ISOLS International Society Of Limb Salvage

Under the auspices of

HELLENIC REPUBLIC
National and Kapodistrian University of Athens

HELLENIC ASSOCIATION OF ORTHOPAEDIC SURGERY AND TRAUMATOLOGY

www.isols2019.gr

Athens Greece

ISOLS 2019

20th General Meeting of International Society of Limb Salvage

September 11-14, 2019

Final Programme

Download The Official **ISOLS 2019** Mobile App

Installation Instructions

ANDROID DEVICES

Option 1:
Use your device to scan the following QR CODE →

Option 2:
Search for The Event App by EventsAIR on Play Store

When you are prompted for a code upon launching the App, insert **isols2019**

iOS DEVICES

Option 1:
Use your device to scan the following QR CODE →

Option 2:
Search for The Event App by EventsAIR on App Store

When you are prompted for a code upon launching the App, insert **isols2019**

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Welcome Address

Dear Colleagues,

It is with great pleasure that I welcome you to the **20th General Meeting of the International Society of Limb Salvage**, hosted in **Athens, Greece on September 11th-14th, 2019**.

During the Meeting, you will be given the opportunity to attend state-of-the-art presentations given by leading experts of the field and to participate in informative discussions covering the entire spectrum of limb salvage. Plenary lectures, crossfire sessions, symposia, round-table discussions and debates will focus on the most current and controversial topics of musculoskeletal tumors. In addition, platform and flash sessions will offer a unique opportunity to discuss your work with faculty and Meeting participants. The ultimate goal of the Meeting is to enhance your knowledge with up-to-date information and address important issues that will assist you on your everyday management of patients with musculoskeletal tumors.

We welcome you to the exciting and cultural city of Athens for an event that promises to offer a valuable scientific exchange. Your participation and input will add immensely to the goals of this international Meeting.

With warm regards,

Panayiotis J. Papagelopoulos MD, DSc, FACS

President of ISOLS 2019 Meeting
Professor & Chairman, First Department of Orthopedic Surgery,
Athens University Medical School & ATTIKON University General Hospital
Athens, Greece

Committees

Executive Board (2017-2019)

President:	Hiroyuki Tsuchiya (Japan)
Immediate Past President:	Mark Scarborough (United States)
President Elect:	Panayiotis J. Papagelopoulos (Greece)
Secretary:	Francis John Hornicek (United States)
Treasurer:	Philipp Funovics (Austria)
Membership Chair:	Pietro Ruggieri (Italy)
Board Members:	Douglas G. Letson (United States), Reinhard Windhager (Austria), Georg Gosheger (Germany), Xiaohui Niu (China), Toshifumi Ozaki (Japan), Peter Scheinemann (Germany), Han-Soo Kim (Korea)

ISOLS 2019 Honorary Presidents (in alphabetical order)

Edmund Chao (USA)

Rainer I. Kotz (Austria)

Franklin H. Sim (USA)

ISOLS 2019 Programme Committee (in alphabetical order)

Vivek Ajit Singh (Malaysia)
Luis Aponte-Tinao (Argentina)
Apichat Asavamongkolkul (Thailand)
Miguel Ayerza (Argentina)
Joseph Benevenia (USA)
Örjan Berlin (Sweden)
Eduardo Botello (Brazil)
Domenico Andrea Campanacci (Italy)
Rodolfo Capanna (Italy)
Peter F.M. Choong (Australia)
Carlos Cuervo (Mexico)
Ian Dickinson (Australia)
Sander Dijkstra (The Netherlands)
Davide Donati (Italy)
Nicola Fabbri (USA)
Philipp Funovics (Austria)
Ashish Kumar Gulia (India)
Wei Guo (China)
John H. Healey (USA)
Francis Hornicek (USA)
Lee M. Jeys (UK)
Akira Kawai (Japan)
Vasileios Kontogeorgakos (Greece)
Theodoros Kormas (Greece)
Andreas Mavrogenis (Greece)
Saminathan Suresh Nathan (Singapore)
Xiaohui Niu (China)
Toshifumi Ozaki (Japan)
Harzem Özger (Turkey)
Panayiotis J. Papagelopoulos (Greece)
Ioannis Papanastasiou (Greece)
Kyriakos Papavasiliou (Greece)
Ajay Puri (India)
Robert Randall (USA)
Jesus-Garcia Reynaldo (Brazil)
Pietro Ruggieri (Italy)
Dundar Sabah (Turkey)
Vassilios Sakellariou (Greece)
Olga Savvidou (Greece)
Mark Scarborough (USA)
Nikolaos Stavropoulos (Greece)
Peter Steadman (Australia)
Amir Sternheim (Israel)
Martin Thaler (Austria)
Hiroyuki Tsuchiya (Japan)
Robert R. Turcotte (Canada)
Reinhard Windhager (Austria)
Jay S. Wunder (Canada)
Christos Zambakides (Greece)

Faculty

A

Abudu Adesegun (United Kingdom)
Ajit Singh Vivek (Malaysia)
Andreou Dimosthenis (Germany)
Angelini Andrea (Italy)
Aponte-Tinao Luis (Argentina)
Asavamongkolkul Apichat (Thailand)
Aston William (United Kingdom)

B

Beltrami Giovanni (Italy)
Benevenia Joseph (United States)
Bergovec Marko (Austria)
Berlin Örjan (Sweden)
Berrey B. Hudson (United States)
Bird Justin (United States)
Bonilla Huertas Patricia (Panama)
Botello Eduardo (Chile)
Branemark Rickard (Sweden)
Brigman Brian (United States)
Brountzos Elias (Greece)
Buscharino Bruna (Brazil)

C

Campanacci Domenico Andrea (Italy)
Capanna Rodolfo (Italy)
Casanova Jose (Portugal)
Chatziioannou Achilleas (Greece)
Chatziioannou Sofia (Greece)
Choong Peter (Australia)
Cuervo Lozano Carlos E. (Mexico)

D

Di Bella Claudia (Australia)
Dickey Ian (United States)
Dickinson Ian (Australia)
Donati Davide Maria (Italy)

E

Ebeid Walid (Egypt)
Erickson Bradley (United States)
Errani Costantino (Italy)
Exner G. Ulrich (Switzerland)

F

Fabbri Nicola (United States)
Forsyth Ramses (Belgium)
Funovics Philipp Theodor (Austria)

G

Galanis Evanthia (United States)
Gulia Ashish (India)
Guo Wei (China)

H

Hardes Jendrik (Germany)
Hayashi Katsuhiro (Japan)
Healey John (United States)
Hobusch Gerhard (Austria)
Hornicek Francis (United States)
Hosking Keith (South Africa)
Houdek Matthew (United States)

I

Ihara Koichiro (Japan)
Imai Reiko (Japan)
Inwards Carrie (United States)

J

Jesse Mary (United States)
Jesus Garcia Reynaldo (Brazil)
Jeys Lee M. (United Kingdom)
Johnson Luke (Australia)
Joo Min Wook (South Korea)

K

Kawai Akira (Japan)
Kawano Hirotaka (Japan)
Kelekis Alexis (Greece)
Kim Han-Soo (South Korea)
Kontogeorgakos Vasileios (Greece)
Kotrych Daniel (Poland)
Kotz Rainer I. (Austria)
Kulidjian Anna (United States)
Kunisada Toshiyuki (Japan)

L

Lam Ying-Lee Albert (Hong Kong)
Lee Francis (United States)
Leithner Andreas (Austria)
Leopold Seth (United States)
Letson George Douglas (United States)
Lewis Valerae (United States)
Lin Patrick (United States)
Linares Francisco (Colombia)
Lindeque Bennie Gerhard Petris (United States)
Lozano-Calderon Santiago (United States)
Luzzati Alessandro (Italy)

M

Mak Ka Lok (Hong Kong)
Malizos Konstantinos (Greece)
Mavrogenis Andreas (Greece)
Moura Marcio (Brazil)

N

Nakayama Robert (Japan)
Nanopoulos Dimitri V. (Greece)
Nathan Saminathan Suresh (Singapore)
Nishida Ju (Japan)
Nishida Yoshihiro (Japan)
Niu Xiaohui (China)
Nystrom Lukas (United States)

O

O'Connor Mary (United States)
Ozaki Toshifumi (Japan)
Özger Harzem (Turkey)

P

Papagelopoulos Panayiotis J. (Greece)
Pazionis Theresa Julia Christina (United States)
Powell Gerard (Australia)
Prince Daniel (United States)
Puri Ajay (India)

R

Randall Robert (United States)
Robinson Steven (United States)
Rose Peter (United States)
Ruggieri Pietro (Italy)

S

Sabah Dundar (Turkey)
Sakellariou Vasilios (Greece)
Savvidou Olga (Greece)
Scarborough Mark (United States)
Shirai Toshiharu (Japan)
Sim Franklin (United States)
Siontis Brittany (United States)
Sirichativapee Winai (Thailand)
Stavrianos Spyros (Greece)
Steadman Peter (Australia)
Sternheim Amir (Israel)
Streitburger Arne (Germany)
Szafranski Andrzej (Poland)

T

Takeuchi Akihiko (Japan)
Thaler Martin (Austria)
Trovarelli Giulia (Italy)
Tsuchiya Hiroyuki (Japan)
Turcotte Robert R. (Canada)

U

Uchida Atsumasa (Japan)

V

Vélez Roberto (Spain)
Vlastou Ekaterini (Greece)
Vyrva Oleg (Ukraine)

W

Wenger Doris (United States)
Wong Kwok-chuen (China)
Wunder Jay S. (Canada)

Y

Yamamoto Norio (Japan)
Yazawa Yasuo (Japan)
Yildiz Huseyin Yusuf (Turkey)
Yonamine Eduardo Sabao (Brazil)

Z

Zambakides Christos (Greece)

General Information

MEETING VENUE

MEGARON ATHENS INTERNATIONAL CONFERENCE CENTRE (MAICC)
Vass. Sofias & Kokkali, 115 21 Athens, Greece
Call Center: +30 210 7282000,
Fax: +30 210 7290174 | Website: www.maicc.gr

MEETING ORGANISING BUREAU

ERASMUS CONFERENCES & EVENTS S.A.
6, Drosini str., 166 73 Voula-Athens, Greece
Call Center: +30 210 7414700,
Fax: +30 210 7257532
E-mail: info@erasmus.gr,
Website: www.erasmus.gr

REGISTRATION DESK

The Registration Desk is located at the N. Skalkotas level (-1) of the Megaron Athens International Conference Centre and will be in operation the following dates and hours:

Tuesday, Sep 10th, 2019	15:00-19:00
Wednesday, Sep 11th, 2019	07:00-20:00
Thursday, Sep 12th, 2019	07:00-20:00
Friday, Sep 13th, 2019	07:30-18:30
Saturday, Sep 14th, 2019	07:30-16:00

ONSITE REGISTRATION FEES

REGISTRATION TYPE	ONSITE FEE
ISOLS/HAOST Member	900,00 €
Non-Member	1.100,00 €
Resident/AHP	500,00 €
Industry (Not Exhibiting)	1.500,00 €
ISOLS Young Surgeons Training Workshop on Limb Salvage Surgery (Saturday, September 14)	100,00 €

THE REGISTRATION FEES INCLUDE

- Admission to the Meeting Sessions and the Exhibition
- Delegate material (meeting bag, Programme booklet, abstracts in USB key)
- Certificate of Attendance
- Coffee and Lunch Box during breaks, as announced in the Meeting Programme
- Welcome Reception on September 11th, 2019

BADGES

The name badge issued to delegates upon their check-in at the Registration Desk serves as an admission pass to all scientific sessions and to the exhibition. Delegates are kindly requested to make sure that they wear their name badges at all times.

Badges categories:

Faculty members **RED** | Delegates **WHITE** | Exhibitors **GREEN**

EXHIBITION

The exhibition is located in N. Skalkotas Level and will be operating according to the following schedule:

Wednesday, Sep 11th, 2019	08:00-20:30
Thursday, Sep 12th, 2019	08:00-20:00
Friday, Sep 13th, 2019	08:00-19:00
Saturday, Sep 14th, 2019	08:30-16:00

INSURANCE

Neither the Organising Committee nor the Meeting Organising Bureau accept any liability for damages and/or losses of any kind which may be incurred by the Meeting participants or by any persons accompanying them, both during and outside the Meeting Programme and activities. Participation in all tours and events is at one's own risk. Participants are advised to take out insurance against loss, accidents or damage that could be incurred during the Meeting. Verbal agreements will not be binding unless they are confirmed in writing. Sole place of jurisdiction is Athens. Greek law is applicable.

CAR PARKING

There is an underground passenger car park available providing parking lot for 750 cars. It is open daily from 06:00 a.m. until 02:00 a.m.. Entrance via Kokkali Street. The special Meeting rate is €12 per day for multiple entries per day, prepaid upon entry. Standard parking rate is €3 for the first 3 hours and €1 per hour thereafter. There is no parking available for large vans/ trucks/lorries.

CASH MACHINE

The nearest ATM machine is located inside the Megaron Athens International Conference Centre, at the main entrance of the building.

CREDIT CARDS

Commonly accepted credit cards in hotels, restaurants and stores are Visa, MasterCard & Maestro.

FIRST AID

First aid with a fully qualified nurse is available. It is located on Muses Foyer level, towards Kokkali street and operates on the actual days of the event including building-up and dismantling days.

INTERNET FACILITIES

Free WiFi internet connection will be available in the venue via the ISOLS network.

DISABLED ACCESS

There is easy access to and within the Megaron for guests with impaired mobility and the halls have specially designated areas for wheelchairs. Megaron was the recipient of a Helios Award (public buildings category) from the European Commission in recognition of its provision for the disabled.

LOST PROPERTY

Enquiries regarding items lost or found can be made at the Registration Desk.

LUNCHES AND REFRESHMENTS

Coffee/tea and lunch box will be served in the exhibition area.

General Information

MOBILE TELEPHONES

Out of courtesy to speakers and other delegates, please switch mobile phones to silent mode when entering the Meeting Halls.

SECURITY

Any security problems or concerns should be reported to a uniformed member of staff.

SMOKING AREAS

There are designated smoking areas in the Atrium of the Muses and outside the building at the Vas. Sofias street entrances.

VENUE LOCATION & TRANSPORT

MAICC is situated right in the heart of Athens and is easily accessible by metro, bus and trolley bus. It is also located at a walking distance from major and smaller hotels. Commuting to and from the city centre and the Athens International Airport or other locations is quite easy: 30 min. from the Athens international Airport, 3-5 min. from the city centre.

For more information about MAICC, please visit: ➜ **www.maicc.gr**

By Metro

There is direct access from the airport and the city centre to MAICC from the metro station "Megaron Moussikis" on metro line 3 (blue line).

Please visit the Athens Metro website for detailed information at: ➜ **www.ametro.gr**

By Bus

The following buses, express buses and trolley buses pass and stop near the MAICC:

- Buses: **450, 550, 601, 603**
- Express Buses: **X95** (direct airport line), **A5, E6, E7, X14**
- Cable "Trolley" Buses: **3, 7, 8, 13**

For more information about the public transportation network in Athens please visit: ➜ **www.oasa.gr**

From the airport

Athens International Airport "Eleftherios Venizelos" is located in Spata, 33 km southeast of Athens and serves all international and domestic flights. The airport is easily accessible from MAICC and the city centre via motorway, express bus or metro. An average journey by taxi from the airport to the city centre should take approximately 40-50 minutes, depending on traffic. The express bus line X95 (direction Syntagma) serves Athens city centre. A ticket for the airport express line costs €6. It allows unlimited travel by all public transport means (incl. bus and metro) for 24 hours from the time of validation. The metro line 3 runs every 30 minutes from the airport and the trip to the city centre takes approximately 30 minutes and costs €10.

For more information about the Athens International Airport please visit: ➜ **www.aia.gr**

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Networking Events

Opening Ceremony & Welcome Reception

Wednesday, September 11th, 2019
19:30

The **Opening Ceremony of the ISOLS 2019 Meeting** will take place in Banquet Hall of the Meeting venue.

A Welcome Reception (standing Cocktail) will follow at the foyer.

Free for Registered participants
Dress code: Smart casual

ISOLS Dinner

Friday, September 13th, 2019
ISLAND – Residence in Varkiza area

Join our special social event and have a great time with colleagues and friends in a unique Greek setting at the "Island Residence" located at the Athens Riviera. A magnificent Mediterranean architecture residence with garden full of ancient olive trees and tamarisks right up to the edge of the sea with a splendid view at the Saronic Golf. Guests will have the opportunity to enjoy a fine dinner and a unique live performance.
Admission only by ticket, to be purchased at the Hospitality Desk; no tickets will be available on the spot.

Tickets can be purchased onsite till September 12 at 18:00 hrs.
Ticket cost: 120,00 € per person
Transportation by shuttle buses will be provided.

Pick-up at 19:00 from the MAICC (Meeting Venue).

NOTE: *Attendance by invitation only. Participants that have already booked the ISOLS Dinner are kindly requested to collect their invitations from the Secretariat Desk the latest by September 12th.*

Scientific Information

INSTRUCTIONS FOR MODERATORS, LECTURERS, SPEAKERS AND PRESENTERS

1. Moderators, Speakers, Introductory Lecturers, Platform and Flash Sessions Presenters are requested to be in the session room at least 15 minutes before the session starts. Although the detailed time slot is allocated to all presenters, please note it may slightly change for unpredictable reasons.
2. Sessions should proceed under Moderator's instruction smoothly.
3. Platfrom Sessions will start with Introductory Lecture first followed by Oral Presentations and in the end discussion will be conducted. Please note there are some sessions proceeded without discussion.
4. Lecturers, Oral and Flash Presenters are requested to respect the allocated presentation time as follows.
   - Introductory Lecture: **12 minutes**
   - Oral Presentations: **6 minutes**
   - Flash Presentations: **3 minutes**

   A countdown timer will be appearing in the podium screen to assist in observing the allotted time.
5. There are 2 podiums on both right and left side on the stage and next Presenter should stand by at the opposite side podium during the previous presentation.

SPEAKERS' PREVIEW ROOM

The Speaker Preview facilities are located in a special designated area at the N. Skalkotas level (-1). All speakers, lecturers and presenters should report there at their earliest convenience and no later than two hours before their presentation time, even if they are not using any audiovisual material. The Speaker Preview facilities will be operating according to the following schedule:

Wednesday, Sep 11th, 2019	07:00-20:00
Thursday, Sep 12th, 2019	07:00-20:00
Friday, Sep 13th, 2019	07:00-19:00
Saturday, Sep 14th, 2019	07:00-16:00

ABSTRACTS

A USB stick containing all abstracts will be available in all delegate's bags.

ACCREDITATION

The **20th General Meeting of the International Society of Limb Salvage** (Athens, Greece, September 11-14, 2019) has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with **32 European CME credits (ECMEC®s)**. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity. Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 CreditsTM. Information on the process to convert EACCME® credit to AMA credit can

be found at ➜ **www.ama-assn.org/education/earn-credit-participation-international-activities**. Live educational activities, occurring outside of Canada, recognised by the UEMS-EACCME® for ECMEC®s are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Programme of the Royal College of Physicians and Surgeons of Canada.

ELECTRONIC POSTERS (E-POSTERS)

All posters will be on display for the entire Meeting and will be available for viewing during programme hours. The posters will be viewed on computers within a dedicated Poster Viewing Zone at the foyer of the Banquet Hall (level -2). E-posters are presented in two ways: on a large number of computers where every participant can search and view any poster, anytime during the Meeting, and also on large 55-inch, high-definition monitors, with time-tabled schedule. A technician will be available in the Poster area to help with any electronic poster queries. A list of all posters can be found on pages 88-132.

INSTRUCTIONS FOR BROWSING ELECTRONIC POSTERS AFTER THE MEETING

Following the increasing trend for making scientific information available to the entire scientific community, the e-posters will be published online for one year, subject to the permission of their authors, at the following address: ➜ **https://epostersonline.com/isols2019**
All information, including the full text, as well as the full resolution PDF file of each poster, will be searchable by poster title, author, institution, keywords or free text.

