolaos	O7.11
Krupka, Ivan	P5.10	Liegl-Atzwanger, Bernadette	O15.6	Maier, Greta	O2.1	Miot, Sylvie	O18.1	Nasser, Bilal	O6.7	PAQUET, Joseph	O5.6
Kubo, Toshikazu	P6.1	Li, Lily	P9.5	Maillard, Nicolas	O14.7	Mitchell, Steve	O7.6	Neumann, Lars	O19.7	Park, Jinoh	P3.6
	P6.11	LIN, CHICHEN	O1.5	MAINARD, Didier	O9.3	Mitra, Aweek	P8.5	Nich, Christophe	O17.9		P3.8
	P7.9	Lindsay, Mark	P3.7	Majewski, Jacek	O20.1	Mitrovic, Aurica	O4.1	Nickel, Joachim	P7.5	Parry, Michael	O11.9
Kulkarni, Shrikant	P8.2	Lin, Feng-Hui	O3.6	Malviya, Ajay	O11.11	Miyazawa, Shinichi	P3.2	Ni, Li	O20.4		O7.6
Kumar, Gunasekaran	O11.5	Lin, Jiang-Jen	P10.7	Maman, Eran	P3.1		P3.3	Nilsson, Malin	O14.1	Pasparakis, Dimitrios	O7.11
	P5.6	Lin, Tzu-hua	O17.7	Mamilos, Andreas	O18.3	Mohammed, Khadir	O7.1		O14.2	Pastorino, David	O8.8
	P5.8		O17.8	Manassero, Mathieu	O12.2		P8.9	Nishimura, Keita	P8.1	Pastor, Sara	P5.1
	P8.4	Lipperts, Matthijs	P1.2		O5.4	MOINARD, M	S1.1	Nishino, Jinju	P8.1	Pastrav, Leonard	O6.1
Kumar, VP	O1.8	Lippross, Sebastian	O20.2	Manzanares, Cristina	O8.9	Molimard, Mathieu	O16.3	Nistri, Lorenzo	O4.10	Patat, Frederic	O12.3
KUMTEPE, Erdem	O6.9		O3.2	Marcacci, Maurilio	O8.2	Monfoulet, Laurent-Emmanuel	P2.6	Nogler, Michael	O2.6	Pawaskar, Aditya	O1.8
	P1.3	Lips, Katrin Susanne	O2.10	Marchat, David	P2.6	Monje, Alberto	P10.2	Nomura, Hiroki	P7.8	Pearce, Oliver	O16.1
Kung, Kuan-Chen	P10.1		O4.6	Marcinkowska, Malgorzata	O8.8	Monje, Florencio	P10.2	Noriega-Gonzalez, David Cesar	O14.6	Pearson, Mark	O17.4
	P10.4		O4.4	Marcos, Bernard	O3.10	Montes, Elena	O14.4		O14.8		P3.14
Kunkel, Nadja	P2.4	Liron, Tamar	P3.1	MAREC-BERARD, Perrine	O15.2	Monti, Lorenzo	O1.2		O19.4	Pedersen, Torbjorn O	P7.5
Kuribayashi, Masaaki	P6.11	Liu, Yen-Ting	P10.1	Marie-Astrid, Boutet	O3.11	Montufar, Edgar B	O3.3	Norris, Mark	O7.2	PELE, M	S1.1
Kweider, Nisreen	O3.2		P10.4	Markhoff, Jana	O4.1	Moon, Seonghwan	P3.6		P3.12	Penoni, Álvaro	P6.12
Lakany, Heba	O6.7	Li, Yu-Chi	P10.1	Marriott, Tim	O21.5		P3.8		P9.2		P6.2
Lamora, Audrey	P6.8	Loebel, Claudia	O20.3	Martine, Berreur	O3.11	Moreno, Juan Carlos	O11.1	Novak, Saša	O4.7	Pérez-Caballero, César	O14.3
Lamoureux, François	O1.1		O3.1	Martínez-Pérez, Marta	O4.3	Morgenstern, Adrielly	P6.2		O4.6	Pérez-Jorge, C	O10.1
Lane, Tony	O21.5	Logeart	O5.4	Martini, Lucia	O18.6	Morgenstern, Mario	S5.3	O'Brien, Fergal	O18.5	Pérez-Jorge, Concepción	O4.3
Langlois, Jean	O17.9	Avramoglou, Delphine			O9.6	Moriarty, Andrew	O16.4	Oda, Ryo	P7.9	Pérez-Jorge, Conchita	O10.7
LAPEYRERE, Aurelien	O10.2		O10.2	Martin, Ivan	O18.1		O16.5	Ode, Andrea	O17.6	Perez, Roman A	O8.9
Laugier, Pascal	O19.8		O5.5	Marusciac, Laura	P4.2		O7.9	ODRI, GUILLAUME-ANTHONY	S1.3	Pérez-Tanoira, Ramón	O10.1
Lauzon, Marc-Antoine	O3.10		P2.6	Masson, Bernard	O21.4		O13.1	OFLAZ, Hakan	P1.4		O4.3
Layrolle, Pierre	O10.5		O17.9	MASSOURIDES, Emmanuelle	O5.6		O7.10	Ogasawara, Kouetu	P10.5	Perka, Carsten	O17.6
	O8.7	López, Alejandro	O14.1	Mastrokalos, Dimitrios	O7.11	Moriarty, Fintan	O4.5	Ogawa, Emi	P3.3	Peroglio, Marianna	O3.5
	S1.3		O14.2	Mata, Alvaro	O3.5		S5.2	Okada, Yukimasa	P3.3	PERROT, Pierre	O15.3
	S2.3	López, Clara Isabel	O11.1	Matassi, Fabrizio	O4.10		P6.1	Olalde, Beatriz	P10.3	Persson, Cecilia	O14.1
Leblebicioglu, Gürsel	S3.4	López, Enrique	P1.9	Matsui, Toshihiro	P8.1	Morihara, Toru	P6.1	Oleksiewicz, Izabela	P7.6		O14.2
Lebouvier, Angélique	O5.8	Lopomo, Nicola	O8.2	Matsushita, Takashi	O7.4	Morin, Fabrice O	P10.3	Olga, Novikova	O14.10	Peters, Marloes	O19.9
Le Deley, Marie Cécile	P6.8	Lord, Janet	O17.4		P8.1	Mostafa, Ahmed	P7.9	Oliveira, Miguel	P8.9	Peter, Viju	P5.6
	O15.2		P3.14	Maurer-Ertl, Werner	O15.6	Mrázek, Frantisek	P5.3	Olivotto, Eleonora	O9.6	Petite, Hervé	O5.4
Lee, Bing-Heng	P10.6	Lorenzetti, Martina	O4.6	Mayahi, Reza	P5.7	Müller, Andreas	O9.1	Opsomer, Gert-Jan	O12.6		O17.9
	P10.7		O4.7	Mazda, Osam	P6.11	Müller, Carsten	P1.2	Oreffo, Richard	O3.7		O5.5
Lee, Hwanmo	P3.6	Louarn, Guy	O10.5	McCroly, John	P8.10	Müller, Peter E	P6.5	Ortolani, Alessandro	O8.2		O5.6
	P3.8	Lovati, Arianna Barbara	O1.2	McGarvey, Ciaran	O19.5	Mumme, Marcus	O18.1	Ory, Benjamin	O1.1		P2.6
Lee, Tzer-Min	P10.1	Lovering, Andrew	O16.2		P9.6	Murakami, Takashi	O15.5	Otero Tabares, Ernesto Carlos	P5.5	Philippe, Hulin	O3.4
	P10.4	Lozano, Daniel	O10.1	McLardy-Smith, Peter	P5.7	Murray, James	O16.2	Oudina, Karim	O5.4		
			O10.3								

PHIROSMANASHVILI, Nana	P6.4	Resch, Herbert	P2.4	Salou, Laëtitia	O10.5	Shah, Nasir	O7.7	Steinberg, Eli	P6.9	Timur, Ufuk Tan	O18.7
Picard, Quentin	O8.6	Reyes Rodriguez, José Emilio	P5.5	Sancineto, Carlos	P8.6	Sharma, Akash	P8.2	Steinmetz, Philipp	P6.7		O18.8