QUESTIONS TO SPEAKERS

Wireless microphones will be at your disposal during the discussion period in all sessions. Delegates wishing to participate in the discussion periods should raise their hand and wait to be acknowledged by the chairperson.

CERTIFICATE OF ATTENDANCE

An official Certificate of Attendance will be sent via email to all registered participants following the completion of the meeting evaluation form.

LANGUAGE

The official language of the Meeting is English. No simultaneous interpretation will be provided.

BEST PAPER AWARDS

All oral, flash and poster presentations will be reviewed and evaluated by the Awards Review Committee. The best three (3) papers of each presentation category will be awarded. The names of the winners will be announced during the Closing Ceremony on Saturday, September 14, at 16:30 (Banquet Hall).

Participate in the 2019 ISOLS proceedings in CORR®

Clinical Orthopaedics and Related Research® is the official journal of the International Society of Limb Salvage, and CORR® is proud once again to work with ISOLS members to disseminate the best work from the 2019 ISOLS meeting to the widest-possible international audience.

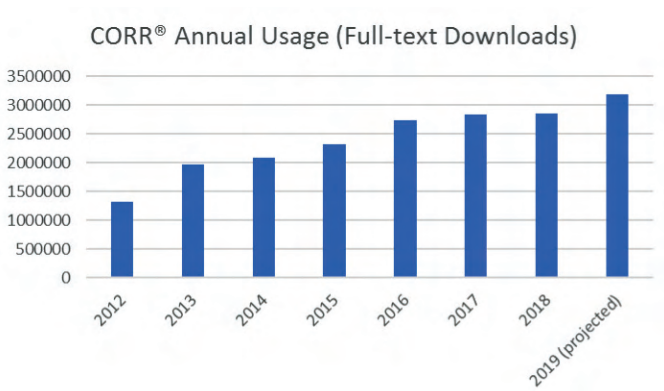
CORR has continued to develop its author and reviewer tools (all of which are available from our homepage at ➜ **www.clinorthop.org**) to make writing and reviewing for CORR easier than ever. We have a downloadable **"Quick Start Guide for CORR Authors"** available at that site; articles using these tools spend less time in peer review and editing, and reach readers even faster. Typical time from submission to electronic publication is about 4 months.

Publishing in CORR ensures that your work will have genuine global reach; this year, we expect to exceed 3.1 million full-text downloads (see figure, below), with the majority of that usage coming from outside the United States. If your work is selected for publication in CORR, it will be seen.

CORR charges no fees for manuscript submission or review, no charges for figures, and no charges to publish unless you wish to publish Open Access (full details about Open Access publication are available at ➜ **www.clinorthop.org**).

Deadline for manuscript submission is November 1, 2019. The link for manuscript submission is ➜ **www.editorialmanager.com/corr.** Be sure to choose **"Symposium/Proceedings/ Workshop"** for your article type, and then **"Selected Proceedings of the 2019 International Society of Limb Salvage Meeting"** when you upload your manuscript for consideration.

Finally, we hope you also will contribute in the ISOLS proceedings by serving as a peer reviewer. If you are not a registered reviewer for your official journal, feel free to contact the editor-in-chief, Seth S Leopold MD, at ➜ **sleopold@clinorthop.org.**



ISOLS 2019

ISOLS International Society Of Limb Salvage

Scientific Programme

Programme Overview

WEDNESDAY | SEPTEMBER 11TH, 2019

TIME	Hall BANQUET	Hall N. SKALKOTAS
08:00-09:00	**Flash Session 1** Allograft - Vascularized bone graft / Navigation and robotics	**Flash Session 2** Basic research - Translational research / Spinal and sacral tumors
09:00-10:00	**Symposium 1** Osseointegration - Bridging the gap between Limb Salvage and Amputation	
10:00-10:30	Coffee Break / e-Posters viewing	
10:30-11:30	**Platform Session 1** Allograft - Vascularized bone graft	**Platform Session 2** Basic research / Translational research
11:30-12:30	**Platform Session 3** Benign and low grade tumors	**Platform Session 4** Bone sarcomas 1
12:30-13:00	**Presidential Lecture 1**	
13:00-14:00	Lunch Break	
14:00-15:00	**Flash Session 3** Benign tumors	**Flash Session 4** Bone sarcomas - Clinical trials - Immunotherapy
15:00-16:00	**Platform Session 5** Clinical trial – Chemotherapy – Immunotherapy | Radiotherapy - IVR	**Platform Session 6** Complications in tumor surgery 1
16:00-16:30	Coffee Break / e-Posters viewing	
16:30-17:30	**Flash Session 5** Joint-sparing surgery / Limb salvage in children	**Flash Session 6** Diagnostic imaging / Metastasis 1 / Cancer and pain
17:30-18:30	**Platform Session 7** Prosthetic reconstruction 1	**Platform Session 8** Functional results and quality of life 1
18:30-19:30	**Round Table 1** Limb salvages in children	
19:30-20:30	**Opening Ceremony**	
20:30	**Welcome Reception**	

Programme Overview

THURSDAY | SEPTEMBER 12TH, 2019

TIME	Hall BANQUET	Hall N. SKALKOTAS	Hall MC2	Hall MC3.2
08:00-09:00	**Flash Session 7** Complications in tumor surgery / Functional results and quality of life	**Flash Session 8** Molecular-targeted therapy / Various		
09:00-10:00	**Crossfire Session 1** Primary prosthetic reconstruction: Coated vs Non-Coated endoprosthesis			
10:00-10:30	Coffee Break / e-Posters viewing			
10:30-11:30	**Platform Session 9** Benign tumors	**Platform Session 10** Bone sarcomas 2		(10:30-13:30)
11:30-12:30	**Platform Session 11** Complications in tumor surgery 2	**Platform Session 12** Functional results and quality of life 2 & Amputation and rehabilitation		ISOLS BOARD MEETING
12:45-13:15	**Luncheon Seminar** (Industry Sponsored)			
13:30-14:00	**Presidential Lecture 2**			
14:00-14:30	**Lecture 1**			
14:30-15:30	**Platform Session 13** Innovative treatments	**Platform Session 14** Joint-sparing surgery	**Platform Session 15** Pelvic tumors 1	
15:30-16:30	ISOLS GENERAL ASSEMBLY			
16:30-17:00	Coffee Break / e-Posters viewing			
17:00-18:00	**Platform Session 16** Limb salvage in children	**Platform Session 17** Metastasis 1	**Platform Session 18** Various	
18:00-19:00	**Crossfire Session 2** Cemented vs Uncemented Megaprosthesis			

Programme Overview

FRIDAY | SEPTEMBER 13TH, 2019

TIME	Hall BANQUET	Hall N. SKALKOTAS
08:00-09:00	**Flash Session 9** Disasters in limb salvage / Pelvic tumors	**Flash Session 10** Prosthetic reconstruction 1
09:00-10:00	**Crossfire Session 3** Spinopelvic Tumors: Limb Salvage vs Amputation	
10:00-10:30	Coffee Break / e-Posters viewing	
10:30-11:30	**Platform Session 19** Metastasis 2	**Platform Session 20** Pelvic tumors 2
11:30-12:30	**Platform Session 21** Soft-tissue sarcomas 1	**Platform Session 22** Diagnostic imaging
12:45-13:45	**Luncheon Symposium** (Industry Sponsored)	
14:00-15:00	**Platform Session 23** Recycled bone graft / Local tumor ablation	**Platform Session 24** Microsurgical reconstruction
15:00-16:00	**Flash Session 11** Innovative treatments / Pathology	**Flash Session 12** Recycled bone graft - Local tumor ablation / Soft-tissue reconstruction / Surgical margin - CTx evaluation
16:00-16:30	Coffee Break / e-Posters viewing	
16:30-17:30	**Crossfire Session 4** Low Grade CS: Curettage or Wide resection?	
17:30-18:30	**Special Session 1** ISOLS & I	
18:30-18:45	**Special Session 2** ISOLS FELLOWS	
	ISOLS Dinner at Island Residence *Pick up from MAICC at 19:00*	

Programme Overview

SATURDAY | SEPTEMBER 14TH, 2019

TIME	Hall BANQUET	Hall N. SKALKOTAS	Hall MC2
08:00-09:00	**Flash Session 13** Amputation and rehabilitation / Prosthetic reconstruction 2	**Flash Session 14** Soft-tissue sarcomas	
09:00-10:00	**Crossfire Session 5** Diaphyseal resections: Endoprosthessis or Allograft?		ISOLS YOUNG SURGEONS TRAINING WORKSHOP ON LIMB SALVAGE SURGERY
10:00-11:00	**Platform Session 25** Prosthetic reconstruction 2	**Platform Session 26** Soft-tissue sarcomas 2	
11:00-11:30	Coffee Break		
11:30-12:30	**Symposium 2** Women in Orthopedic Oncology		
12:30-13:30	**Round Table 2** Giant Cell Tumor of the Bone	**Round Table 3** Interventional Orthopedic Oncology	
13:30-14:30	**Platform Session 27** Prosthetic reconstruction 3	**Platform Session 28** Spinal and sacral tumors	
14:30-15:30	Society Lectures		
15:30-16:30	**Special Session 3** How to Get Your Data Published		
16:30-17:00	**Closing Remarks**		

Scientific Programme

WEDNESDAY | SEPTEMBER 11TH, 2019

08:00 - 09:00 BANQUET HALL

FLASH SESSION 1: ALLOGRAFT - VASCULARIZED BONE GRAFT • NAVIGATION AND ROBOTICS

Moderators: **Valerae Lewis** (United States) • **Kwok-chuen Wong** (China)

Allograft - Vascularized bone graft

08:00	FP1.1	**Biological reconstruction with vascularized fibula for management of malignant tumors in limbs** Shoufeng Wang, Jin Xiong, Benlong Shi Unit of Musculoskeletal Tumor, Nanjing Gulou Hospital, Nanjing University, Nanjing, China
08:03	FP1.2	**Middle and long effect of osteoarticular allo/autograft replacement in the treatment of proximal humerus osteosarcoma** Yao Weitao He Nan Cancer Hospital, Zheng Zhou City, China
08:06	FP1.3	**Free fibula reconstruction of distal tibial osteoarticular defects after sarcoma surgery** Bulent Erol, Evrim Sirin, Ozgur Baysal, Fevzi Saglam, Said Erkam Baykan, Servet Igrek Marmara University Hospital, Istanbul, Turkey
08:09	FP1.4	**Clinical outcome of free vascularized fibular graft for reconstruction of large bone defect after tumor excision** Yongsung Kim[1], Young Ho Lee[1], Ilkyu Han[1], Hwan Seong Cho[2], Han-Soo Kim[1] [1]Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, South Korea [2]Department of Orthopaedic Surgery, Seoul National University Bundang Hospital, Bundang-gu, Seongnam, South Korea
08:12	FP1.5	**Intercalary femur biological reconstruction after bone tumor resection in children** Patricio Alfaro[1], Virginia Ponz[2], Giovanni Ciani[3], Davide Maria Donati[3], Costantino Errani[3], Marco Manfrini[3] [1]Hospital Traumatologico, Faculty of Medicine, Universidad De Concepcion., Concepcion, Chile [2]Hospital Clinico San Carlos, Madrid, Spain [3]Department of Orthopaedic Oncology, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
08:15	FP1.6	**The use of vascularized fibular autograft for reconstruction of bone defects after resection of bone tumors** Lukas Pazourek[1], Jiri Vesely[2], Tomas Tomas[1], Pavel Janicek[1], Michal Mahdal[1] [1]Department of Orthopaedic Surgery, St. Anne´ s University Hospital, Faculty of Medicine Masaryk University, Brno, Czech Republic [2]Department of Plastic and Aesthetic Surgery, St. Anne's University Hospital, Faculty of Medicine Masaryk University, Brno, Czech Republic

Navigation and robotics

08:18	FP1.7	**Robotic surgery assisted En Bloc sacrectomy for primary bone tumours of the sacrum: Experience of 7cases** Pramod S. Chinder[1], Suraj Hindiskere[1], Srinath Doddarangappa[1], Amrithlal Mascarenhas[2] [1]HCG Hospital, Bangalore, Bangalore, India, [2]The Yellow Ribbon, Karnataka, India
08:21	FP1.8	**CT-guided computer navigation-assisted surgery for musculoskeletal tumors** Philipp Theodor Funovics, Markus Schreiner, Heiko Schmid-Stino, Klemens Vertesich, Gerhard Hobusch, Joannis Panotopoulos, Reinhard Windhager Department of Orthopaedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria
08:24	FP1.9	**From 2D → 3D → 4D, how image management would transform bone tumor surgery?** Chao Ming Chen[1,2,3], Po Kuei Wu[1,2,3], Wei Ming Chen[1,2,3] [1]Therapeutic and Research Center of Musculoskeletal Oncology, Department of Orthopedic Surgery and Traumatology, Taipei Veterans General Hospital, Taipei City, Taiwan [2]Institute of Clinical Medicine, School of Medicine, National Yang-Ming University, Taipei City, Taiwan [3]Department of Orthopedic, School of Medicine, National Yang-Ming University, Taipei City, Taiwan
08:27	FP1.10	**Are uniplanar and multiplanar computer assisted resections safe in sacral tumours?** Catrin Wigley[1], Johnathan Lex[1], Jonathan Stevenson[1], Jose Albergo[2], German Farfalli[2], Luis Aponte-Tinao[2], Lee Jeys[1] [1]Royal Orthopaedic Hospital, Birmingham, United Kingdom [2]Hospital Italiano de Buenos Aires, Buenos Aires, Argentina
08:30	FP1.11	**Surgical classification for robot-assisted sacral tumor resection** Junqiang Yin[1], Hui Wu[2], Gang Huang[1], Yulong He[2], Jingnan Shen[1] [1]Department of Musculoskeletal Oncology, First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China [2]Department of Gastrointestinal Surgery, First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China
08:33	FP1.12	**Robot-assisted resection of a lumbar schwannoma and the application of a novel innovation safety algorithm** Justin Bird, Grant McChesney, Thomas Aloia, Surena Matin MD Anderson Cancer Center, Houston, United States
08:36	FP1.13	**Improved surgical accuracy for navigated pelvic and sacral primary bone sarcoma resections: A historically controlled study** Sarah Bosma[1], Arjen Cleven[2], Sander Dijkstra[1] [1]Department of Orthopedics, Leiden University Medical Center, Leiden, the Netherlands [2]Department of Pathology, Leiden University Medical Center, Leiden, the Netherlands

08:39	FP1.14	**Our experience with 3-D preoperative planning, stereolithographic models and custom-made implants in a University Hospital in a developing country** Marcos Galli Serra[1,2], Walter Parizzia[1,2], Luciano Bertolotti, Facundo Pedemonte, Manuel de Elias[1,2] [1]Hospital Universitario Austral, Derqui, Pilar, Argentina, [2]Hospital Universitario Fundacion Favaloro, Ciudad Autonoma de Buenos Aires, Argentina
08:42		**Discussion**

08:00 - 09:00 HALL N. SKALKOTAS

FLASH SESSION 2: BASIC RESEARCH - TRANSLATIONAL RESEARCH • SPINAL AND SACRAL TUMORS

Moderators: **Francis Lee** (United States) • **Patric Lin** (United States)

Basic research-Translational research

08:00	FP2.1	**The potential role of estrogen receptor alpha on osteosarcoma prognosis and assistant effects for current chemotherapy** Wang Jir-You[1,2,3], Wu Po-Kuei[1,2], Chen Chao-Ming[1,2], Chen Cheng-Fong[1,2], Chen Wei-Ming[1,2] [1]Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan, Taipei, Taiwan, [2]Department of Orthopaedics, Therapeutical and Research Center of Musculoskeletal Tumor, Taipei Veterans General Hospital, Taiwa, Taipei, Taiwan; [3]Institute of Traditional Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan, Taipei, Taiwan
08:03	FP2.2	**The effect of DNA-PKcs on cisplatin resistance and metastasis in osteosarcoma cells and underlying molecular mechanisms** Ka Li, Xin Li, Jianmin Li, Zhiping Yang, Zhenfeng Li, Qiang Yang Department of Orthopedics, Qilu Hospital of Shandong University, China, Jinan, China
08:06	FP2.3	**Chromosomal abnormalities in recurrent giant cell tumor of bone** Pakpoom Ruangsomboon, Rapin Phimolsarnti, Worapa Heepjantree, Pissanu Reingrittha, Saranatra Waikakul Siriraj Hospital, Mahidol University, Bangkok, Thailand
08:09	FP2.4	**Enzalutamide treatment results in anti-androgen resistance in patient-derived bone metastatic prostate cancer models** Anna Kulidjian[1,2], Michelle Muldong[3,4], Sanghee Lee[3,4], Danielle Burner[3,4], Christina Wu[4,5], Theresa Mendoza[3,4], Catalina Arreola[3,4], Nicholas Cacalano[6], Christopher Kane[3,4], Christina Jamieson[3,4] [1]Scripps Clinic Torrey Pines, La Jolla, United States [2]Scripps MD Anderson Cancer Center, La Jolla, United States [3]University of California, San Diego, Department of Urology, La Jolla, United States [4]Moores Cancer Center, University of California, San Diego, La Jolla, United States [5]University of California, San Diego, Department of Medicine, La Jolla, United States [6]University of California, Los Angeles, Department of Radiation Oncology, Los Angeles, United States

08:12	FP2.5	**Statistical description of ankle and foot tumors, a single university institution experience** André Mathias Baptista[2], Juan Pablo Zumarraga[1], Rafael Alves Godinho Tinoco[2], Daniel Seguel Rebolledo[3], Olavo Pires de Camargo[2] [1]Departamento de Ortopedia y Traumatología, Hospital de los Valles, Universidad San Francisco de Quito, Quito, Ecuador [2]Grupo de Oncologia Ortopedica, Instituto de Ortopedia e Traumatologia, Hospital das Clinicas, Universidade de São Paulo, São Paulo, Brasil [3]Grupo de Oncologia Ortopedica, Instituto do Cancêr do Estado de São Paulo, Universidade de São Paulo, São Paulo, Brasil
08:15	FP2.6	**Analysis of circulating free DNA in high-grade sarcoma patients for survival prediction** Xu Huaiyuan, Wang Jin Sun Yat-sen University Cancer Center, Guangzhou, China
08:18	FP2.7	**Novel germline variants in sporadic schwannomatosis** Min Wook Joo[1], Joon Young Park[1], Byung Joo Min[2], Yang-Guk Chung[3] [1]St. Vincent's Hospital, The Catholic University of Korea, Republic of Korea [2]The Human Genome Research Institute, Seoul National University, Republic of Korea [3]Seoul St. Mary's Hospital, The Catholic University of Korea, Republic of Korea
08:21	FP2.8	**Tissue specific microRNA mean expression in liposarcoma and lipoma** Rattasiri Namsiri[1], Chris Charoenlap[1], Chindanai Hongsaprabhas[2], Kornkiat Vongpaisarnsin[3], Voranuch Thanakit[4], Shanop Shuangshoti[4] [1]Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand [2]Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Bangkok, Thailand [3]Department of Forensic Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand [4]Department of Pathology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
08:24	FP2.9	**Inhibiting giT1 reduces the growth, invasion, and angiogenesis of osteosarcoma** Benlong Shi, Shoufeng Wang, Jin Xiong Department of Orthopadics, Drum Tower Hospital, Nanjing University Medical School, Nanjing, China
Spinal and sacral tumors		
08:27	FP2.10	**The most appropriate diameter of titanium mesh cage for reconstruction after one level total en bloc spondylectomy: A finite element analysis** Permsak Paholpak[1], Winai Sirichativapee[1], Taweechok Wisanuyotin[1], Pat Laopattarakasem[1], Weerachai Kosuwon[1], Yuichi Kasai[1], Hideki Murakami[2] [1]Khon Kaen University, Thailand, Khon Kaen, Thailand [2]Department of Orthopedics, Faculty of Medicine, Nagoya City University, Japan
08:30	FP2.11	**Strategies of treatment and controversies for giant cell tumor of the spine** Jianmin Li, Zhiping Yang, Qiang Yang, Zhenfeng Li, Ka Li, Xin Li Qilu Hospital of Shandong University, Jinan, China

08:33	FP2.12	**Cervical en-block spondilectomy: planning, results and failures (19 cases)** Alessandro Luzzati[1], Gennaro Scotto[1], Luca Cannavò[1], Fontanella Walter[2], Biagini Roberto[3], Zoccali Carmine[3] [1]Oncological Orthopaedic Center Istituto Ortopedico Galeazzi Milan, Milan, Italy [2]National Institute of Tumors, ORL Department, Milan, Italy [3]Regina Elena Hospita, Orthopedic Oncological Department, Rome, Italy
08:36	FP2.13	**Children en block spondilectomies for malignant tumors: Review of 20 cases** Alessandro Luzzati[1], Gennaro Scotto[1], Luca Cannavò[1], Roberto Biagini[3], Carmine Zoccali[3], Walter Fontanella[2] [1]Oncological Orthopaedic Center Istituto Ortopedico Galeazzi Milan, Milan, Italy [2]National Institute of Tumors, ORL Department, Milan, Italy [3]Regina Elena Hospital, Orthopedic Oncological Department, Rome, Italy
08:39	FP2.14	**En-bloc spondylectomy in patients older than 60 years: Indications, results and complications in a series of 37 patients** Carmine Zoccali[1], Alessandro Luzzatu[2], Luca Cannavò[2], Jacopo Baldi[1], Roberto Biagini[1], Gennaro Scotto[2] [1]Oncological Orthopaedics, Irccs - Regina Elena National Cancer Institute, Rome, Italy [2]Oncological Orthopaedics and Reconstructive surgery, Irccs - Galeazzi Orthopeadoc Institute, Milan, Italy
08:42	FP2.15	**Total sacrectomy with videolaparoscopy - 15 years follow-up** Eduardo Sadao Yonamine, Bruna Buscharino, Karen Voltan, Anderson Rodrigues, Elio Consentino, Jose Donato Prospero, Aires Leite Jr, Mario Cavalcanti, Murilo Alexandre Santa Casa Medical School of Sao Paulo, Sao Paulo, Brazil
08:45		**Discussion**

09:00 - 10:00 BANQUET HALL

SYMPOSIUM 1: OSSEOINTEGRATION - BRIDGING THE GAP BETWEEN LIMB SALVAGE AND AMPUTATION

Moderators: **Örjan Berlin** (Sweden) • **Robert R. Turcotte** (Canada)

09:00-09:05	**An Introduction to the concept of Osseointegration in treatment of amputees** Örjan Berlin Department of Orthopaedics, Sahlgrenska University Hospital, Gothenburg, Sweden
09:05-09:20	**Biologic seal in osseous integration with additive manufactured porous metals** Ian Dickey Department of Chemical and Biological Engineering, University of Maine, Orono, Maine, United States
09:20-09:35	**Clinical and functional results in treatment of transfemoral amputees with osseointegrated prosthesis** Örjan Berlin Department of Orthopaedics, Sahlgrenska University Hospital, Gothenburg, Sweden

09:35-09:50		**Osseointegration as a way to improve quality of life for amputees; History and future possibilities** Rickard Branemark Department of Orthopaedics, Gothenburg University, Gothenburg, Sweden
09:50-10:00		**Conclusions and questions from the audience**

10:00-10:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

10:30-11:30 BANQUET HALL

PLATFORM SESSION 1: ALLOGRAFT - VASCULARIZED BONE GRAFT
Moderators: **Luis Aponte-Tinao** (Argentina) • **Koichiro Ihara** (Japan)

10:30	IL1	**Introductory Lecture: Long term outcome of telescope allograft technique for femoral and humeral reconstruction following limb preserving surgery** Nicola Fabbri Department of Orthopaedic Surgery, Memorial Sloan Kettering Cancer Center, New York, United States
10:42	OP1.1	**Outcomes of free vascularized fibular grafts for the treatment of radiation-induced femoral nonunions** Meagan Tibbo, Karim Bakri, Andrew Sems, Matthew Houdek, Steven Moran Mayo Clinic, Rochester, United States
10:48	OP1.2	**Vascularised bone graft is an effective technique for extra-cortical bone bridging to combat megaprosthesis loosening at the bone-implant junction** Michelle Hilda Luk, Andy Hon Fai Yee, Raymond Yau, Kenneth Wai-Yip Ho, Ying-Lee Lam Queen Mary Hospital, Hong Kong
10:54	OP1.3	**Biological reconstruction using vascularised fibula in long bone tumours and recalcitrant osteomyelitis for limb salvage - Characteristics and outcomes** Kishore Reddy[1,2,3], Raghuveer Reddy[2], Rajashekar Danda[2], Anil Kumar[2] [1]American Oncology Institute, Hyderabad, India [2]Omni Hospital, Hyderabad, India [3]Citizens Hospital, Hyderabad, India
11:00	OP1.4	**Allograft reconstruction following resection of giant cell bone tumor of the distal forearm and hand** Michal Mahdal[1], Lukas Pazourek[1], Tomas Tomas[1], Iva Zambo[2], Pavel Janicek[1] [1]Department of Orthopedic Surgery, St. Anne's University Hospital/Faculty of Medicine Masaryk University, Brno, Czech Republic [2]Department of Pathology, St. Anne's University Hospital/Faculty of Medicine Masaryk University, Brno, Czech Republic

11:06	OP1.5	**Pelvic ring reconstruction after bone tumour resection with the double-barreled vascularized fibular free flap** Stefano Bastoni[1], Elena Lucattelli[2], Maria Serena Bartoli[1], Fabio Luca Giardina[1], Eleonora Marini[1], Marco Innocenti[2], Primo Andrea Daolio[1] [1]Gaetano Pini Institute, Milano, Italy [2]AO Careggi, Florence, Italy
11:12	OP1.6	**Comparison of free vascularized fibula grafting to allograft strut grafting in spinal pelvic reconstruction for sacral malignancies** Matthew Houdek, Joshua Johnson, Karim Bakri, Franklin Sim, Michael Yaszemski, Peter Rose, Steven Moran Mayo Clinic, Rochester, United States
11:18		**Discussion**

10:30 -11:30 HALL N. SKALKOTAS

PLATFORM SESSION 2: BASIC RESEARCH - TRANSLATIONAL RESEARCH
Moderators: **John Healey** (United States) • **Lukas Nystrom** (United States)

10:30	IL2	**Introductory Lecture: Circulating Tumor DNA: A Non-Invasive Biomarker in Sarcomas** Brittany L. Siontis Mayo Clinic, Rochester, United States
10:42	OP2.1	**CDH4 is a novel determinant of osteosarcoma tumorigenesis and metastasis** Qinglian Tang Sun Yat-sen University Cancer Center, Guangzhou, China
10:48	OP2.2	**Effects of denosumab on stromal cells of giant cell tumor - The genetic change and population change of cancer stem cell** Wang Jir-You[1,2,3], Wu Po-Kuei[1,2], Chen Chao-Ming[1,2], Chen Wei-Ming[1,2] [1]Department of Orthopaedics And Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan, Taipei, Taiwan [2]Department of Orthopaedics, Therapeutical and Research Center of Musculoskeletal Tumor, Taipei Veterans General Hospital, Taipei, Taiwan, Taipei, Taiwan [3]Institutes of Traditional Medicine, National Yang- Ming University, Taipei, Taiwan
10:54	OP2.3	**Integrated molecular characterization of adult soft tissue sarcoma for therapeutic targets** June Hyuk Kim[1], Jong Woong Park[1], Jihyun Kim[2], Hyun Guy Kang[1], Seog Yun Park[3], Jung Yeon Yu[4], Eun Young Lee[4], Sung Eun Oh[1], Young Ho Kim[5], Tak Yun[5], Charny Park[2], Soo Young Cho[2], Hye Jin You[4] [1]Orthopaedic Oncology Clinic, National Cancer Center, Goyang, South Korea [2]Clinical Genomic Analysis Branch, Research Institute, National Cancer Center, Goyang, South Korea [3]Division of Pathology, National Cancer Center, Goyang, South Korea [4]Translational Research Branch, Research Institute, National Cancer Center, Goyang, South Korea [5]Rare Cancer Branch, Research Institute, National Cancer Center, Goyang, South Korea

11:00	OP2.4	**Finite element analysis of dual plating position for diaphyseal femoral allograft - Recycling bone fixation** Taweechok Wisanuyotin, Winai Sirichativapee Department of Orthopaedics, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
11:06	OP2.5	**Comprehensive bioinformatic analysis of immune composition and genes for survival prediction in sarcoma** Hongmin Chen Sun Yat-sen University Cancer Center, Guangzhou, China
11:12	OP2.6	**Hydrogen-peroxide reduces cell viability and induces apoptosis of giant cell tumor derived stromal cells – An in vitro model of intraoperative hydrogen-peroxide treatment** Burkhard Lehner, Jörg Fellenberg, Georg Omlor Orthopedic University Clinic Heidelberg, Heidelberg, Germany
11:18		**Discussion**

11:30-12:30 BANQUET HALL

PLATFORM SESSION 3: BENIGN AND LOW GRADE TUMORS

Moderators: **Dundar Sabah** (Turkey) • **Rickard Brånemark** (Sweden)

11:30	IL3	**Introductory Lecture: Current treatment of benign musculoskeletal tumors** Joseph Benevenia Rutgers New Jersey Medical School, Department of Orthopaedic Surgery, Newark, United States
11:42	OP3.1	**Lipomatous soft tissue tumors – Are we doing too much surgery?** Ana C. Belzarena, Michael D'Angelo, David Joyce Sarcoma Department, USF, Moffitt Cancer Center, Tampa, United States
11:48	OP3.2	**"Neoadjuvant" denosumab – Its role and results in operable cases of giant cell tumor of bone** Ajay Puri, Prateek Hegde, Ashish Gulia, Bharat Rekhi Tata Memorial Hospital, Mumbai, India
11:54	OP3.3	**Chondroblastoma of bone in extremities-a single centre study of 177 cases** Minna Laitinen[1], Jonathan Stevenson[2], Scott Evans[2], Seggy Abudu[2], Vaiyapuri Sumathi[2], Lee Jeys[2], Michael Parry[2] [1]Helsinki University Hospital, Helsinki, Finland [2]Royal Orthopaedic Hospital, Birmighman, United Kingdom
12:00	OP3.4	**Complications of curettage and cementation in low-grade chondrosarcomas** Murat Hiz[1], Suat Ulutas[1], Bedri Karaismailoğlu[2], Baris Gorgun[3], Sergulen Dervisoglu[4] [1]Istanbul-Cerrahpasa University Cerrahpasa Medical Faculty Orthopaedics and Traumatology, Istanbul, Turkey [2] Sinop Ayancik State Hospital, Sinop, Turkey [3]Ortopediatri, Istanbul, Turkey [4]Medipol University Medical Faculty Pathology Department, Istanbul, Turkey

12:06	OP3.5	**Giant cell tumor of the extremity – 10-year follow-up to determine the risk factors of local recurrence after curettage and adjuvant bisphosphonates** Hiu Woo Lau[1], Kwok Chuen Wong[1], Wang Kei Chiu[1], Shekhar Madhukar Kumta[2] [1]Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong, China [2]Department of Orthopaedics and Traumatology, Prince of Wales Hospital, the Chinese University of Hong Kong, Hong Kong, China
12:12	OP3.6	**Which one is an optimal option for aggressive giant cell tumor around the knee joint? Intralesional curettage or wide excision?** Chao Ming Chen[1,2,3], Po Kuei Wu[1,2,3], Wei Ming Chen[1,2,3] [1]Therapeutic and Research Center of Musculoskeletal Oncology. Department of Orthopedic Surgery and Traumatology, Taipei Veterans General Hospital, Taipei City, Taiwan [2]Institute of Clinical Medicine, School of Medicine, National Yang-Ming University, Taipei City, Taiwan [3]Department of Orthopedics, School of Medicine, National Yang-Ming University, Taipei City, Taiwan
12:18		**Discussion**

11:30 - 12:30 HALL N. SKALKOTAS

PLATFORM SESSION 4: BONE SARCOMAS 1
Moderators: **Philipp Theodor Funovics** (Austria) • **Jendrik Hardes** (Germany)

11:30	IL4	**Introductory Lecture: When will the breakthrough come** Peter Steadman Orthopaedic Oncology, Australia New Zealand Sarcoma Association, Brisbane, Australia
11:42	OP4.1	**Efficacy and safety of apatinib in advanced sarcoma: An open-label, non-randomized, single-center study of 45 patients** Yao Weitao He Nan Cancer Hospital, Zheng Zhou City, China
11:48	OP4.2	**Comparison of different treatment options for bone sarcomas involving the distal tibia: A retrospective cohort study** Hongyi Zhu, Ting Yuan, Fan Yang Shanghai Jiao Tong University, Shanghai, China
11:54	OP4.3	**Local recurrence of Ewing sarcoma: Is wide excision acceptable treatment?** Ruifeng Xue[2], Valerae Lewis[1], Bryan Moon[1], Patrick Lin[1] [1]Dept. of Orthopaedic Oncology, MD Anderson Cancer Center, Houston, United States [2]Dept of Orthopaedic Oncology, Peking University Cancer Hospital, Beijing, China
12:00	OP4.4	**Multicentric osteosarcoma treatment and prognostic factor analysis** Weifeng Liu[1], Zhen Huang[1], Yongkun Yang[1], Tao Jin[1], Zhiping Deng[1], Lin Hao[1], Yi Ding[2], Xiaohui Niu[1] [1]Department of Orthopaedic Oncology Surgery, Beijing Ji Shui Tan Hospital, Peking University, Beijing, China [2]Department of Pathology, Beijing Ji Shui Tan Hospital, Peking University, Beijing, China

12:06	OP4.5	**Predictors of readmission and emergency department visits following extremity bone sarcoma resection** Matthew Houdek, Meagan Tibbo, Joshua Johnson, Peter Rose, Lindsay Sangaralingham, Dennis Asante, Steven Moran Mayo Clinic, Rochester, United States
12:12	OP4.6	**Clear cell chondrosarcoma – An European Musculoskeletal Oncology Society study on prognostic factors and patient outcome** Dimosthenis Andreou[1], Julian Roeder[1], Georg Gosheger[1], Imre Antal[2], Daniel Baumhoer[3], Giuseppe Bianchi[4], David Biau[5], José Casanova[6], Nicola Fabbri[7], Anthony Griffin[8], Lee Jeys[9], Miguel San Julian[10], Alexander Klein[11], Carolin Knebel[12], Minna Laitinen[13], Michiel van de Sande[14], Frank Traub[15], Panagiotis Tsagkozis[16], Per-Ulf Tunn[17], Oleg Vyrva[18], Andreas Leithner[19] [1]Münster University Hospital, Münster, Germany, [2]Semmelweis University, Budapest, Hungary [3]Basel University Hospital, Basel, Switzerland, [4]Instituto Orthopedico Rizzoli, Bologna, Italy [5]Cochin University Hospital, Paris, France, [6]Coimbra University Hospital, Coimbra, Portugal [7]Memorial Sloan Ketterin Cancer Center, New York, United States of America, [8]Mount Sinai Hospital, Toronto, Canada, [9]Royal Orthopedic Hospital, Birmingham, United Kingdom [10]University Hospital Navarra, Pamplona, Spain, [11]Ludwig Maximilian University - Campus Grosshadern, Munich, Germany, [12]University Hospital rechts der Isar, Munich, Germany [13]Helsinki University Central Hospital, Helsinki, Finland, [14]Leiden University Medical Center, Leiden, The Netherlands, [15]Tuebingen University Hospital, Tuebingen, Germany [16]Karolinska University Hospital, Stockholm, Sweden, [17]Sarcoma Center Berlin-Brandenburg, Berlin, Germany, [18]Sytenko Institute of Spine and Joint Pathology, Kharkiv, Ukraine [19]Graz University Hospital, Graz, Austria
12:18		**Discussion**

12:30 - 13:00 BANQUET HALL

PRESIDENTIAL LECTURE 1
Chairperson: **Pietro Ruggieri** (Italy)

Insanity: Doing the same thing over and over again, and expecting a different result
George Douglas Letson
Moffitt Medical Group President, Moffitt Cancer Center, Tampa, United States

13:00 - 14:00 **LUNCH BREAK** EXHIBITION AREA

14:00 -15:00 BANQUET HALL

FLASH SESSION 3: BENIGN TUMORS

Moderators: **Robert R. Turcotte** (Canada) • **Gerard Powell** (Australia)

14:00	FP3.1	**Clinical outcomes of the patients with chondroblastoma** Hidetatsu Otani[1], Satoshi Takenaka[1], Kenichiro Hamada[1], Takakai Tanaka[2], Shigeki Kakunaga[3], Norifumi Naka[2], Hideki Yoshikawa[1] [1]Osaka University, Suita, Japan, [2]Osaka International Cancer Institute, Osaka, Japan [3]Osaka National Hospital, Osaka, Japan
14:03	FP3.2	**Natural history of enchondroma referrals at a comprehensive cancer center** Alysia Kemp[1], Nicole Montgomery[2], Robert Satcher[1], Justin Bird[1], Bryan Moon[1], Valerae Lewis[1], Patrick Lin[1] [1]The University of Houston MD Anderson Cancer Center, Houston, United States [2]Baylor College of Medicine Texas Children's Hospital, Houston, United States
14:06	FP3.3	**Osteoid osteomas of the hip: A well-recognized entity with a proclivity for misdiagnosis** Meagan Tibbo[1], Raphael Sierra[1], Timothy Welch[2], Matthew Houdek[1], Doris Wenger[2] [1]Department of Orthopedic Surgery/Mayo Clinic, Rochester, United States [2]Department of Radiology/Mayo Clinic, Rochester, United States
14:09	FP3.4	**Does curettage with hypertonic saline as adjuvant therapy provide lower recurrence rates in giant-cell tumors of extremity?** Zhiye Du, Wei Guo, Rongli Yang, Xiaodong Tang, Yi Yang, Tao Ji Department of Musculoskeletal Tumor Centre, Peking University & People's Hospital, Bei Jing, China
14:12	FP3.5	**Are multiple doses of Denosumab for giant cell tumours an overkill?** Suraj Hindiskere[1], Pramod Chinder[1], Dattaraj Karade[1], Veena R[1], Tejaswini BN[1], Diganta Hazarika[1], Shivakumar Swamy[1], Kallur Kumar[1], Suresh Rao[2], Pragati Rastogi[1] [1]HCG Hospital, Bangalore, India [2]HCG Mangalore Institute of Oncology, Karnataka, India
14:15	FP3.6	**First application of three-dimensional (3D) designing total hip arthroplasty (THA) with long uncemented stem for fibrous dysplasia (FD) patients combined with hip joint osteoarthritis (OA)** Li Min, Yitian Wang, Yong Zhou, Jie Wang, Yi Luo, Fan Tang, Minxun Lu, Chongqi Tu Department of Orthopedics, West China Hospital, Sichuan University, Chengdu, China
14:18	FP3.7	**Ganglion cysts of the proximal tibiofibular joint: A case series of 30 patients** Ioannis Papanastassiou[1], Konstantinos Tolis[2], Olga Savvidou[3], Nikolaos Stavropoulos[3], Evaggelos Papadimitriou[2], Panayiotis J. Papagelopoulos[3], Sarantis Spyridonos[2] [1]General Oncological Hospital Kifisias "Agioi Anargyroi", Athens, Greece [2]Hand surgery/Upper limb Microsurgery Department, General Hospital KAT, Athens, Greece [3]First Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, School of Medicine, "Attikon" University General Hospital, Athens, Greece