PICART, Catherine	O10.2	Rezaeian, Zahra Sadat	O9.2	Sankar, Sriram	O14.9	Sharma, Sunita	P2.8	Stemmer, Sebastian	O15.6	Tippayawat, Patcharaporn	O8.4
Pickford, Nicola	O13.7		P3.13	Sanpera, Ignasi	O14.3	Sheehan, Eoin	O13.1	Stoddart, Martin	O20.3	Tkaczyk, Cathy	O2.9
Pierre, Guihard	O3.11	Rhind, John-Henry	P8.3	Sapkota, Dipak	P2.8		O16.4	Streubesand, Nadine	O20.2		P6.6
Pierre, Layrolle	O3.11	Riaz, Waleed	O7.8	Sariali, Ehadi	O19.8		O16.5	Stroud, Nick	O6.3	Tohidnezhad, Mersedeh	O20.2
	O3.4	Richards, Geoff	O4.5	Sartori, Maria	O8.2		O7.10	Studler, Ueli	O18.1		O3.2
	O5.7		P6.5	Sasagawa, Keisuke	O1.6		O7.9	Stulberg, Bernard	O19.2	Tomankova, Tereza	P5.2
PIGNOT-PAINTRAND, Isabelle	O10.2		P6.7	Saseendar, S	O1.8	Shih, Cheng-Min	P6.3		O21.2		P5.3
Pillai, Anand	O12.1		P8.6	Sato, Taishi	O17.7	Shimano, Antônio	P6.12	Suarez, Fernando	P10.2	Tong, Jie	O21.6
	O13.6	Ricketts, James	O7.7		O17.8		P6.2	Suhaimi, Mohd Izzat	O11.10	Torres, Ricardo	O14.6
	O13.7	Rickman, Mark	O17.10	Satyam, Abhigyan	O12.4	Shi, Qin	O20.4	Sukenari, Tsuyoshi	P6.1	Tozzi, Gianluca	O21.6
	P3.15	Roberts, Danielle	P8.5	Sauerbier, Sebastian	O3.5	Siddiqi, Rehan	O19.6		P7.9	Trajanovic, Miroslav	P2.5
	P9.9	Robertson, Angus	O12.8	Sayed, Farhan	O12.1	Silva, Erika	O8.9	Suliman, Salwa	P7.5	Traweger, Andreas	P2.3
Pinar, Anna	P7.6	Robinson, Cal	O13.6	Scemama, Caroline	O10.4	Silver, Xeve	O19.1	Sun, Jui-Sheng	O3.6		P2.4
PINILLOS, Julio Cesar	O11.1	Robinson, James	O16.2	Schaefer, Dirk Johannes	O18.1		O19.3		P7.2	TRICHET, Valérie	O15.3
PINSET, Christian	O5.6	Rochet, Nathalie	O8.6	Schaller, Benoît	O2.9		P9.4	Sun, Yang	P2.8		O15.4
PIPERNO-NEUMANN, Sophie	O15.2	Rodaix, Camille	O17.9	Schilling, Christoph	O14.5	Silvestre, Antonio	P5.1		P7.5	Trickovic-Vukic, Dragana	P2.5
Pistevos, Konstantinos	O7.11	Rodríguez Calleja, Lidia	O1.1	Schlaubit, Silke	O16.3	Skadins, Ingus	O2.3	Sun, Yi-Chih	O9.5	Trieb, Klemens	O13.3
Pizá-Vallespir, Gabriel	O14.3	Rodríguez-Cano, Abraham	O4.2		O5.2		P7.1		O9.7		P1.5
Plaetevoet, Xavier	P7.4	Rojas, Keren Astrid	O11.1	Schmidutz, Florian	P6.5	Skalli, Wafa	O21.1	Surer, Nathalie	O14.7		P9.8
Plag, Camille	O12.3	Romanò, Carlo Luca	O1.2	Schmoelz, Werner	O2.6	SKIAK, Eiad	P8.8	Surmeneva, Maria	O10.6	Trinkaus, Katja	O4.6
Pohlemann, Tim	O2.5	Rondot, Capucine	O8.10	Schneider, Gregor	O4.4	Skinner, Edward	P8.5	Surmenev, Roman	O10.6	Tseng, Maggie	P9.9