14:21	FP3.8	**Efficacy validation of freezing range and temperature conductivity of repeated cryotherapy with liquid nitrogen as adjuvant therapy for bone tumor** Hung-kai Weng[1,2,3], Po-Kuei Wu[3,4], Chao-Ming Chen[3,4,5], Wei-Ming Chen[3,4] [1]Department of Orthopaedics, National Cheng Kung University Hospital, College Of Medicine, National Cheng Kung University, Tainan City, Taiwan [2]Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, Tainan City, Taiwan, [3]Therapeutical and Research Center of Musculoskeletal Tumor, Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei City, Taiwan [4]Department of Orthopaedics, School of Medicine, National Yang-Ming University, Taipei City, Taiwan [5]Institute of Clinical Medicine, College of Medicine, National Yang-Ming University, Taipei City, Taiwan
14:24	FP3.9	**The clinical, radiological and pathological outcomes following treatment of GCTOB with Denosumab** Benjamin Murphy, Domagoj Vodanovic, Claudia Di Bella, Grant Pang, Gerrard Powell, Stephen Schlicht, Warren Pereira, Marcus Pianta, Shona Hendry, John Slavin, Peter Choong St Vincent's Hospital, Fitzroy, Melbourne, Australia
14:27	FP3.10	**Operative versus non-operative approach in aggressive fibromatosis: Preliminary data from a multicentric study** Pierluigi Cuomo[1], Guido Scoccianti[1], Alberto Schiavo[1], Francesco Muratori[1], Sander Dijkstra[4], Philipp Funovics[2], Maria Kukushkina[3], Tamas Perlaky[6], Daniel Muller[5], Domenico Campanacci[1] [1]Department of Orthopaedic Oncology, Azienda Ospedaliero Universitaria Careggi, Firenze, Italy [2]Department of Orthopaedics and Trauma Surgery, Unit for Musculoskeletal Tumors, Medical University of Vienna, Wien, Österreich [3]Department of Skin and Soft Tissue Tumors, National Cancer Institute, Kyiv, Ukraine [4]Orthopaedic Oncology Unit, Department of Orthopaedic Surgery, University of Leiden, Leiden, The Netherlands, [5]Sarcoma Center University of Zurich, Zurich, Switzerland [6]Depth of Orthopaedics, Semmelweis University, Budapest, Hungary
14:30	FP3.11	**Oncological results of cryosurgical therapy for chondroid tumors of the hand** Claudia Deckers, Esther de Leijer, Bart Schreuder, Ingrid van der Geest Department of Orthopedics, Radboudumc, Nijmegen, The Netherlands
14:33	FP3.12	**The mystery of the raised CA 19-9 in a rare case of Desmoplastic Fibroblastoma in the upper limb** Kumaran Rasappan, Shaam Achudan, Mathew Hern Wang Cheng Department of Orthopaedic Surgery, Tan Tock Seng Hospital, Singapore
14:36	FP3.13	**Salvage vs resection in proximal femur benign aggressive lesion: Challenges in decision making** Navaneeth Kamath, Ashish Gulia, Prateek Hegde, Vineet Kurisunkal, Srinath Gupta, Ashwinkumar Prajapati, Prakash Nayak, Ajay Puri Tata Memorial Hospital, Mumbai, India
14:39	FP3.14	**Clinical outcome and risk for recurrence of progressed giant cell tumors of the bone – Retrospective analysis of 90 cases** Burkhard Lehner, Jörg Fellenberg, Georg Omlor Orthopedic University Clinic Heidelberg, Heidelberg, Germany

14:42	FP3.15	**Osteofibrous dysplasia (Campanacci's disease): Long term follow-up study on natural history, results of treatment and relationship with adamantinoma** Nicola Fabbri[1], Laura Campanacci[2], Massimiliano De Paolis[2], Maria Serena Benassi[2], Alberto Righi[2], Piero Picci[2] [1]Orthopaedic Surgery, Memorial Sloan Kettering Cancer Center, New York, United States [2]Istituto Ortopedico Rizzoli, Bologna, Italy
14:45		**Discussion**

14:00 - 15:00 N. SKALKOTAS HALL

FLASH SESSION 4: BONE SARCOMAS - CLINICAL TRIALS - IMMUNOTHERAPY
Moderators: **Yoshihiro Nishida** (Japan) • **Dimosthenis Andreou** (Germany)

14:00	FP4.1	**Extra-articular excision of the knee joint for locally advanced high-grade osteosarcoma of the distal femur is oncologically safe but associated with higher complication rate and inferior functional outcome than intra-articular excision** Eleonora Marini[1], Rui Yang[2], Patrick Boland[3], John Healey[3], Nicola Fabbri[3] [1]Orthopaedic Oncology, Istituto Ortopedico "Gaetano Pini", Milano, Italy [2]Orthopaedic Surgery, Montefiore Medical Center, New York, United States [3]Orthopaedic Surgery, Memorial Sloan Kettering Cancer Center, New York, United States
14:03	FP4.2	**The role of neoadjuvan irradition treatment in Ewing sarcoma patients** Murat Hiz[1], Suat Ulutas[1], Bedri Karaismailoglu[5], Baris Gorgun[4], Burkay Camurdan[1], Fazilet Oner Dincbas[2], Hande Turna[3] [1]Istanbul-Cerrahpasa University, Cerrahpasa Medical Faculty Orthopaedics And Traumatology, Istanbul, Turkey [2]Istanbul-Cerrahpasa University, Cerrahpasa Medical Faculty, Radiation Oncology Department, Istanbul, Turkey [3]Istanbul-Cerrahpasa University, Cerrahpasa Medical Faculty, Medical Oncology Department, Istanbul, Turkey [4]Ortopediatri, Istanbul, Turkey [5]Sinop Ayancık State Hospital, Istanbul, Turkey
14:06	FP4.3	**Outcomes and prognostic factors for chondrosarcoma patients** Nattapol Choursamran, Piya Kiatisevi, Bhasanan Sukanthanak, Pongsiri Piakong Institute of Orthopaedics, Lerdsin General Hospital, Bangrak, Thailand
14:09	FP4.4	**Iliac crest free flap reconstruction after calcanectomy in bone tumors: Analysis of oncological results and functional outcome** Primo Andrea Daolio[1], Stefano Bastoni[1], Eleonora Marini[1], Guido Scoccianti[2], Elena Lucattelli[2], Giulio Domenichini[2], Marco Innocenti[2] [1]Orthopaedic Oncology Department, Milan, Italy [2]Plastic and Reconstructive Microsurgery, Florence, Italy

14:12	FP4.5	**Clinical outcome of clear cell chondrosarcoma: A multicenter study from the japanese musculoskeletal oncology group** Robert Nakayama[1], Keiko Hayakawa[2], Makoto Endo[3], Eisuke Kobayashi[4], Shunsuke Hamada[5], Tsukasa Tsukasa Yonemoto[6], Hiroyuki Kawashima[7], Kenichiro Hamada[8], Itsuo Watanabe[9], Hiroyuki Futani[10], Takahiro Goto[11], Toshifumi Ozaki[12] [1]Department of Orthopaedic Surgery, Keio University School of Mediicine, Shinjuku, Japan [2]Department of Orthopaedic Surgery, Cancer Institute Hospital for JFCR, Tokyo, Japan [3]Department of Orthopaedic Surgery, Kyushu University, Fukuoka, Japan, [4]Department of Orthopaedic Surgery, Chiba Cancer Center, Chiba, Japan, [4]Department of Musculoskeletal Oncology and Rehabilitation, National Cancer Center Hospital, Tokyo, Japan, [5]Department of Orthopaedic Surgery, Nagoya University, Aichi, Japan, [7]Department of Orthopaedic Surgery, Niigata University, Niigata, Japan, [8]Department of Orthopaedic Surgery, Osaka University, Osaka, Japan, [9]Department of Orthopaedic Surgery, Tokyo Dental College Ichikawa General Hospital, Ichikawa, Japan, [10]Department of Orthopaedic Surgery, Hyogo College of Medicine, Hyogo, Japan, [11]Department of Orthopaedic Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital, Tokyo, Japan, [12]Department of Orthopaedic Surgery, Okayama University Graduate School of Medicine, Okayama, Japan
14:15	FP4.6	**Clear cell chondrosarcoma in Indian population – Are outcomes different?** Vineet Kurisunkal, Ashish Gulia, Ajay Puri, Bharat Rekhi Tata Memorial Centre, Mumbai, India
14:18	FP4.7	**Oncological outcomes of surgically treated extremity and pelvic chondrosarcomas** Ashish Gulia, Vineet Kurisunkal, Ajay Puri, Avadhoot Dixit Tata Memorial Centre, Mumbai, India
14:21	FP4.8	**Very long-term follow-up of composite prostheses after periacetabular resection** Fabrice Delepine[1], Gerard Delepine[2] [1]Clinique Du Parc Imperial, Nice, France [2]APHP (retired), Drancy, France
14:24	FP4.9	**Carbon ion radiotherapy for axial bone sarcomas: Review of 512 cases treated according to protocols** Reiko Imai, Tadashi Kamada, Hiroshi Tsuji Hospital of the National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology, Chiba, Japan
14:27	FP4.10	**Female hormone plays a major role in grade 2 chondrosarcoma survival** Minna Laitinen[1], Jose Albergo[3], Michael Parry[2], Jonathan Stevenson[2], German Farfalli[3], Luis Aponte-Tinao[3], Lee Jeys[2] [1]Helsinki University Hospital, Helsinki, Finland [2]Royal Orthopaedic Hospital, Birmighman, United Kingdom [3]Hospital Italiano de Buenos Aires, Buenos Aires, Argentina
14:30	FP4.11	**Bone tumors of the foot: Are they candidate for limb salvage?** Alessandra Botti, Filippo Frenos, Francesco Muratori, Guido Scoccianti, Pierluigi Cuomo, Maurizio Scorianz, Francesca Totti, Giovanni Beltrami, Rodolfo Capanna, Domenico Andrea Campanacci Azienda Ospedaliera Universitaria Careggi, Firenze, Italy

14:33	FP4.12	**Outcome of patients with osteosarcoma after recurrence and analysis of factors affecting the long-term survival – A long-term follow-up study of recurrent patients by multicenter** Liu Xiaozhou[1], Wu Sujia[1], Hu Yongcheng[2], Yu Xiuchun[3], Zhang Guochuan[4], Zhang Weibin[5], Dong Yang[6], Wang Zhen[7] [1]Department of Orthopedics, Jinling Hospital, Nanjing, China, [2]Department of Bone Oncology, Tianjin Hospital, Tianjin, China, [3]Department of Orthopedics, Jinan military general hospital, Ji'nan, China, [4]Department of Bone Oncology, The Third Hospital of Hebei Medical University, Shijiazhuang, China, [5]Department of Orthopedics, Ruijin Hospital Affiliated to Shanghai Jiaotong University, Shanghai, China, [6]Department of Orthopedics, The Sixth People's Hospital Affiliated to Shanghai Jiaotong University, Shanghai, China, [7]Department of Bone Oncology, Xijing Hospital of Air Force Military Medical University, Xi'an, China
14:36	FP4.13	**Microwave ablation therapy of giant cell tumors of bone** Qingyu Fan Fourth Military Medical University, Xi'an, China
14:39	FP4.14	**Early outcomes following segmental bone replacement with massive segmental endoprosthesis using novel laser sintered porous collars** Sohil Patel[1], Panagiotis Gikas[1], Andrew Johnston[1], Gordon Blunn[2], Timothy Briggs[1] [1]Royal National Orthopaedic Hospital, London, United Kingdom [2]University of Portsmouth, Portsmouth, United Kingdom
14:42	FP4.15	**The role of chemotherapy and radiotherapy in extraskeletal osteosarcoma** Marilyn Heng[1], Abha Gupta[2], Peter W. Chung[3], Japanese Musculoskeletal Oncology Group (JMOG)[4], John H. Healey[5], Max Vaynrub[5], Peter S. Rose[6], Matthew T. Houdek[6], Patrick P. Lin[7], Andrew J. Bishop[8], Francis J. Hornicek[1,9], Yen-Lin Chen[1], Santiago Lozano-Calderon[1], Ginger E. Holt[10], Ilkyu Han[11], David Biau[12], Xiaohui Niu[13], Nicholas Bernthal[9], Peter C. Ferguson[14,15], Jay S. Wunder[14,15] *On behalf of the Soft Tissue Osteosarcoma International Collaborative (STOIC)* [1]Massachusetts General Hospital, Harvard Medical School, Boston, United States [2]Department of Medical Oncology, Princess Margaret Cancer Center, Toronto, Canada [3]Radiation Medicine Program, Princess Margaret Cancer Center, Department of Radiation Oncology, University of Toronto, Toronto, Canada, [4]Japanese Musculoskeletal Oncology Group, Tokyo, Japan, [5]Memorial Sloan Kettering Cancer Center, New York, United States, [6]Mayo Clinic, Rochester, United States, [7]Department of Orthopaedic Oncology, MD Anderson Cancer Center, Houston, United States, [8]Department of Radiation Oncology, MD Anderson Cancer Center, Houston, United States, [9]Department of Orthopaedic Surgery, University of California, Los Angeles, United States, [10]Department of Orthopaedic Surgery and Rehabilitation, Vanderbilt University Medical Center, Nashville, United States, [11]Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, Korea, [12]Hopital Cochin AP-HP - INSERM U1153 - Universite Paris Descartes, Paris, France, [13]Department of Orthopaedic Oncology Surgery, Beijing Jishuitan Hospital, Peking University, Beijing, China, [14]University of Toronto Musculoskeletal Oncology Unit, Mount Sinai Hospital, Toronto, Canada, [15]Department of Surgical Oncology, Princess Margaret Cancer Center, Toronto, Canada
14:45	FP4.16	**Statistical fragility of surgical and procedural clinical trials in orthopedic oncology** Eugene Jang, Lynn Forrester, Michelle Lawson, Ana Capi, Wakenda Tyler Columbia University Medical Center, New York, United States
14:48		**Discussion**

15:00-16:00 BANQUET HALL

PLATFORM SESSION 5: CLINICAL TRIAL – CHEMOTHERAPY – IMMUNOTHERAPY AND RADIOTHERAPY - IVR

Moderators: **Evanthia Galanis** (United States) • **Reiko Imai** (Japan)

15:00	IL5	**Introductory Lecture: Oncolytic Virotherapy: An alternate immune based approach to treating soft tissue sarcomas** Steven Robinson Mayo Clinic, Rochester, United States
15:12	OP5.1	**Profiling chondrosarcomas which are potentially sensitive to immunotherapy based on multi-dimensional analyses** Binghao Li, Guoqi Li, Zhaoming Ye The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China
15:18	OP5.2	**ARST 1321: Pazopanib neoadjuvant trial in non-rhabdomyosarcoma soft tissue sarcomas: A report of major wound complications** Tom Scharschmidt[1], Yen-Lin Chen[2], Dian Wang[3], Yueh-Yun Chi[4], Mark Kayton[5], Joel Sorger[6], R. Lor Randall[7], Douglas Hawkins[8], Sheri Spunt[9], Odion Binite[11], Aaron Weiss[10] [1]Department of Orthopaedic Surgery, Ohio State University, Columbus, United States [2]Department of Radiation Oncology, Massachusetts General Hospital, Boston, United States [3]Department of Radiation Oncology, Rush University Medical Center, Chicago, United States [4]Department of Biostatistics, University of Florida, Gainesville, Gainesville, United States [5]Department of Pediatric Surgery, Palm Beach Children's Hospital, West Palm Beach, United States [6]Department of Orthopaedic Surgery, Cincinnati Children's Hospital, Cincinnati, United States [7]Department of Orthopaedic Surgery, UC Davis Medical Center, Davis, United States [8]Department of Pediatric Hematology/Oncology, Seattle Children's Hospital, Seattle, United States [9]Department of Pediatric Hematology/Oncology, Stanford Medical Center, Palo Alto, United States [10]Department of Pediatric Hematology/Oncology, Maine Medical Center, Portland, United States [11]Department of Orthopaedic Surgery, Moffitt Cancer Center, Tampa, United States
15:24	OP5.3	**Apatinib plus camrelizumab (SHR-1210) for unresectable high-grade osteosarcoma (APFAO) progressing after chemotherapy: A prospective, open-label, phase 2 trial** Lu Xie, Jie Xu, Wei Guo, Xin Sun, Kuisheng Liu, Bingxin Zheng, Tingting Ren, Yi Huang, Xiaodong Tang, Taiqiang Yan, Rongli Yang, Kunkun Sun, Danhua Shen, Yuan Li Peking University People's Hospital, Beijing, China
15:30	OP5.4	**Interstitial brachytherapy for soft tissue sarcomas: Experience of 23 cases** Pramod Chinder, Belliappa M. Somaiah, Ramesh Bilimagga, Jayant, Suraj Hindiskere HCG Hospital, Bangalore, India
15:36	OP5.5	**The role of different radiotherapy modalities in central Ewing's sarcoma** Johnathan Lex, Jonathan Stevenson, Michael Parry, Catrin Wigley, Scott Evans, Lee Jeys Royal Orthopaedic Hospital, Birmingham, United Kingdom

15:42	OP5.6	**Post-radiation sarcoma: A study by the Eastern Asian Musculoskeletal Oncology Group** Min Wook Joo[1], Koichi Ogura[2], Shintaro Iwata[2], June Hyuk Kim[3], Xiaohui Niu[4], Chinder Pramod[5], Han Soo Kim[6], Sung Wook Seo[7], Yang-Guk Chung[8] [1]St. Vincent's Hospital, The Catholic University of Korea, Republic of Korea [2]National Cancer Center Hospital, Japan [3]National Cancer Center, Republic of Korea [4]Beijing Ji Shui Tan Hospital, China [5]HCG Bangalore Institute of Oncology, India [6]Seoul National University Hospital, Republic of Korea [7]Samsung Medical Center, Republic of Korea [8]Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Republic of Korea
15:48		**Discussion**

15:00 - 16:00 N. SKALKOTAS HALL

PLATFORM SESSION 6: COMPLICATIONS IN TUMOR SURGERY 1
Moderators: **Harzem Özger** (Turkey) • **Walid Ebeid** (Egypt)

15:00	IL6	**Cemented full diameter Short-Stem plus late extra-medullar biological fixation for revision of lower limb mega-prosthesis aseptic loosening failure** Xiaohui Niu Department of Orthopaedic Oncology, Beijing Ji Shui Tan Hospital, Peking University, Beijing, China
15:12	OP6.1	**Use of endoprostheses for proximal femur metastases results in a rapid rehabilitation and low risk of implant failure. A prospective population-based study** Michala Skovlund Sørensen[1], Peter Frederik Horstmann[1], Klaus Hindsø[2], Michael Mørk Petersen[1] [1]Musculoskeletal Tumour Section, Department of Orthopaedic Surgery, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark [2]Paediatric section, Department of Orthopedic Surgery, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark
15:18	OP6.2	**Subsequent megaprosthetic failure in patients with sarcoma - What to expect after first revision surgery?** Christoph Theil, Julian Röder, Georg Gosheger, Niklas Deventer, Ralf Dieckmann, Dominik Schorn, Jendrik Hardes, Dimosthenis Andreou Universitätsklinikum Münster, Department of Orthopaedics and Tumour Orthopaedics, Münster, Germany
15:24	OP6.3	**Evaluation of osteoarthritis in grafted osteoarticular frozen autografts for reconstruction after resection of malignant bone tumor involving an epiphysis** Katsuhiro Hayashi, Norio Yamamoto, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Yuta Taniguchi, Yoshihiro Araki, Hirotaka Yonezawa, Sei Morinaga, Hiroyuki Tsuchiya Kanazawa University, Kanazawa, Japan

15:30	OP6.4	**The Mutars distal femur replacement in sarcoma patients** Jendrik Hardes[1], Dimosthenis Andreou[2], Georg Gosheger[2], Marcel-Philipp Henrichs[3], Markus Nottrott[1], Wiebke Guder[1], Gregor Hauschild[2], Eike Bormann[4], Maria Eveslage[4], Arne Streitbürger[1] [1]Department of Tumor Orthopaedics And Sarcoma Surgery, Essen, Germany [2]Department of Orthopaedics and Tumor Orthopaedics, University Clinic of Muenster, Muenster, Germany [3]Department of Orthopaedics, Paracelsus Clinic, Osnabrueck, Germany [4]Institute of Biostatistics and Clinical Research, University of Münster, Münster, Germany, Muenster, Germany
15:36	OP6.5	**Thirty-day post-operative readmission, reoperation and mortality in patients with pathologic hip fractures in the setting of bone tumors** Junho Ahn, Kathryn Gallaway, Ashoke Sathy, Joel Wells, Drew Sanders, Adam Starr, Sharon Walton, Dane Wukich, Alexandra Callan University of Texas Southwestern Medical Center, Dallas, United States
15:42	OP6.6	**Experience with periprosthetic infection after limb salvage surgery for patients with osteosarcoma** Jingnan Shen, Junqiang Yin, Tiao Lin, Gang Huang, Changye Zou, Xianbiao Xie, Bo Wang The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
15:48		**Discussion**

16:00 - 16:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

16:30 - 17:30 BANQUET HALL

FLASH SESSION 5: JOINT-SPARING SURGERY • LIMB SALVAGE IN CHILDREN

Moderators: **Apichat Asavamongkolkul** (Thailand) • **Matthew Houdek** (United States)

Joint-sparing surgery

16:30	FP5.1	**Joint-sparing surgery using a recycled tumor-bearing autograft for malignant bone tumor** Michihito Miyagi, Hirohisa Katagiri, Jyunji Wasa, Hideki Murata, Mitsuru Takahashi Shizuoka Cancer Center, Suntou-gun Nagaizumi-tyou, Japan
16:33	FP5.2	**Relative knee instability on motion capture analysis suggests joint salvage provides improved functionality through biological tolerability** Saminathan Suresh Nathan Limb Salvage and Revision Arthroplasty Surgery Pte Ltd, Singapore

Limb salvage in children

16:36	FP5.3	**Chondrosarcomas in children and adolescents – Are they different?** Ajay Puri, Vineet Kurusunkial, Ashish Gulia Tata Memorial Hospital, Mumbai, India

16:39	FP5.4	**Reconstruction of knee joint with semi-joint endoprosthesis in bone malignancies of adolescents** Jingnan Shen, Junqiang Yin, Gang Huang, Changye Zou, Xianbiao Xie, Qinglin Jin First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
16:42	FP5.5	**Evaluation of indications and the perspectives of limb salvage surgery in malignant bone tumors in children** Andrzej Szafranski[1], Magdalena Rychlowska - Pruszynska Rychlowska-Pruszynska[1], Bartosz Pachuta[1], Iwona Malesza[1], Tomasz Walenta[1], Justyna Dusinska[1], Anna Raciborska[2] [1]Department of Oncology & Oncological Surgery in Children & Youth, Institute of Mother & Child, Warsaw, Poland [2]Department of Oncology and Surgical Oncology for Children and Youth, Institute of Mother & Child, Warsaw, Poland
16:45	FP5.6	**Devitalized autograft and intramedullary free vascularized fibular in skeletal reconstruction for bone tumors in children** Tao Ji[1], Zhili Xing[2], Wei Guo[1] [1]Peking Uiversity, People's Hospital, Beijing, China [2]Peking Uiversity, International Hospital, Beijing, China
16:48	FP5.7	**Preliminary research of combining LARS and semi-joint replacement for malignant tumor around the knee in children** Haomiao Li, Shuangwu Dai, Zixiong Lei, Ming Lu The Third Affiliated Hospital of Southern Medical University, Guangzhou, China
16:51	FP5.8	**Is the expandable endoprosthesis a reliable limb-salvage option for growing children with malignant bone tumors of the lower extremity? Our experience** Rodanthi Margariti, Panagiotis Kolovos, Eftichios Papagrigorakis, Nikolaos Kotsakis, Dimitris Papadopoulos, Christos Babouris, Panagiotis Sourilas, Panagiotis Megremis, Christos Zambakides General Children's Hospital of Athens "P & A Kiriakou", Athens, Greece
16:54	FP5.9	**Adjusting for growth in managing long bone sarcoma's in the skeletally immature** Peter Steadman Australia New Zealand Sarcoma Association, Brisbane, Australia, Childrens Hospital Queensland, Brisbane, Australia
16:57	FP5.10	**Extracortical bone bridge formation is the key to the longevity of tumor endoprostheses for limb salvage surgery in Chinese paediatric patients with lower extremity bone sarcoma** Man Lung Moses Li[1], Kwok Chuen Wong[1], Wang Kei Chiu[1], Shekhar-madhukar Kumta[2], Hiu Woo Lau[1] [1]The Prince of Wales Hospital, Department of Orthopaedics and Traumatology, Hong Kong [2]Division of Orthopaedic Tumor, Department of Orthopaedics & Traumatology, The Chinese University of Hong Kong, Hong Kong

17:00	FP5.11	**Lower limb reconstruction of the growing child with the Juvenile Tumour System** Christian Grey-Stevens[1], Saleem Hussenbocus[1], Andrew Johnston[1], Craig Gerrand[1], Panos Gikas[1], Rob Pollock[1], Gordon Blunn[2], Timothy Briggs[1], Steven Cannon[1], William Aston[1,2] [1]Royal National Orthopaedic Hospital, London, United Kingdom [2]Institute of Orthopaedics and Musculoskeletal Science, University College london, London, United Kingdom
17:03	FP5.12	**The results of njon vascularized fibular graft in the treatment of large segments in bone tumors** Reynaldo Jesus-Garcia, Dan Viola, Marcos Korukian, Marcelo Petrilli, Vinicius Mazzolin, Bruna Rocha Universidade Federal de Sao Paulo, Escola Paulisrta De Medicina, Sao Paulo, Brazil
17:06	FP5.13	**Which method to choose in skeletally immature patients with osteosarcoma around the knee?: Biological vs Nonbiological reconstructions** Bugra Alpan[2], Osman Emre Aycan[1], Natig Valiyev[1], Harzem Özger[3] [1]Orthopaedics and Traumatology, Acibadem Maslak Hospital Istanbul, Istanbul, Turkey [2]Orthopaedics and Traumatology, Mehmet Ali Aydinlar University Faculty of Medicine, Istanbul, Turkey [3]Istanbul Orthopaedic Oncology Group, Istanbul, Turkey
17:09		**Discussion**

16:30-17:30 N. SKALKOTAS HALL

FLASH SESSION 6: DIAGNOSTIC IMAGING • METASTASIS 1 • CANCER AND PAIN

Moderators: **Winai Sirichativapee** (Thailand) • **Theresa Julia Chistina Pazionis** (United States)

Diagnostic imaging

16:30	FP6.1	**Early response monitoring to neoadjuvant chemotherapy using FDG PET can predict the clinical outcome of extremity osteosarcoma** Chang-Bae Kong, Byung Hyun Byun, Won Seok Song Korea Cancer Center Hospital, Seoul, South Korea
16:33	FP6.2	**Quantitative SPECT/CT in enchondroma and grade I chondrosarcoma** Min Wook Joo, Woo Hee Choi St. Vincent's Hospital, The Catholic University of Korea, Republic of Korea
16:36	FP6.3	**Long bone Tuberculosis masquerading as Tumor: Can we make a correct diagnosis on imaging?** Manit Gundavda, Manish Agarwal, Rajeev Reddy, Yash Wagh P. D. Hinduja Hospital And MRC, Mumbai, India

Metastasis

16:39	FP6.4	**Beyond limitations of bisphosphonates and denosumab in preventing metastatic cancer-induced bone loss and pathological fractures** Francis Lee, Dieter Lindskog, Gary Friedlaender Yale University, New Haven, United States
16:42	FP6.5	**External validation of PATHFx version 3.0 in patients treated surgically and non-surgically for symptomatic skeletal metastases** Ashley Anderson[1], Nicola Fabbri[3], Rikard Wedin[4], John Healey[3], Jonathan Forsberg[1,2] [1]Walter Reed National Military Medical Center, Department of Surgery Division of Orthopaedics, Bethesda, United States [2]Johns Hopkins University, Department of Orthopaedic Surgery, Baltimore, United States [3]Memorial Sloan-Kettering Cancer Center, New York, United States [4]Karolinska Institutet, Department of Molecular Medicine and Surgery (MMK), K[1], Orthopaedics, Stockholm, Sweden
16:45	FP6.6	**Surgical procedures for diaphyseal bone metastases** Oleg Vyrva, Yanina Golovina Sytenko Institute of Spine and Jointh Pathology, Kharkiv, Ukraine
16:48	FP6.7	**A comparison of outcomes in metastatic proximal femoral fractures between an MSK-oncology centre and a non tumour-specialist university hospital** Sam Downie[2], Sanjay Gupta[1], Ben Clift[2], Ashish Mahendra[1], A Jariwala[2] [1]Glasgow Royal Infirmary, Glasgow, United Kingdom [2]Ninewells Hospital, Dundee, United Kingdom
16:51	FP6.8	**Multivariable analysis in patients with lymph node metastasis of Soft Tissue Sarcoma of limb who were treated with or without limphadenectomy: Follow up and prognostic factors** David Alejandro Herrera, Olavo Pires de Camargo, Andre Mathias, Andre Ferrari, Marcelo Tadeu, Luiz Filipe Correia, Daniel Rebolledo Universidade De Sao Paulo (Hospital Das Clínicas), Sao Paulo, Brazil
16:54	FP6.9	**Separation surgery and SBRT management for spinal metastases - SYSUCC experience** Jin Wang Sun Yat-sen University Cancer Center, Guangzhou, China
16:57	FP6.10	**Risk factors for development of bone metastasis from renal cell carcinoma** Anand Raja, Vishnu Ramanujan, Chandra Kumar Krishnan, Mayilvahanan Natarajan Cancer Institute (WIA), Adyar, Chennai, India
17:00	FP6.11	**Survival after surgery for skeletal metastases is associated with preoperative patient-reported assessments** Meredith K. Bartelstein[1], Jonathan Forsberg[2], Mohamed Yakob[1], Samuel Akhnoukh[3], Jessica A. Lavery[1], Nicola Fabbri[1], Patrick Boland[1], John Healey[1] [1]Memorial Sloan Kettering Cancer Center, New York, United States [2]Johns Hopkins University, Baltimore, United States [3]Stony Brook University School of Medicine, Stony Brook, United States

17:03	FP6.12	**Surgical options and outcomes for pelvic bone metastasis** Zeping Yu, Hong Duan West China Hospital, Sichuan University, Chengdu, China

Cancer and pain

17:06	FP6.13	**Post-operative delirium in patients undergoing surgery for bone metastases** Suraj Hindiskere[1,2], Younsung Kim[1], Han-Soo Kim[1], Hwan Seong Cho[1], Ilkyu Han[1] [1]Seoul National University Hospital, Seoul, South Korea [2]HCG Hospital, Bangalore, India
17:09		**Discussion**

17:30-18:30 BANQUET HALL

PLATFORM SESSION 7: PROSTHETIC RECONSTRUCTION 1
Moderators: **Ajay Puri** (India) • **Daniel Kotrych** (Poland)

17:30	IL7	**Introductory Lecture: The evolution of prostheses: from modular to custom** Domenico Andrea Campanacci Department of Orthopedic Oncology and Reconstructive Surgery, Careggi Universitary Hospital, Firenze, Italy
17:42	OP7.1	**Comparison of reconstructive techniques following oncologic intraarticular resection of proximal humerus** Matthew Houdek, Brandon Bukowski, Alexander Athey, Eric Wagner, Jonathan Barlow, Peter Rose, Joaquin Sanchez-Sotelo Mayo Clinic, Rochester, United States
17:48	OP7.2	**Proximal femoral allograft prosthetic composites; Do they really restore bone? A retrospective review of revision allograft prosthetic composites** Benjamin Wilke[1], Matthew Houdek[2], Peter Rose[2], Franklin Sim[2] [1]Mayo Clinic, Jacksonvile, United States [2]Mayo Clinic, Rochester, United States
17:54	OP7.3	**Total talar replacements: A South African series** Thomas Hilton, Keith Hosking, Graham McCollum, Michael Abramson University of Cape Town, Cape Town, South Africa
18:00	OP7.4	**Press Fit vs Cemented femoral stems in arthroplasty for oncologic indications** Courtney Kaiser, Jason Kim, Joseph Schwab, Kevin Raskin, Santiago Lozano-Calderon Massachusetts General Hospital, Boston, United States
18:06	OP7.5	**First application of three-dimensional (3D) design custom-made uncemented prosthetic stem for distal femoral cemented megaprosthesis revision** Li Min, Fan Tang, Minxun Lu, Yong Zhou, Yi Luo, Yitian Wang, Jie Wang, Chongqi Tu Department of Orthopedics, West China Hospital, Sichuan University, Chengdu, China

18:12	OP7.6	**Aseptic loosening (Type II Failure) in Cemented distal femoral endoprosthesis and radiologic clues to long-term survivorship of the implant** Pongsiri Piakong[1,2], Raymond Yau[3], Giulia Trovarelli[4], Albert Lam[3], David Joyce[1], Piya Kiatisevi[2], Odion Binitie[1], Pietro Ruggieri[4], Thomas Temple[1], Douglas Letson[1] [1]Sarcoma Program, Moffitt Cancer and Research Institute, Tampa, United States [2]Department of Orthopaedics and Orthopaedic Oncology, Lerdsin Hospital, Bangkok, Thailand [3]Department of Orthopaedics and Traumatology, Queen Mary Hospital, Hong Kong [4]Department of Orthopaedics and Orthopaedic Oncology, University of Padova, Padova, Italypaedics and Orthopaedic Oncology, University of Padova, Padova, Italy
18:18		**Discussion**

17:30 -18:30 N. SKALKOTAS HALL

PLATFORM SESSION 8: FUNCTIONAL RESULTS AND QUALITY OF LIFE 1

Moderators: **Reynaldo Jesus Garcia** (Brazil) • **Christos Zambakides** (Greece)

17:30	IL8	**Introductory Lecture: Function and quality of life outcomes in sarcoma patients following internal hemipelvectomy without reconstruction** Valerae Lewis Department of Orthopaedic Oncology, University of Texas MD Anderson Cancer Center, Houston, Texas, United States
17:42	OP8.1	**Assessment of patient experiences following total en bloc sacrectomy for primary malignant sacral tumors: A qualitative study** Yifei Wang[1], Weiming Liang[2], Shan Qu[3], Yidan Zhang[1], Tao Ji[1], Dasen Li[1], Huayi Qu[1], Yi Yang[1], Taiqiang Yan[1], Xiaodong Tang[1], Rongli Yang[1], Wei Guo[1] [1]Department of Musculoskeletal Tumors, Peking University People's Hospital, China [2]Department of Orthopedics, The first Affiliated Hospital of Guangxi University of Science and Technology, Liuzhou, China [3]Department of Psychology, Peking University People's Hospital, China
17:48	OP8.2	**Modular-Replacement-Sports Survey (MoReSport)** Gerhard Hobusch[1], Florian Keusch[2], Michael Joyce[3], Reinhard Windhager[1] [1]Department of Orthopaedic and Trauma Surgery, Medical University of Vienna, Vienna, Austria [2]Statistics and Methodology, University of Mannheim, Mannheim, Germany [3]Department of orthopaedic surgery, Cleveland Clinic, Cleveland, United States
17:54	OP8.3	**Functional outcome after tumour resection and total femoral replacement: A systematic review** Oluwaseyi K. Idowu[1], Mohamad Nasser[1], Michelle Maden[1], Adesegun T. Abudu[2] [1]Edge Hill University, Ormskirk, United Kingdom [2]Royal Orthopaedic Hospital, Birmingham, United Kingdom

18:00	OP8.4	**The Sarcoma-Specific Quality of Life Study (SARC-QoL): Identifying key domains of Health-Related Quality of Life in adult patients with extremity soft tissue sarcoma** Krista Goulding[1], Argerie Tsimicalis[2], Robert Turcotte[2], Urska Kosir[3], Kedar Mate[1], Carolyn Freeman[2], Nancy Mayo[2] [1]Mayo Clinic, Phoenix, United States, [2]McGill University, Montreal, Canada [3]Oxford University, Oxford, United Kingdom
18:06	OP8.5	**Functional outcomes in patients that had the distal ulna resected due to bone tumors** Juan Pablo Zumarraga[1], Pablo de la Rosa[4], André Mathias Baptista[2], Carlos Maçaneiro Jr[2], Marilia Sândalo Trevelin Pimentel[3], Olavo Pires de Camargo[2] [1]Departamento de Ortopedia y Traumatología, Hospital de los Valles, Universidad San Francisco de Quito, Quito, Ecuador [2]Grupo de Oncologia Ortopedica, Instituto de Ortopedia e Traumatologia, Hospital das Clinicas, Universidade de São Paulo, São Paulo, Brasil [3]Departamento de Terapía Ocupacional, Instituto de Ortopedia e Traumatologia, Hospital das Clinicas, Universidade de São Paulo, São Paulo, Brasil [4]Departamento de Ortopedia y Traumatología, Unidad de Oncologia, Clínica Delgado de Lima, Lima, Peru
18:12	OP8.6	**Using the neighbor: Trans-locating the ulna to reconstruct distal radius defects. Technical tweaks for better outcomes** Manish Agarwal, Manit Gundavda, Rajeev Reddy, Ameya Katariya, Ravi Bhadiyadra P.D. Hinduja Hospital and MRC, Mumbai, India
18:18		**Discussion**

18:30-19:30 BANQUET HALL

ROUND TABLE 1: LIMB SALVAGES IN CHILDREN
Moderators: **Konstantinos Malizos** (Greece) • **Han-Soo Kim** (South Korea)

18:30-18:45	**Biological Reconstruction in pelvis and lower extremities in children** Rodolfo Capanna Department of Orthopaedic Oncology and Reconstructive Surgery, University Hospital Careggi, Florence, Italy
18:45-19:00	**Biological reconstruction of the shoulder and upper extremity in children** Ajay Puri Tata Memorial Centre, Mumbai, India
19:00-19:15	**Endoprosthetic reconstruction around the knee in children** Vasileios Kontogeorgakos National and Kapodistrian University of Athens, School of Medicine, Athens, Greece
19:15-19:30	**Limb salvage versus amputation in children and adolescents-When amputation is the best choice?** Robert R. Turcotte Department of Orthopaedic Surgery, Mc Gill University Health Centre, Montreal, Canada

19:30 - 20:30 BANQUET HALL

OPENING CEREMONY

Welcome Addresses

Opening Lectures
Chairperson: **Panayiotis J. Papagelopoulos** (Greece)

The History of ISOLS
Rainer I. Kotz
Vienna Privatclinic, Department of Orthopedics, Wien, Austria

The first 10^{-30}s
Dimitri V. Nanopoulos
Regular Member of the Academy of Athens, Distinguished Professor of High Energy Physics, Texas A&M University

20:30 **WELCOME RECEPTION** EXHIBITION AREA

Scientific Programme

THURSDAY | SEPTEMBER 12TH, 2019

08:00 - 09:00 BANQUET HALL

FLASH SESSION 7: COMPLICATIONS IN TUMOR SURGERY • FUNCTIONAL RESULTS AND QUALITY OF LIFE

Moderators: **G. Ulrich Exner** (Switzerland) • **Gerhard Hobusch** (Austria)