POIRRIER, FLORENCE	O2.2	Rosenbaum, Dieter	P1.2	Schneiderova, Petra	P5.3	Slabbaert, Matti	O13.4	Suwanna, Pimsiree	O8.4	Tsuchiya, Masahiro	P3.11
Polakovic, Sandrine	O19.2	Rosenblatt, David	O20.1	Schnettler, Reinhard	O4.6		O13.8	Szulc, Pawel	O19.10		P7.7
Porteous, Andrew	O16.2	Rosenfeld, Yosef	O4.5	Schoon, Janosch	O17.6	Ślósarczyk, Anna	O2.7	Takaki, Motoyuki	O7.4	Tzoumaka-Bakoula, Chrisa	O7.11
Povoroznyuk, Vladyslav	O1.10	Rosset, Philippe	O15.4	Schroeder, Manuel	O7.5	Slowik, Alexander	O3.2	Takemura, Taro	P3.11	Ueshima, Keiichiro	P6.11
	O1.9		S1.4	Schrooten, Jan	O10.3	Smith, Christian	O19.5	Takenaka, Nobuyuki	O7.4	Ullmann, David	O13.3
PRESLE, Nathalie	O9.3	Roth, Alex	O6.10	Schulz, Arndt-Peter	O1.11		P3.12	Talbot, Julie	P6.8	Uminska-Wasiluk, Barbara	P7.6
Previdi, Sara	O1.2	Rouard, Hélène	O5.8		O7.5		P9.2	Talewadekar, Gautam	P9.12	Unnithan, Ashwin	P8.11
Price, AP	O18.11	Rousseau, Benoit	O16.3	Schulze, Frank	O17.6		P9.3		P9.14	UPEX, Peter	O5.6
Puértolas, Sergio	P1.9		O20.6	Schwamborn, Thomas	O18.1		P9.6	Tampieri, Anna	O8.2	Usui, Yuki	P7.8
Pufe, Thomas	O20.2	Rousselot, Morgane	P2.1	Schwarz, Edward	O20.5		P9.7	Tanabe, Yuji	O1.6	Uva, Marianna	O15.1
	O3.2	ROUVILLAIN, JEAN LOUIS	S1.1	Schwiesau, Jens	O14.5	Smit, Theo	O18.2	Tanaka, Sakae	P8.1	Uzel, Andre-Pierre	S1.2
Pullin, Rhys	P8.10	Rovner, Allen	P6.10	Schwyn, Ronald	O5.9	Smola, Hans	O2.1	Tanaka, Takaaki	P3.2	UZUN, Bora	P1.4
Purcell, Mariel	O1.6	Royo, Miriam	O3.5	Scott d'Abusco, Anna	O9.6	Smola, Sigrun	O2.1		P3.3		P1.6
Putzer, David	O2.6	Ruiz, Ivonne María	O11.1	Seekamp, Andreas	O20.2	Sokolova, Marina	O2.3	Tan, Hsi Ming Bryan	O1.8		P1.8
Rai, Am	P3.10	Rushton, Steven	O11.11	Seelbach, Ryan	O3.5		P7.1	Tanner, Elizabeth	O1.6	Vadalà, Gianluca	O18.10
	P3.9	Russo, Alessandro	O8.2	Seet, Suphasinee	O8.4	Solitro, Giovanni F	O9.4	Tan, Si Heng, Sharon	O1.8		O18.9
Rakow, Anastasia	O17.6	Russo, Fabrizio	O18.10	Seguin, Chantal	O20.1	Somjen, Dalia	P3.1	Tanter, Mickael	O21.1	Valderrabano, Victor	O9.1
Ralte, Peter	O7.7		O18.9	Sekiguchi, Takuya	P3.11		P6.9	TAYLAN, Orcun	P1.7	Valerie, Trichet	O3.4
Ramesh, Ashwanth	O18.5	Rutherford-Davies, Jill	P5.8	Sellal, Olivier	O14.7	Sommerfeld, Sven D	O4.9		P1.8		O5.7
Rang, S	P9.13		P8.4	Selvaratnam, Veenesh	O11.4	Sonofuchi, Kazuaki	P10.5	Tempfer, Herbert	P2.3	Valero, Jesus	P10.3