Complications in tumor surgery

08:00	FP7.1	**Comparison of bipolar hemiarthroplasty and total hip arthroplasty. Inallograft-prosthesis composite reconstruction for proximal femur tumors** Khodamorad Jamshidi[1], Masoud Mirkazemi[1], Azra Izanloo[2], Mohamad Gharehdaghi[3] [1]Iran University of Medical Sciences, Tehran, Iran [2]Razavi Cancer Research Center, Razavi Hospital, Imam Reza International University, Mashhad, Iran [3]Orthopedic Research Center, Mashhad University of Medical Sciences, Mashhad, Iran
08:03	FP7.2	**Does prosthetic reconstruction have better survival than biologic in limb sparing tumor surgery?** Chindanai Hongsaprabhas[1], Chris Charoenlap[2] [1]Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Bangkok, Thailand [2]Department of Orthopaedics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
08:06	FP7.3	**Thirty-day outcomes following pediatric bone and soft tissue sarcoma surgery: An analysis of the NSQIP–Pediatrics database** Kathryn Gallaway, Junho Ahn, Alexandra Callan Department of Orthopaedics, UT Southwestern Medical Center, Dallas, United States
08:09	FP7.4	**Fracture after radiationtherapy in soft tissue sarcomas** Filippo Frenos[1], Francesco Muratori[1], Guido Scoccianti[1], Maurizio Scorianz[1], Daniela Greto[4], Daniela Martinelli[1], Salvatore Sepe[1], Monica Lo Russo[4], Giovanni Beltrami[2], Rodolfo Capanna[3], Domenico Andrea Campanacci[1] [1]Department of Orthopedic Oncology and Reconstructive Surgery, Careggi Universitary Hospital, Firenze, Italy [2]Department of Paediatric Orthopaedic Oncology, Careggi Universitary Hospital, Firenze, Italy [3]Clinic of Orthopaedics and Traumatology, University of Pisa, Pisa, Italy [4]Department of Radiationtherapy, Careggi Universitary Hospital, Firenze, Italy
08:12	FP7.5	**Results of vena cava filter in preventing peri-operative pulmonary embolus in musculoskeletal tumor patients** Joseph Ippolito, Jennifer Thomson, Valdis Lelkes, Nemesis Hazim-Liriano, Kathleen Beebe, Francis Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States

08:15	FP7.6	**Occlusive wound closure prevents prolonged wound discharge in patients undergoing tumor resection and endoprosthetic reconstruction of the proximal femur - A randomized controlled trial** Werner Hettwer[1], Chunsen Wu[3], Peter Horstmann[1], Claus Lindkær-Jensen[1], Anders Krarup-Hansen[2], Michael Mørk Petersen[1] [1]Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark [2]Helevog Gentofte Hospital, Copenhagen University Hospital, Copenhagen, Denmark [3]Odense Universitæts Hospital, University of Southern Denmark, Odense, Denmark
Functional results and quality of life		
08:18	FP7.7	**Functional outcomes of endoprosthetic reconstruction after resection of primary bone tumours around knee** Sudhir Kumar Garg, Bharath Patil, Purnima Aggarwal Government Medical College & Hospital, Chandigarh, India
08:21	FP7.8	**What are the results of limb salvage surgery for primary bone sarcoma of the forearm?** Weifeng Liu, Xiaohui Niu, Tao Jin, Yongkun Yang, Zhiping Deng, Lin Hao, Tao Wang Department of Orthopaedic Oncology Surgery, Beijing Ji Shui Tan Hospital, Peking University, Beijing, China
08:24	FP7.9	**Treatment of limb-lenght discrepancy and deformities related to Ollier's disease: a systematic review of literature** Andrea Angelini, Andrea Dolci, Riccardo Baracco, Antonio Berizzi, Pietro Ruggieri Department of Orthopedics and Orthopedic Oncology, University of Padova, Padova, Italy
08:27	FP7.10	**How is functional outcome measured in lower extremity soft tissue sarcoma patients? A systematic literature review** Gilber Kask[1,2], Ian Barner-Rasumussen[2], Jussi Repo[2], Kaarel Kilk[3], Magnus Kjäldman[2], Carl Blomqvist[4], Erkki Tukiainen[2] [1]Tampere University Hospital, Department of Orthopaedics and Traumatology, Unit of Musculoskeletal Surgery, Tampere, Finland [2]Helsinki University Hospital, Plastic surgery, Helsinki, Finland [3]Lapland Central Hospital, Orthopedics and Traumatology, Rovaniemi, Finland [4]Helsinki University Hospital, Comprehensive Cancer Center, Helsinki, Finland
08:30	FP7.11	**The Sarcoma-Specific Quality of Life Study (SARC-QoL): Psychological functioning and coping styles in adult extremity soft tissue sarcoma** Krista Goulding[1], Robert Turcotte[2], Urska Kosir[3], Kedar Mate[2], Carolyn Freeman[2] [1]Mayo Clinic, Phoenix, United States [2]McGill University, Montreal, Canada [3]Oxford University, Oxford, United Kingdom
08:33	FP7.12	**Patient-reported SF-36 scores improve accuracy of the surgeon's estimate of survival for patients operated on for metastatic bone disease** Samuel Akhnoukh[3], Mohamed A. Yakoub[1], Jonathan Forsberg[2], Meredith K. Bartelstein[1], Patrick Boland[1], Nicola Fabbri[1], John H. Healey[1] [1]Memorial Sloan Kettering Cancer Center, New York, United States [2]Johns Hopkins University, Baltimore, United States [3]Stony Brook University School of Medicine, Stony Brook, United States

08:36	FP7.13	**Functional outcomes, quality of life and complications of Pasteurized Autograft Prosthetic Composite (PAPC) compared to endoprosthesis for reconstruction around the knee** Piya Kiatisevi[1], Kanokpol Obsangthong[1], Areerak Phanphaisarn[2], Dumnoensun Pruksakorn[2], Pongsiri Piakong[1], Bhasanan Sukunthanak[1] [1]Institute of Orthopaedics, Lerdsin Hospital, Bangkok, Thailand [2]Department of Orthopaedic, Chiang Mai University, Chiang Mai, Thailand
08:39	FP7.14	**Patellar positioning post EPR around the knee and its effect on function** Vivek Ajit Singh, Mahesh Waran, Nor Faissal Yasin University Malaya Medical Center, Petaling Jaya, Malaysia
08:42		**Discussion**

08:00 - 09:00 N. SKALKOTAS HALL

FLASH SESSION 8: MOLECULAR-TARGETED THERAPY • VARIOUS

Moderators: **Brittany Siontis** (United States) • **B. Hudson Berrey** (United States)

Molecular-targeted therapy

08:00	FP8.1	**GCT and Denosumab – The story continues...** Pramod Chinder, Suraj Hindiskere, Srinath Doddarangappa HCG Hospital, Bangalore, India
08:03	FP8.2	**Osteosarcoma and soft-tissue sarcomas with an immune infiltrate express PD-L1, a potential target for immunotherapy** Jay S. Wunder[1,3], Minji Lee[2], Junghyun Nam[2,4], Beatrice Y. Lau[5], Brendan C. Dickson[1,4,5], Dushanthi Pinnaduwage[2], Shelley B. Bull[2,6], Peter C. Ferguson[1,3], Andrew Seto[2], Nalan Gokgoz[2], Irene L. Andrulis[2,4,7] [1]University Musculoskeletal Oncology Unit, Mount Sinai Hospital, Toronto, Canada; [2]Lunenfeld-Tanenbaum Research Institute, Sinai Health System, Toronto, Canada; [3]Departments of Surgery, University of Toronto, Toronto, Canada; [4]Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, Canada; [5]Department of Pathology and Laboratory Medicine, Sinai Health System, Toronto, Canada; [6]Dalla Lana School of Public Health, University of Toronto, Toronto, Canada; [7]Department of Molecular Genetics, University of Toronto, Toronto, Canada
08:06	FP8.3	**Anorexia, hypertension, pneumothorax, and hypothyroidism: Potential biomarkers of improved clinical outcome following apatinib in advanced osteosarcoma** Lu Xie, Jie Xu, Wei Guo Peking University People's Hospital, Beijing, China

Various

08:09	FP8.4	**The effect of intra-operative text messages in reducing anxiety levels among family members of patients undergoing major musculoskeletal tumour surgery** Vivek Ajit Singh, Rishi Ram Poudel, Nor Faissal Yasin University Malaya Medical Center, Petaling Jaya, Malaysia

08:12	FP8.5	**An investigation of multiple primary cancers in patients with bone and soft tissue malignancies** Akiyoshi Shimatani, Manabu Hoshi, Naoto Oebisu, Tadashi Iwai, Naoki Takada, Hiroaki Nakamura Department of Orthopedic Surgery Osaka City University Graduate School of Medicine, Osaka, Japan
08:15	FP8.6	**An investigation on temperature of soft tissue tumor** Akiyoshi Shimatani, Manabu Hoshi, Naoto Oebisu, Tadashi Iwai, Naoki Takada, Hiroaki Nakamura Department of Orthopedic Surgery Osaka City University Graduate School of Medicine, Osaka, Japan
08:18	FP8.7	**Bone metastases in sarcoma: Is there any place for curative surgery?** Jean-Camille Mattei, Ibrahim Alshaygy, Geroges Basile, Anthony Griffin, Peter Ferguson, Jay Wunder Mount Sinai Hospital, University of Toronto, Toronto, Canada
08:21	FP8.8	**Rotationplasties in adults: Indications, outcomes, pearls and pitfalls** Thomas Aloysius KW Wong, Lester Wai Mon Chan, Mathew Hern Wang Cheng Department of Orthopaedic Surgery, Tan Tock Seng Hospital, Singapore
08:24	FP8.9	**Functional outcome of reconstruction with nail-cement spacer for malignant and aggressive tumors of proximal humerus** Roshan Banjara, Sushma Thapa, Abdul Majeed, Venkatesan Sampath Kumar, Shah Alam Khan Department of Orthopaedics, All India Institute of Medical Sciences, New Delhi, India, New Delhi, India
08:27	FP8.10	**Update on the American Academy of Orthopaedic Surgeons Musculoskeletal Tumor Registry** Benjamin Miller University of Iowa, Iowa City, United States
08:30	FP8.11	**Overcoming the challenges encountered in a randomized surgical trial. Lessons from a randomized trial to treat pathologic pertrochanteric fractures** John Healey[1], Timothy A. Damron[2], Matthew Steensma[3], Rui Yang[4], Brian Brigman[5], Wakenda K. Tyler[6], Rhiannon Miller[7], Linda Chen[1], Elyn R. Riedel[1] [1]Memorial Sloan Kettering Cancer Center, New York, United States; [2]Upstate Medical University, Syracuse, United States; [3]Spectrum Health, Grand Rapids, United States; [4]Montefiore Medical Center, New York, United States; [5]Duke University Health System, Durham, United States; [6]Columbia Orthopaedics, New York, United States; [7]Weill Cornell Medicine, New York, United States
08:33	FP8.12	**Practice and perceptions of orthopaedic oncologists toward Denosumab therapy for giant cell tumor of the bone: Cross-sectional survey** Abdulrahman Alaseem[1], Krista Goulding[2], Robert Turcotte[1] [1]Division of Orthopaedics, Department of surgery, Mcgill University, Montreal, Canada; [2]Department of Orthopaedic Surgery, Mayo Clinic, Phoenix, United States
08:36	FP8.13	**Skeletal involvement in children with langerhans cell histiocytosis. Healing, complication and functional outcome** Ahmed Abdelaal, Ahmed Elghoneimy, Mohamed Sedki, Iman Zaki, Asmaa Salama, Omayma Hassanain, Seham Gohar Children Cancer Hospital Egypt, Cairo, Egypt
08:39		**Discussion**

09:00-10:00 BANQUET HALL

CROSSFIRE SESSION 1: PRIMARY PROSTHETIC RECONSTRUCTION: COATED VS NON-COATED ENDOPROSTHESIS

Moderator: **William Aston** (United Kingdom)

Coated implants	VS	Non-Coated implants
Jendrik Hardes Department of Musculoskeletal Surgical Oncology, University Hospital of Essen, Essen, Germany		Lee M. Jeys The Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham, United Kingdom

10:00-10:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

10:30-11:30 BANQUET HALL

PLATFORM SESSION 9: BENIGN TUMORS

Moderators: **Ying-Lee Albert Lam** (Hong Kong) • **Andreas F. Mavrogenis** (Greece)

10:30	IL9	**Introductory Lecture: Revision vs Amputation of megaendoprotheses after sarcoma resection** Martin Thaler Department of Orthopaedic Surgery, Medical University Innsbruck, Innsbruck, Austria
10:42	OP9.1	**Ostectomy followed by dynamic hip screw (DHS) with polymethylmethacrylate (PMMA) augmentation for shepherd's crook deformity in fibrous dysplasia: The outcome of 39 patients with long-term follow-up** Yuan Li, Hairong Xu, Xiaohui Niu Beijing Jishuitan Hospital, Beijing, China
10:48	OP9.2	**Factor analysis associated with local recurrence and limb function of 105 patients with diffuse-type tenosynovial giant cell tumor: A multinational study of an Asian population** Akihiko Takeuchi[1], Norio Yamamoto[1], Xiaohui Niu[2], Wei-Ming Chen[3], Tomoki Nakamura[4], Saminathan Suresh Nathan[5], Takafumi Ueda[6], Shintaro Iwata[7], Akira Kawai[8], Yong-Koo Kang[9], Apichat Asavamongkolkul[10], Edward HM Wang[11], Vivek Ajit Singh[12], Toshiharu Shirai[13], Yang-Guk Chung[14], Hiroyuki Tsuchiya[1] [1]Department of Orthopaedic Surgery, Kanazawa University Graduate School of Medical Sciences, Kanazawa, Japan [2]Department of Orthopedic Oncology Surgery, Beijing Jishuitan Hospital, Beijing, Beijing, China [3]Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei, Republic of China [4]Department of Orthopaedic Surgery, Mie University Graduate School of Medicine, Tsu, Japan [5]Department of Orthopaedic Surgery, National University of Singapore, Singapore, Singapore [6]Department of Orthopaedic Surgery, Osaka National Hospital, Osaka, Japan [7]Division of Orthopedic Surgery, Chiba Cancer Center, Chiba, Japan [8]Department of Musculoskeletal Oncology, National Cancer Center Hospital, Tokyo, Japan [9]Department of Orthopaedic Surgery, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea

10:48	OP9.2	[10]Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand, [11]UP Musculoskeletal Tumor Unit, Department of Orthopedics, University of the Philippines Manila, Manila, Philippines, [12]Department of Orthopaedics (Noceral), Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia, [13]Department of Orthopaedics, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan [14]Department of Orthopedic Surgery, Seoul St. Mary's Hospital, Seoul, Korea
10:54	OP9.3	**Endoscopic curettage for benign bone tumors** Hisaki Aiba, Masaaki Kobayashi, Satoshi Yamada, Hideki Okamoto, Masahiro Nozaki, Hideki Murakami Nagoya City University, Nagoya, Japan
11:00	OP9.4	**Can an artificial bone graft give support without osteosynthesis? A preliminary study on mechanical realiability and bone regeneration** Michele Boffano, Pietro Pellegrino, Nicola Ratto, Ugo Albertini, Stefano Marone, Elena Boux, Andrea Ferro, Raimondo Piana Oncologic Orthopaedic Surgery AOU Città della Salute e della Scienza Torino, Torino, Italy
11:06	OP9.5	**Curettage for giant cell tumor of bone is suited to a practice of surgery for early-career orthopaedic oncologists** Giovanni Ciani[1], Shinji Tsukamoto[2], Andreas F. Mavrogenis[3], Piergiuseppe Tanzi[1], Manabu Akahane[2], Yasuhito Tanaka[2], Davide Maria Donati[1], Costantino Errani[1] [1]Department of Orthopaedic Oncology, Rizzoli Institute, Bologna, Italy [2]Department of Orthopaedic Surgery, Nara Medical University, Nara, Japan [3]First Department of Orthopaedics, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece
11:12	OP9.6	**Giant cell tumor of the distal ulna** Olga Savvidou, Ioannis Papanastasiou, Ioannis Trikoupis, Andreas Tsantes, Christos Vottis, Panayiotis J. Papagelopoulos First Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, School of Medicine, "Attikon" University General Hospital, Athens, Greece
11:18		**Discussion**

10:30 - 11:30 N. SKALKOTAS HALL

PLATFORM SESSION 10: BONE SARCOMAS 2

Moderators: **Toshiharu Shirai** (Japan) • **Daniel Prince** (United States)

10:30	IL10	**Introductory Lecture: Staging work up in chondrosarcoma: Is bone scan warranted for the metastatic workup of chondrosarcoma?** Ashish Gulia Bone and Soft Tissue Disease Management Group, Tata Memorial Centre, Mumbai, India
10:42	OP10.1	**Prognostic significance of vascular tumor emboli in non-metastatic osteosarcoma** Anand Raja, Vishnu Ramanujan, Chandra Kumar Krishnan, Mayilvahanan Natarajan Department of Surgical Oncology, Cancer Institute (WIA), Adyar, Chennai, India

10:48	OP10.2	**Chondrosarcoma of the bone over 70 years old from a single institution: Same pathology but different treatment?** Matteo Olivero[1,2], Simona Legrenzi[1,2], Michele Boffano[1], Stefano Marone[1], Elena Boux[1], Andrea Ferro[1], Raimondo Piana[1] [1]Oncologic Orthopaedic Surgery AOU Città della Salute e della Scienza Torino, Torino, Italy [2]Orthopaedic and Traumatology Clinic - University of Turin, Torino, Italy
10:54	OP10.3	**Myofibroblastic sarcoma of bone: Clinical outcome highlights the challenge of diagnosis and treatment** Fan Tang, Li Min, Yong Zhou, Yi Luo, Minxun Lu, Chongqi Tu Department of Orthopeadic, West China Hospital, Sichuan University, Chengdu, China
11:00	OP10.4	**Individual risk evaluation for local recurrence and distant metastasis in Ewing sarcoma: A multistate model** Sarah Bosma[1], Anja Rueten-Budde[2], Carlo Lancia[2], Andreas Ranft[3], Uta Dirksen[3], Hans Gelderblom[4], Michiel van de Sande[1], Sander Dijkstra[1], Marta Fiocco[2] [1]Leiden University Medical Center, Department of Orthopedics, Leiden, Netherlands [2]Leiden Universitair Mathematical Institute, Leiden, Nederland [3]University Hospital Essen, University Duisburg. Essen, Pediatrics III, Sarcoma Centre, West German Cancer Centre, German Cancer Consortium, Essen, Germany [4]Leiden Universitair Medisch Centrum, Department of Medical Oncology, Leiden, Nederland
11:06	OP10.5	**Tumor cell seeding in the biopsy tract and its clinical significance in osteosarcomas** Kemal H. Turkoz, Bulent Erol, Ipek E. Seven Marmara University Hospital, Istanbul, Turkey
11:12	OP10.6	**Comparison of clinical features, management and outcomes of osteosarcoma located in proximal fibula and proximal tibia: A propensity score matching analysis** Xianbiao Xie, Jingnan Shen, Hao Yao, Gang Huang, Junqiang Yin, Changye Zou, Yongqian Wang, Bo Wang, Zhiqiang Zhao, Tiao Lin Department of Bone Tumor, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
11:18		**Discussion**

10:30-13:30 **ISOLS BOARD MEETING** MC3.2 HALL

11:30-12:30 BANQUET HALL

PLATFORM SESSION 11: COMPLICATIONS IN TUMOR SURGERY 2

Moderators: **Marcio Moura** (Brazil) • **Giovanni Beltrami** (Italy)

11:30	IL11	**Introductory Lecture: Complications - Anticipation is the greater part of pleasure** Peter F. M. Choong University of Melbourne Department of Surgery, St. Vincent's Hospital, Melbourne, Australia

11:42	OP11.1	**Managements in wound complications after wide resection of patients with sacral tumors** Tiao Lin, Jingnan Shen, Junqiang Yin, Gang Huang, Changye Zou, Xianbiao Xie, Bo Wang The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
11:48	OP11.2	**Laser assisted Indocyanine Green (ICG) cutaneous angiography to assess flap viability following extremity sarcoma resection** B Hudson Berrey Baptist MD Anderson Cancer Center, Jacksonville, United States
11:54	OP11.3	**Risk factors for surgical site infection in malignant musculoskeletal tumors** Ka Li, Jianmin Li, Zhiping Yang, Xin Li, Zhenfeng Li, Qiang Yang Department of Orthopedics, Qilu Hospital of Shandong University, China, Jinan, China
12:00	OP11.4	**The Prophylactic Antibiotic Regimens in Tumor Surgery (PARITY) International Randomized Controlled Trial: Completion of enrollment and preparation for publication** Michelle Ghert PARITY Investigators McMaster University, Hamilton, Canada
12:10		**Discussion**

11:30 - 12:30 N. SKALKOTAS HALL

PLATFORM SESSION 12: FUNCTIONAL RESULTS AND QUALITY OF LIFE 2 - AMPUTATION AND REHABILITATION

Moderators: **Patricia Bonilla Huertas** (Panama) • **Brian Brigman** (United States)

11:30	IL12	**Introductory Lecture: Complications, function and quality of life of limb salvage and amputation for tumors** Andreas F. Mavrogenis First Department of Orthopaedics, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece
11:42	OP12.1	**Functional results of arthroplasty vs arthrodesis reconstruction after distal radius resections** Vishnu Ramanujan, Anand Raja, Chandrakumar Krishnan, Mayilvahanan Natrajan Cancer Institute (WIA), Adyar, Chennai, India
11:48	OP12.2	**Reconstruction of proximal humeral defects after wide resection of tumors - A preliminary study of three reconstructive procedures** Ting Yuan, Hongyi Zhu, Fan Yang, Hanqiang Jing, Zhaoyuan Zhang, Qingcheng Yang Department of Orthopedic Surgery, Shanghai Jiao Tong University Affiliated Sixth People's Hospital, Shanghai, China

11:54	OP12.3	**Amputation for extremity sarcoma: Indications and outcomes** Maya Kirilova[1], Alexander Klein[1], Lars Lindner[2], Barbara Zollner[3], Thomas Knösel[4], Andrea Baur-Melnyk[5], Volkmar Jansson[1], Hans Roland Dürr[1] [1]University Hospital Lmu Munich, Orthopaedic Oncology, Department of Orthopaedics, Physical Medicine and Rehabilitation, Munich, Germany [2]University Hospital LMU Munich, Department of Oncology, Munich, Germany [3]University Hospital LMU Munich, Department of Radiation Oncology, Munich, Germany [4]University Hospital LMU Munich, Institute of Pathology, Munich, Germany [5]University Hospital LMU Munich, Department of Radiology, Munich, Germany
12:00	OP12.4	**The functional outcomes and complications after en bloc excision for giant cell tumor of the distal radius: Comparison of osteoarticular allograft and three-dimensional-printed prosthesis** Yitian Wang, Li Min, Yong Zhou, Yi Luo, Minxun Lu, Chongqi Tu, Fan Tang, Jie Wang, Yuqi Zhang Department of Orthopedics, West China Hospital, Sichuan University, Chengdu, China
12:06	OP12.5	**Single-stage osseointegrated reconstruction and rehabilitation of lower limb amputees** William Lu[1], Munjed Al Muderis[1,2] [1]Osseointegration Group of Australia, Sydney, Australia [2]Macquarie University Hospital, Sydney, Australia
12:12		**Discussion**

12:45 - 13:15 BANQUET HALL

LUNCHEON SEMINAR (Industry Sponsored, further information on page 167)

13:30 - 14:00 BANQUET HALL

PRESIDENTIAL LECTURE 2
Chairperson: **Francis Hornicek** (United States)

Education and mentorship in musculoskeletal oncology
Pietro Ruggieri
Department of Orthopaedics and Orthopaedic Oncology, University of Padova, Padova, Italy

14:30 - 14:30 BANQUET HALL

LECTURE 1
Chairperson: **George Douglas Letson** (United States)

Artificial intelligence in Medical Imaging
Bradley Erickson
Mayo Clinic, Rochester, United States

14:30-15:30 BANQUET HALL

PLATFORM SESSION 13: INNOVATIVE TREATMENTS

Moderators: **Xiaohui Niu** (China) • **Luke Johnson** (Australia)

14:30	IL13	**Osteogenesis induced by a three-dimensional Bioimplant composed of demineralized bone matrix, collagen, hydroxiapatite and bone marrow derived cells in massive bone defects. An experimental study** Carlos E. Cuervo Lozano Department of Orthopaedic Oncology, Hospital Universitario Monterrey, Nuevo Leon, Mexico
14:42	OP13.1	**Immediate, all internal distraction osteogenesis and bone transport after tumor resection** Nadine Williams, Alex Mierke, Omar Ramos, Lee Zuckerman Loma Linda University Medical Center, Department of Orthopaedic Surgery, Loma Linda, USA
14:48	OP13.2	**Knee joint preservation surgery using microwave ablation technology** Qingyu Fan Fourth Military Medical University, China, Xi'an, China
14:54	OP13.3	**Does extracorporeal radiation recycled autograft offer a good option for osteo-articular reconstruction in proximal ulna tumors?** Manit Gundavda, Manish Agarwal, Rajeev Reddy P.D. Hinduja Hospital And MRC, Mumbai, India
15:00	OP13.4	**The West China Hospital femur classification: A retrospective analysis of 237 patients for fibrous dysplasia of the femur** Yitian Wang, Li Min, Yong Zhou, Yi Luo, Minxun Lu, Chongqi Tu, Fan Tang Department of Orthopedics, West China Hospital, Sichuan University, Chengdu, China
15:06	OP13.5	**Innovative platform for 3D surgical planning and execution of bone tumor resections and complex osteotomies– 140 case studies review** Solomon Dadia, Amir Sternheim, Yair Gortzac, Ortal Segal, Omri Maroz, Yehuda Kollender Tel Aviv Medical Center, Tel Aviv, Israel
15:12	OP13.6	**Development of fluorescent assisted margin assessment for sarcoma** Brian Brigman Department of Orthopaedic Surgery, Duke University School of Medicine, Durham, United States
15:18		**Discussion**

14:30-15:30 N. SKALKOTAS HALL

PLATFORM SESSION 14: JOINT-SPARING SURGERY

Moderators: **Saminathan Suresh Nathan** (Singapore) • **Eduardo Botello** (Chile)

14:30	IL14	**Introductory Lecture: The Advances of limb-sparing surgery in musculoskeletal oncology** Apichat Asavamongkolkul Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

14:42	OP14.1	**3D printed cutting jigs for malignant bone tumour resections** Pramod Chinder[1], Suraj Hindiskere[1], Srinath Doddarangappa[1], Sohan Raghavendra[2] [1]HCG Hospital, Bangalore, Bangalore, India [2]The Yellow Ribbon, Karnataka, India
14:48	OP14.2	**Intra-articular soft-tissue sarcoma of the knee – Extra-articular resection and tumor endoprosthetic reconstruction or primary amputation? A retrospective report on eight cases** Markus Nottrott[1], Arne Streitbürger[1], Georg Gosheger[2], Wiebke Guder[1], Gregor Hausschild[2], Jendrik Hardes[1] [1]Division of Musculoskeletal Oncology, University Hospital Essen, Essen, Germany [2]Department of Orthopedics and Tumororthopedics, University Hospital Münster, Münster, Germany
14:54	OP14.3	**Combined massive allograft and vascularized fibula reconstructions for limb-sparing and joint preservation surgery in lower extremity bone sarcomas in children** Bart Kowalczyk, Krzysztof Miklaszewski, Anna Kuźnik-Buziewicz, Paweł Maleta, Andrzej Pawelec, Marcin Karlikowski, Jakub Danielak Orthopedic Department, University Children's Hospital of Krakow, Krakow, Poland
15:00	OP14.4	**Tumor reconstruction with intercalary endoprostheses: Complication analysis** Jennifer Thomson, Joseph Ippolito, Kathleen Beebe, Francis Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Montclair, United States
15:06	OP14.5	**Acetabular reconstruction using a pedestal acetabular endoprosthesis for pelvic malignancies; The Royal Orthopaedic Hospital experience** Martin Lowe, Lee M. Jeys, Michael Parry Royal Orthopaedic Hospital Birmingham, Birmingham, United Kingdom
15:12	OP14.6	**Current role for A1 Rotationplasty (A1R) in distal femur sarcomas** Marco Manfrini, Costantino Errani, Laura Campanacci, Marco Colangeli, Massimiliano De Paolis, Davide Donati Istituto Ortopedico Rizzoli, Bologna, Italy
15:18		**Discussion**

14:30 -15:30 MC2 HALL

PLATFORM SESSION 15: PELVIC TUMORS 1

Moderators: **Vivek Ajit Singh** (Malaysia) • **Jose Casanova** (Portugal)

14:30	IL15	**Introductory Lecture: Evolution of prosthetic reconstruction in pelvis** Wei Guo Musculoskeletal Tumor Center, Director of Orthopaedic Oncology Lab, People's Hospital, Peking University, Beijing, China

14:42	OP15.1	**Reconstruction with a novel combined hemipelvic endoprosthesis after resection of periacetabular tumors involving the sacroiliac joint: A report of 25 consecutive cases** Bo Wang The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
14:48	OP15.2	**Pedicle screw-rod reconstruction for type 1 pelvic resection: Intermediate outcome** Nor Faissal Yasin, Ahmed Elhadi Siddig, Vivek Ajit Singh National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), University of Malaya, Kuala Lumpur, Malaysia
14:54	OP15.3	**Modified Harrington procedure for peri-acetabular bone tumors utilizing interventional radiology and bone grafting: A case series** Jungo Imanishi, Ken Nakazawa, Tomoaki Torigoe, Yasuo Yazawa Saitama Medical University International Medical Center, Hidaka, Japan
15:00	OP15.4	**3D printed modular hemipelvic endoprosthetic reconstruction following periacetabular tumor resection – Preliminary results from 140 consecutive cases** Tao Ji, Yidan Zhang, Xiaodong Tang, Rongli Yang, Wei Guo Peking Uiversity, People's Hospital, Beijing, China
15:06	OP15.5	**Clinical results and quality of life after reconstruction following sacrectomy for primary bone malignancy** Juha Kiiski[1], Hannu Kuokkanen[2], Minna Kääriäinen[1], Ilkka Kaartinen[1], Toni-Karri Pakarinen[1], Minna Laitinen[2] [1]Tampere University Hospital, Tampere, Finland [2]Helsinki University Hospital, Helsinki, Finland
15:12	OP15.6	**"Homolateral Femur Rotation-Lengthening with Allograft Transplantation Technique" as a biological reconstruction option for huge defects after pelvic tumor resection: Long-term outcomes of 9 consecutive cases** Hairong Xu, Yuan Li, Xiaohui Niu Beijing Ji Shui Tan Hospital, Beijing, China
15:18		**Discussion**

15:30 - 16:30	**ISOLS GENERAL ASSEMBLY**	BANQUET HALL
16:30 - 17:00	**COFFEE BREAK / E-POSTERS VIEWING**	EXHIBITION AREA

17:00 - 18:00 BANQUET HALL

PLATFORM SESSION 16: LIMB SALVAGE IN CHILDREN

Moderators: **Rodolfo Capanna** (Italy) • **Andrzej Szafranski** (Poland)

17:00	IL16	**Introductory Lecture: Complications of limb salvage surgery in children** Harzem Özger Istanbul Orthopedic Oncology Group, Istanbul, Turkey
17:12	OP16.1	**Vascularized fibula graft after bone tumor resection in pediatric age: Old or new technique?** Giovanni Beltrami[1], Guido Scoccianti[2], Pierluigi Cuomo[2], Luca Delcroix[3], Francesca Totti[2], Marco Innocenti[3], Domenico Andrea Campanacci[2], Rodolfo Capanna[4] [1]Department Pediatric Orthopedic Oncology, Firenze, Italy, [2]Department Orthopedic Oncology, Firenze, Italy, [3]Department Microsurgery, Firenze, Italy, [4]Department Orthopedic, Pisa, Italy
17:18	OP16.2	**Limb salvage using non-hinged endoprosthesis and staged distraction osteogenesis for children with distal femoral malignant tumors** Tao Ji, Yi Yang, Dasen Li, Xiaodong Tang, Wei Guo Peking Uiversity, People's Hospital, Beijing, China
17:24	OP16.3	**Allograft reconstruction alone has an increased rate of amputation and worse functional outcome when compared with vascularized fibular reconstruction in tibial reconstruction in pediatric patients** Amirhossein Misaghi[1], Peter Rose[1], Karim Bakri[2], Anthony Stans[1], Steven Moran[2,1], Matthew Houdek[1], Franklin Sim[1] [1]Mayo Clinic Department of Orthopaedic Surgery, Rochester, United States [2]Mayo Clinic Division of Plastic Surgery, Rochester, United States
17:30	OP16.4	**Internal hemipelvectomy in pediatric patients, a tertiary care hospital experience** Masood Umer, Javeria Saeed Aga Khan University Hospital, Karachi, Pakistan
17:36	OP16.5	**Proximal femoral endoprosthetic replacements in the skeletally immature** Jonathan Stevenson, Charles Baird, Benjamin Jacques, Michael Parry, Lee M. Jeys, Robert Grimer Royal Orthopaedic Hospital, Birmingham, United Kingdom
17:42		**Discussion**

17:00 - 18:00 N. SKALKOTAS HALL

PLATFORM SESSION 17: METASTASIS 1

Moderators: **Keith Hosking** (South Africa) • **Huseyin Yusuf Yildiz** (Turkey)

17:00	IL17	**Introductory Lecture: Minimally Invasive Percutaneous Ablation-Osteoplasty-Reinforcement-Internal Fixation (AORIF) for osteolytic metastatic lesions: Rationale and technical considerations for a new paradigm** Francis Lee Department of Orthopaedics & Rehabilitation, Yale School of Medicine, Yale New Haven Hospital, New Haven, United States

17:12	OP17.1	**Plasma YKL-40 and IL-6 are prognostic for survival after surgery for metastatic bone disease of the extremities** Michala Skovlund Sørensen[1], Thomas Colding-Rasmussen[1], Peter Frederik Horstmann[1], Klaus Hindsø[2], Christian Dehlendorff[3], Julia Sidenius Johansen[4], Michael Mørk Petersen[1] [1]Musculoskeletal Tumour Section, Department of Orthopaedic Surgery, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark [2]Paediatric section, Department of Orthopedic Surgery, Rigshospitalet, University of Copenhagen, Copenhagen, Danmark [3]Unit of Statistics and Pharmacoepidemiology, Danish Cancer Society Research Center, Copenhagen, Denmark [4]Departments of Oncology and Medicine, Herlev and Gentofte Hospital, University of Copenhagen, Herlev, Danmark
17:18	OP17.2	**Acrometastasis: Is lung carcinoma still the most common primary lesion?** Alysia Kemp, John Maedwell, Robert Satcher, Justin Bird, Patrick Lin, Valerae Lewis, Bryan Moon The University of Houston MD Anderson Cancer Center, Houston, United States
17:24	OP17.3	**Usefulness of CT axial imaging in the early diagnosis of femoral metastatic bone tumors** Hirotaka Yonezawa, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Yuta Taniguchi, Yoshihiro Araki, Sei Morinaga, Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Kanazawa University Graduate School of Medical Sciences, Kanazawa, Japan
17:30	OP17.4	**Comparative study between Tc99M skeletal scintigraphy, PET/CT scan and whole body MRI for detecting skeletal metastasis in patients with osteosarcoma and Ewing's sarcoma** Aayush Aryal, Shah Alam Khan, Venkatesan Sampath Kumar, Shivanand Gamangatti, Shamim Ahmad Shamim All India Institute of Medical Sciences, New Delhi, India
17:36	OP17.5	**Comparison of porous tantalum acetabular implants versus harrington reconstruction for metastatic disease of the acetabulum** Joshua Johnson[1], Matthew Houdek[1], Peter Rose[1], Matthew Abdel[1], Jay Wunder[2], Anthony Griffin[2], Peter Ferguson[1], Benjamin Wilke[3], David Lewallen[1] [1]Mayo Clinic, Rochester, United States [2]University Musculoskeletal Oncology Unit, Department of Surgical Oncology, Mount Sinai Hospital, Toronto, Canada [3]Mayo Clinic, Jacksonville, United States
17:42	OP17.6	**Minimally invasive transpedicular intra-lesional tumor resection for the management of metastatic lumber spinal tumor** Ukei Anazawa, Itsuo Watanabe, Ken Ninomiya, Satoshi Nori, Hiraku Hotta, Tomohisa Tabata, Tateru Shiraishi, Ryoma Aoyama Tokyo Dental College Ichikawa General Hospital, Ichikwa, Japan

17:48	OP17.7	**An analysis of the International Bone Metastasis Registry Data** Rikard Wedin[1], Koichi Ogura[2], Mark Puhaindran[3], Mina Laitinen[4], Michala Skovlund Sørensen[5], Andrea Piccioli[7], Silvia Spinelli[7], Jonathan Forsberg[6] [1]Orthopaedics, Karolinska University Hospital, Stockholm, Sweden [2]Orthopaedic Oncology, National Cancer Center, Tokyo, Japan [3]Orthopaedic Oncology, Hand and Microvascular Surgery, National University Hospital, Singapore [4]Orthopaedic Oncology, Helsinki University Central Hospital, Helsinki, Finland [5]Orthopaedic Oncology Rigshospitalet, Copenhagen, Denmark [6]Department of Orthopedic Surgery, Johns Hopkins University, Baltimore, United States [7]Italian Orthopaedic Society Bone Metastasis Study Group, Rome, Italy
17:54		**Discussion**

17:00 - 18:00 MC2 HALL

PLATFORM SESSION 18: VARIOUS

Moderators: **Jun Nishida** (Japan) • **Claudia Di Bella** (Australia)

17:00	IL18	**Introductory Lecture: Computer-assisted surgery in orthopaedic oncology. Indications, problems and results in 210 patients** Luis Aponte-Tinao Italian Hospital of Buenos Aires, Caba, Argentina
17:12	OP18.1	**Effective nutritional status screening in orthopaedic oncology patients and postoperative complications** Vivek Ajit Singh, Eu Wei Cheong, Nor Faissal Yasin University Malaya Medical Center, Petaling Jaya, Malaysia
17:18	OP18.2	**Investigating the risk of malignant transformation of benign giant cell tumor of bone in patients treated with and without Denosumab therapy** Krista Goulding[1], Abdulrahman Alaseem[2], Anas Nooh[2], Annie Arteau[3], Norbert Dion[3], Jay S. Wunder[4], Peter Ferguson[4], Sophie Mottard[5], Marc Isler[5], Motaz Alaqeel[2], Michelle Ghert[6], Joel M. Werier[7], Hesham Abdelbary[7], Robert Turcotte[2] [1]Department of Orthopaedic Surgery, Mayo Clinic, Phoenix, USA [2]Division of Orthopaedics, Department of Surgery, McGill University, Montreal, Canada [3]CHU de Québec-Université Laval-Hôtel-Dieu, Quebec, Canada [4]Mount Sinai Hospital, University of Toronto, Toronto, Canada [5]Division of Orthopedic Surgery, Maisonneuve-Rosemont Hospital, Montreal, Canada [6]Division of Orthopaedics, Department of Surgery, McMaster University, Hamilton, Canada [7]University of Ottawa, Ottawa, Canada
17:24	OP18.3	**Biomechanical aspects of anatomical pelvic reconstructions by means of 3D printing technology on the basis of 30 sarcoma patients with 5 year follow up - Is "fast track" possible?** Daniel Kotrych[1], Andrea Angelini[2], Pietro Ruggieri[2], Andrzej Szafrański[1], Andrzej Bohatyrewicz[1] [1]Center for Diagnostics and Therapy of Hereditary Tumors, Department of Orthopaedics, Traumatology and Orthopaedic Oncology, Pomeranian Medical University of Szczecin, Szczecin, Poland [2]Department of Orthopaedic Oncology, University of Padova, Padova, Italy