Rashid, Mustafa	P8.10	Sagartzazu Aizpurua, Maialen	P10.3		O11.5		P3.11		P2.4	Vallet, Quentin	O19.8
Rawlinson, Simon Charles	O3.8	Saijo, Yoshifumi	P7.7		O7.7		P7.7	Temprom, Likit	O8.4	Vallet-Regi, Maria	O10.7
Fielding		SAILHAN, Frederic	O10.2	Senden, Rachel	O21.3		O7.8	ten Broeke, René	O19.9	Vander Sloten, Jos	O6.1
	O3.9	Sait, Mohammed	P9.1		O6.11	Sonsale, Paresh		Tezcaner, Aysen	P3.4		O6.5
Rédini, Françoise	O15.2	Saito, Masazumi	P6.11		O6.6	Sornay-Rendu, Elisabeth	O19.10	Thakrar, Raj R	O21.7	Vander Sloten, Tom	O6.1
	P6.8	Saito, Naoto	P7.8		O6.8	Sowa, Gwendolyn A	O18.9		P8.2	van der Stok, Johan	O10.3
Redl, Heinz	P2.4	Salai, Moshe	O1.4		P1.2	Spanoudes, Kyriakos	O12.4	Theobald, Peter	P8.7	Van Der Straeten, Catherine	O12.6
Reinis, Aigars	O2.3		P6.9	Setti, Stefania	O18.6	Sprecher, Christoph M	P6.7	Thompson, Jonathan	O17.2		O13.4
	P7.1	Saleh-Mghir, Azzam	P7.3	Shafizadegan, Fatemeh	O9.2		P6.5	Thompson, Mark	O12.5		O13.8
Remy, Murielle	O20.6	Salma, Ilze	O2.3	Shafizadegan, Zohreh	O9.2	Stadelmann, Vincent	O5.9	Thoreson, Andrew	P1.1	van der Veen, Albert	O6.10
Renard, Martine	O16.3		P7.1		P3.13	Stathopoulos, Constantinos	O17.5	Tillu, Abhay	O21.7	Van der Windt, Anna	O18.8
Renaud, Audrey	O8.7					Stefanou, Maria	O7.11				

Vanheule, Valentine	O6.5	Wang, Hom-Lay	P10.2	Yamada, Misako	P7.8
Van Hoof, Tom	O12.6	Wang, Shun-Ping	P6.3	Yamasaki, Tetsuro	P6.1
Van Onsem, Stefaan	O13.4		O1.5		P7.9
	O13.8	Wang, Tracy	O20.1	Yanagihara, Gabriela	P6.12
van Rhijn, Lodewijk	O6.10	Warmont, Fabienne	O8.6		P6.2
van Rietbergen, Bert	O19.10	Watanabe, Yoshinobu	O7.4	Yang, Huilin	O20.4
	O2.8	Waters, Heather	O17.8	Yang, Jaeho	P3.8
	O8.3	Weinans, Harrie	O10.3	Yao, Zhenyu	O17.7
Van Tongel, Alexander	O9.1		O18.7		O17.8
Vaquette, Cedryck	O12.2		O18.8	Yaprakci, Volkan	P3.4
Varoga, Daike	O3.2	Wendlandt, Robert	O1.11	Yeh, Shu-Yun	P10.6
Vassena, Christian	O1.2		O7.5		P10.7
Vaughan, Alexander	O7.1	Whitehouse, Michael	O11.9	Yue, James J	O14.5
	P8.9		O7.6	YUKSEL, Mithat	P3.5
Velu, Vimal	P5.9	Widnall, James	O11.8	Zaczynska, Ewa	P7.6
Vera, Carolina	P10.3	Wierds, Roel	O19.9	Zadpoor, Amir A	O10.3
Verborgt, Olivier	P1.1	Wilde, Erik	O1.11	Zadzilka, Jayson	O21.2
Vergari, Claudio	O21.1		O7.5	Zahn, Helmut	P9.15
Vergroesen, Pieter-Paul	O18.2	Willemot, Laurent	P1.1	Zal, Franck	P2.1
Verhaar, Jan AN	O10.3	Willems, Davy	O19.7	Zaoui, Amine	O17.9
Verlaan, Loek	O6.6	Willems, Paul	O6.10	Zderic, Ivan	O5.9
Veronesi, Francesca	O18.6	Willett, Kieth	O12.5		P6.7
	O9.6	Williams, Richard	O17.4		P8.6
Verrecchia, Franck	P6.8		O8.1	Zehra, Nayyab	O16.6
Verron, Elise	P7.4	Williams, Sophie	O17.2	Zeugolis, Dimitrios	O12.4
Verstraete, Matthias	O12.6	Windolf, Markus	O5.9		O5.3
	O6.2		P6.7	Zhamilov, Vadiym	P1.3
Viana, Marylène	O16.3		P8.6	Zhang, Qing-Hang	O21.6
Viateau, Véronique	O5.4	Winzenrieth, R	O1.10	Zhang, Wen	O20.4
	O12.2	Wirix-Speetjens, Roel	O6.5	Zhao, Huan	O20.4
Victor, Jan	O12.6	Wise, Roger	O8.5	Ziane, Sophia	O20.6
	O13.4	Wistrand, Anne-Finne	P7.5	Zini, Nicoletta	O12.7
	O13.8	Withers, Daniel	O11.2	Zivanov-Curlis, Jelena	P2.5
	O6.2	Wittmann, Catherine	O8.10	Zivkovic, Jelena	P2.5
	O6.5	Wixmerten, Anke	O18.1	Zukowski, Daniel	O2.10
Vigneron, Lara	O19.7	Wolinski, Heimo	P2.3		O4.4
Vinayakam, Parthiban	P8.3	Wong, Fabian	P3.12	Zywicka, Boguslawa	P7.6
	P9.11		P9.2		
	P9.13		P9.3		
Visser, Jenny	O18.8		P9.7		
Volpon, José	P6.2	Wruck, Christoph-Jan	O18.7		
Vo, Nam	O18.9		O20.2		
Vrbka, Martin	P5.10		O3.2		
Wagner, Andrea	P2.3	Wurm, Alexander	O2.6		
	P2.4	Wu, Xiao-Tao	O18.4		
	P8.6	Wu, Xujun	P7.5		
Wahl, Dieter	O13.7	Wyn-Jones, Simon	P3.14		
Wainwright, Tom	O1.11	Xie, Xin-Hui	O18.4		
Waizner, Klaus	P7.6	Xing, Zhe	P7.5		
Walak, Agnieszka	P7.6	Xue, Ying	P2.8		
Walak, Piotr	O11.3		P7.5		
Walker, Roland	O1.7	Yabe, Yutaka	P3.11		
Wang, Feng-Sheng	O9.5		P7.7		
	O9.7	Yamada, Kei	P7.9		

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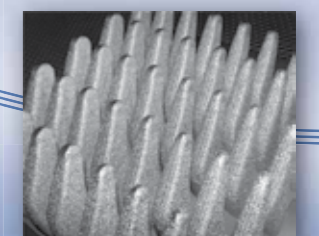
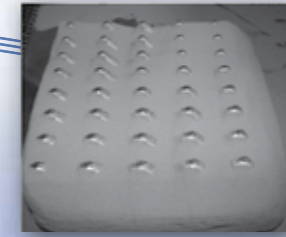


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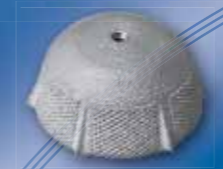
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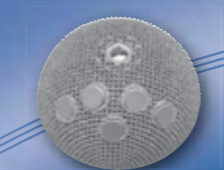
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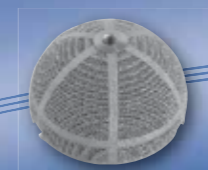
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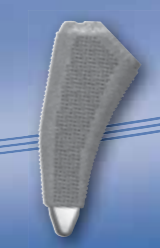
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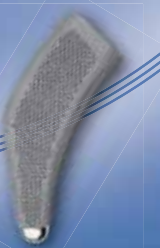
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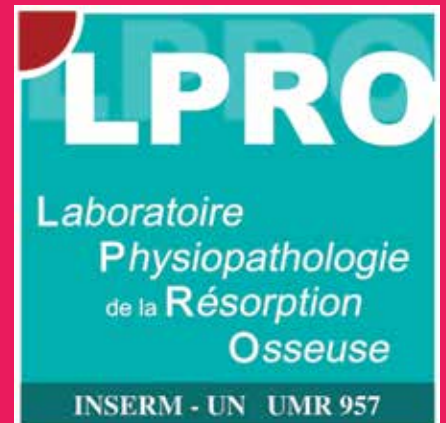


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