17:30	OP18.4	**Oncological implants and periprosthetic bone loss - can we successfully cope with the problem?** Daniel Kotrych, Paweł Ziętek, Andrzej Bohatyrewicz Center for Diagnostics and Therapy of Hereditary Tumors, Department of Orthopaedics, Traumatology and Orthopaedic Oncology, Pomeranian Medical University of Szczecin, Poland
17:36	OP18.5	**Occupational injuries among orthopaedic oncology surgeons** Abdulrahman Alaseem[1], Krista Goulding[2], Robert Turcotte[1] [1]Division of Orthopaedics, Department of Surgery, Mcgill University, Montreal, Canada [2]Division of Orthopaedic Surgery, Mayo Clinic, Phoenix, United States
17:42	OP18.6	**Safety of a restrictive allogeneic blood transfusion strategy in patients with extremity sarcomas** Woo Young Jang, Jong Hoon Park Korea University Anam Hospital, Seoul, South Korea
17:48		**Discussion**

18:00 - 19:00 BANQUET HALL

CROSSFIRE SESSION 2: CEMENTED VS UNCEMENTED MEGAPROSTHESIS
Moderator: **Toshifumi Ozaki** (Japan)

Cemented Megaprosthesis Nicola Fabbri Memorial Sloan Kettering Cancer Center, Department of Surgery, Weill College of Medicine, Cornell University, New York, United States	VS	**Uncemented Megaprosthesis** Francis Hornicek Department of Orthopaedic Surgery, David Geffen School of Medicine at UCLA, Los Angeles, United States

Scientific Programme

FRIDAY | SEPTEMBER 13TH, 2019

08:00 - 09:00 BANQUET HALL

FLASH SESSION 9: DISASTERS IN LIMB SALVAGE • PELVIC TUMORS

Moderators: **Andrea Angelini** (Italy) • **Ka Lok Mak** (Hong Kong)

Disasters in limb salvage

08:00	FP9.1	**Safety of distraction osteogenesis in osseous neoplasms: A review of 38 patients undergoing distraction osteogenesis for reconstruction of large osseous neoplastic defects** Daniel Eduardo Prince, Eugenia Schwartzkopf, Molly Ann Friel Klima Memorial Sloan Kettering Cancer Center, New York, United States
08:03	FP9.2	**Fighting megaprosthetic infections: What are the chances of winning?** Manish Agarwal, Manit Gundavda, Rajeev Reddy, Ameya Katariya P. D. Hinduja Hospital And MRC, Mumbai, India

Pelvic tumors

08:06	FP9.3	**LUMIC endoprosthetic reconstruction after periacetabular tumor resection: Mid-term results** Bulent Erol, Evrim Sirin, Mert Osman Topkar, Fevzi Saglam, Said Erkam Baykan, Servet Igrek Marmara University Hospital, Istanbul, Turkey
08:09	FP9.4	**Short-term outcome of hemipelvic reconstruction for periacetabular tumor: Comparison of three-dimensional (3D) printed prosthesis and modular prosthesis** Li Min, Jie Wang, Yitian Wang, Yi Luo, Yong Zhou, Chongqi Tu Department of Or Thopedics, West China Hospital, Sichuan University, Chengdu, China
08:12	FP9.5	**Soft tissue reconstruction after pelvic amputation: The efficacy and reliability of free fillet flap reconstruction** Juha Kiiski[1], Minna K. Laitinen[2], Louis-Romée Le Nail[3], Hannu O. Kuokkanen[2], Francis Peart[4], Philippe Rosset[3], Aurélie Bourdais-Sallot[3], Lee M. Jeys[4], Michael C. Parry[4] [1]Tampere University Hospital, Tampere, Finland, [2]Helsinki University Hospital, Helsinki, Finland [3]Tours University Hospital, Tours, France, [4]Royal Orthopaedic Hospital, Birmingham, UK
08:15	FP9.6	**Restoration of hip joint using vascularized and recycled hybrid bone graft after resection of acetabular bone tumor** Koichiro Ihara, Takatomo Mine, Hiroyuki Kawamura, Ryutaro Kuriyama, Yasuhiro Tominaga NHO Kanmon Medical Center, Shimonoseki, Japan

08:18	FP9.7	**Can the ACS-NSQIP surgical risk calculator predict post-operative complications in patients undergoing sacral tumor resection?** Mario Hevesi[1], Jay Wunder[2], Anthony Griffin[2], Meagan Tibbo[1], Peter Rose[1], Joshua Johnson[1], Peter Ferguson[2], Matthew Houdek[1] [1]Mayo Clinic, Rochester, United States, [2]University Musculoskeletal Oncology Unit, Department of Surgical Oncology, Mount Sinai Hospital, Toronto, Canada
08:21	FP9.8	**Are there any differences between primary and secondary chondrosarcoma of the pelvis in terms of clinical characteristics and oncologic outcome?** Jie Zang Musculoskeletal Tumor Center, Peking University, People's Hospital, Beijing, China
08:24	FP9.9	**Radiological classification and predisposing factors of venous tumor thrombus in pelvic osteosarcoma: A mono-institutional retrospective study of 123 treatment-naïve cases** Haijie Liang, Yi Yang, Tao Ji, Rongli Yang, Xiaodong Tang, Taiqiang Yan, Wei Guo Peking University People's Hospital, Beijing, China
08:27	FP9.10	**Periacetabular resection at a single institution: Do outcomes differ by method of reconstruction?** Jennifer Thomson, Joseph Ippolito, Steven Riverso, Kathleen Beebe, Francia Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States
08:30	FP9.11	**What factors determine the success of limb-salvage surgery in patients with pelvic sarcomas involving the acetabulum?** Tomohiro Fujiwara, Koichi Ogura, Alexander Christ, Mohamed Yakoub, John Healey, Nicola Fabbri Memorial Sloan-Kettering Cancer Center, New York, United States
08:33	FP9.12	**Lumic endoprosthetic reconstruction for periacetabular defect after surgery for bone tumour** Stefano Bastoni, Maria Serena Bartoli, Fabio Luca Giardina, Eleonora Marini, Primo Andrea Daolio Gaetano Pini Institute, Milano, Italy
08:36	FP9.13	**Leaving half the acetabulum in pelvic resections improves hip function - Is there a need to revise pelvic resections?** Abdul Majeed, Shah A. Khan, Venkatesan S. Kumar All India Institute of Medical Sciences, New Delhi, India
08:39	FP9.14	**Computed tomography-assisted navigation for resection of iliosacral bone sarcomas: What is the evidence?** Mohamed Yakoub, Patrick Boland, John Healey, Nicola Fabbri Orthoapedic Surgery, Memorial Sloan Kettering Cancer Center, New York, United States
08:42	FP9.15	**Surgical treatment of pelvic bone tumors using 3D-printed implants. Experience of single institution** Evgeny Sushentsov, Elmar Musaev, Denis Sofronov, Mamed Aliev N.N. Blokhin Cancer Research Center, Moscow, Russian Federation
08:45		**Discussion**

08:00 - 09:00 N. SKALKOTAS HALL

FLASH SESSION 10: PROSTHETIC RECONSTRUCTION 1

Moderators: **Andreas Leithner** (Austria) • **Francisco Linares** (Colombia)

08:00	FP10.1	**Reconstruction of large segemental bone defect with 3D-printed custom-made tumor prosthesis** Yidan Zhang, Yi Yang, Haijie Liang, Zhiye Du, Tao Ji, Xiaodong Tang, Rongli Yang, Jun Wang, Wei Guo Peking University People's Hospital, Beijing, China
08:03	FP10.2	**Use of a proximal humeral cap prosthesis for shoulder reconstruction following a tikhoff-linberg resection** Adam Tagliero, Brandon Bukowski, Peter Rose, Jonathan Barlow, Mark Morrey, Joaquin Sanchez-Sotelo, Matthew Houdek Mayo Clinic, Rochester, United States
08:06	FP10.3	**Functional outcomes of the reconstruction of the proximal humerus by reverse shoulder arthroplasty after tumour resection** Nong Lin, Binghao Li, Zhaoming Ye The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China
08:09	FP10.4	**Modular distal tibial endoprosthetic replacement in reconstruction of the distal tibia in bone tumours – The Cape Town experience** Keith Hosking, Thomas Hilton, Neil Campbell CORU, Life Orthopaedic and Groote Schuur Hospitals, University of Cape Town, Cape Town, South Africa
08:12	FP10.5	**Constrained versus unconstrained shoulder arthroplasty in humeral resections reconstructed with megaprostheses** Scott Sommerville[1], Will Cundy[2], Miford McArthur[2], Phillip Rowell[1], Ian Dickinson[1] [1]The Wesley Hospital, Auchenflower, Australia [2]The Princess Alexandra Hospital, Brisbane, Australia
08:15	FP10.6	**Additive manufacturing in limb salvage: An engineering perspective** Neil Campbell[1], Keith Hosking[2], Thomas Hilton[2,3] [1]LRS Implants, Cape Town, South Africa [2]Cape Orthopaedic Reconstructive Unit (CORU), Cape Town, South Africa [3]Department of Orthopaedic Surgery, University of Cape Town (UCT), Cape Town, South Africa
08:18	FP10.7	**Custom stem-sideplate preserves at-risk hip joint during endoprosthetic reconstruction of the femur** Alexander Christ[1], Tomohiro Fujiwara[1], Nicholas Horsmon[2], John Healey[1] [1]Memorial Sloan-kettering Cancer Center, New York, United States [2]Zimmer Biomet, Warsaw, United States
08:21	FP10.8	**Functional outcome after tumour resection and total humeral replacement: A systematic review** Oluwaseyi K. Idowu[1], Mohamad Nasser[1], Michelle Maden[1], Adesegun T Abudu[2] [1]Edge Hill University, Ormskirk, United Kingdom [2]Royal Orthopaedic Hospital, Birmingham, United Kingdom

08:24	FP10.9	**Long-term survival analysis of cemented vs. cementless distal femur replacement reveals different outcomes between oncological and non-oncological patients** Kevin Staats[1], Alexandra Kaider[2], Irene K. Sigmund[1], Klemens Vertesich[1], Branden Sosa[3], Bernd Kubista[1], Philipp T. Funovics[1], Reinhard Windhager[1] [1]Deparment of Orthopedics and Trauma Surgery, Medical University of Vienna, Vienna, Austria [2]Centre for Medical Statistics, Informatics, and Intelligent Systems-Section for Clinical Biometrics, Medical University of Vienna, Vienna, Austria [3]Arthroplasty Research Lab, Hospital for Special Surgery, New York, United States
08:27	FP10.10	**Hydroxyapatite coated collars on cemented massive endoprosthesis show poor osteointegration when used in revision surgery** Benjamin Davies[1], Rajiv Kaila[1], Loukas Andritsos[1], Chrisitan Gray Stephens[1], Gordon Blunn[2], Craig Gerrand[1], Panagiotis Gikas[1], Andrew Johnston[1] [1]Royal National Orthopaedic Hospital, Stanmore, United Kingdom [2]School of Pharmacy and Biomedical Sciences, University of Portsmouth, Portsmouth, UK
08:30	FP10.11	**Using pre-operative planning technology for custom pelvic implants** Richard Boyle, Daniel Franks Royal Prince Alfred Hospital Sarcoma Unit, Sydney, Australia
08:33	FP10.12	**Can the CPS fixation system avoid aseptic loosening of reconstruction prostheses?** Gwen Sys, An-Sofie Van de Kelft, Alec Duinslaeger Ghent University Hospital, Ghent, Belgium
08:36	FP10.13	**Proximal femur endoprosthesis as salvage in elderly with failed hip fracture surgery** Prashant Narhari, Azuhairy Azid Hospital Pulau Pinang, Georgetown, Malaysia
08:39	FP10.14	**Two stage revision for prosthesis infection in patients with bone tumor treated with megaprosthesis** Mustafa Onur Karaca, Abdullah Merter, Mehmet Batu Ertan, Batu Malatyalı, Kerem Başarır, Hüseyin Yusuf Yıldız Ankara University Dept. of Orthopedics and Traumatology, Ankara, Turkey
08:42	FP10.15	**Total reconstruction of the patellar tendon using Trevira® tube** João Freitas, Francisco Fernandes, Sandra Santos, Ruben Fonseca, José Casanova Coimbra University Hospital, Coimbra, Portugal
08:45	FP10.16	**Constrained reverse shoulder arthroplasty for the treatment of proximal humerus tumors** Rıza Mert Çetik, Sancar Bakırcıoğlu, Mehmet Ayvaz, A. Mazhar Tokgözoğlu Hacettepe University Hospital, Department of Orthopedics and Traumatology, Ankara, Turkey
08:48		**Discussion**

09:00 - 10:00 BANQUET HALL

CROSSFIRE SESSION 3: SPINOPELVIC TUMORS: LIMB SALVAGE VS AMPUTATION

Moderator: **Panayiotis J. Papagelopoulos** (Greece)

Limb Salvage	VS	Amputation
Wei Guo Musculoskeletal Tumor Center, People's Hospital, Peking University, Beijing, China		Peter Rose Mayo Clinic, Rochester, United States

10:00 - 10:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

10:30 - 11:30 BANQUET HALL

PLATFORM SESSION 19: METASTASIS

Moderators: **Costantino Errani** (Italy) • **Olga Savvidou** (Greece)

10:30	IL19	**Introductory Lecture: When do patients with bone metastases actually break their femur? A CT-based finite element analysis of patients who fractured** Amir Sternheim National Unit of Orthopaedic Oncology, Tel-Aviv University, Tel-Aviv Medical Center, Israel
10:42	OP19.1	**What have we learned from the PATHFx validation studies? An analysis of 2,559 patients with metastatic bone disease** Ashley Anderson[1], Rikard Wedin[2], Michala Sorensen[6], Kose Ozkan[3], Z. Karadag[3], Maria Spinelli[8], Andrea Piccioli[7], Patrick Boland[5], Nicola Fabbri[5], John Healey[5], Jonathan Forsberg[1] [1]Walter Reed National Military Medical Center, Department of Surgery Division of Orthopaedics, Bethesda, United States [2]Karolinska University Hospital, Department of Orthopaedics, Stockholm, Sweden [3]Istanbul Medeniyet University, Department of Orthopaedics and Traumatology, Istanbul, Turkey [4]National Cancer Center, Department of Orthopaedic Oncology, Tokyo, Japan [5]Memorial Sloan-Kettering Cancer Center, Department of Surgery, Division of Orthopaedics, New York, United States [6]Orthopaedic Oncology Rigshospitalet, Copenhagen, Denmark [7]Italian Orthopaedic Society Bone Metastasis Study Group, Rome, Italy [8]Orthopaedic and Traumatoloy Unit "Fatebene Fratelli" Hospital - Isola Tiberina, Rome, Italy
10:48	OP19.2	**Current approach in metastatic disease: Indications and results in 89 cases** Andrea Angelini, Elisa Pala, Giulia Trovarelli, Alberto Crimì, Antonio Berizzi, Pietro Ruggieri Department of Orthopedics and Orthopedic Oncology, University of Padova, Padova, Italy

10:54	OP19.3	**Which indeterminate pulmonary nodules represent lung metastases in primary bone sarcoma?** Kim Tsoi, Martin Lowe, Yusuke Tsuda, Dominic Tan, Johnathan Lex, Scott Evans, Michael Parry, Jonathan Stevenson, Lee M. Jeys Royal Orthopaedic Hospital, Birmingham, United Kingdom
11:00	OP19.4	**Surgical management of metastatic lesions of the proximal femur with pathological fractures using intramedullary nailing or endoprosthetic replacement** Zeping Yu, Hong Duan, Xiang Fang West China Hospital, Sichuan University, Chengdu, China
11:06	OP19.5	**Photodynamic bone stabilization system for metastatic lesions of the upper limb: Palliative surgery or adjuvant treatment?** Ugo Albertini[1], Michele Boffano[1], Tiziana Robba[2], Nicola Ratto[1], Pietro Pellegrino[1], Andrea Conti[1], Elena Boux[1], Alda Borre'[2], Raimondo Piana[1] [1]Oncologic Orthopaedic Surgery AOU Città della Salute e della Scienza Torino, Torino, Italy [2]Imaging Department AOU Città della Salute e della Scienza Torino, Torino, Italy
11:12	OP19.6	**Validation of the open-source PATHFx v2.0 tool for survival estimation of patients with skeletal metastases using two external patient populations** Archie Overmann[1], Panagiotis Tsagkozis[2], Rikard Wedin[2], Jonathan Forsberg[1] [1]Department of Orthopaedic Surgery, Walter Reed National Military Medical Center, Bethesda, United States [2]Department of Molecular Medicine and Surgery, Karolinska Institutet, Solna, Sweden
11:18	OP19.7	**Treatment of metastatic disease at the appendicular skeleton: Does surgical decision making impact long-term survival or complication rates?** Joseph Ippolito, Jennifer Thomson, Valdis Lelkes, Kathleen Beebe, Francis Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States
11:24		**Discussion**

10:30 - 11:30 N. SKALKOTAS HALL

PLATFORM SESSION 20: PELVIC TUMORS 2

Moderators: **Davide Maria Donati** (Italy) • **Marko Bergovec** (Austria)

10:30	IL20	**Introductory Lecture: Pelvic resection and reconstruction: Achievements and challenges** Mary O'Connor Center for Musculoskeletal Care at Yale School of Medicine and Yale New Haven Hospital, Yale School of Medicine, New Haven, United States
10:42	OP20.1	**Reconstruction methods following pelvic resection: Meta-analysis** Jennifer Thomson, Joseph Ippolito, Kamil Amer, Nemesis Hazim-Liriano, Kathleen Beebe, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States

10:48	OP20.2	**Outcomes of sacral tumor resection based on the Mayo Clinic Classification System** Peter Rose, Matthew Houdek, Steven Moran, Karim Bakri, Eric Dozois, Kellie Mathis, Thomas Bower, Michael Yaszemski, Franklin Sim Mayo Clinic, Rochester, United States
10:54	OP20.3	**A novel tripod percutaneous reconstruction technique in peri-acetabulum lesion caused by metastatic cancer** Rui Yang, Dennis Murphy, Jichuan Wang, Vanessa Charubhumi, Jana Fox, Milan Sen, Bang Hoang, David Geller Montefiore Medical Center, Bronx, United States
11:00	OP20.4	**Single institution review of concept strategy for pelvic resections in tumor patients** Oleg Vyrva, Roman Malik, Yanina Golovina, Dmytro Vatamanitsa Sytenko Institute of Spine and Jointh Pathology, Kharkiv, Ukraine
11:06	OP20.5	**Clinical and functional results of Harrington's procedure on the management of periacetabular malignant lesions, in 89 patients** Gilber Kask[1], Toni-Karri Pakarinen[1], Jyrki Nieminen[2], Minna Laitinen[3] [1]Tampere University Hospital, Tampere, Finland, [2]Coxa Hospital, Tampere, Finland [3]Helsinki University Hospital, Helsinki, Finland
11:12	OP20.6	**Extra-articular resection of the hip for bone tumors: A retrospective study of 33 patients with comparison between pelvis and proximal femoral tumors** Victor Housset, Valérie Dumaine, Philippe Anract, Julien Even, Arnaud Felden, Victoire Cladiere, Antoine Babinet, David Biau Chu Cochin, Paris, France
11:18		**Discussion**

11:30 - 12:30 BANQUET HALL

PLATFORM SESSION 21: SOFT-TISSUE SARCOMAS 1

Moderators: **Mark Scarborough** (United States) • **Robert Nakayama** (Japan)

11:30	IL21	**Introductory Lecture: Soft Tissue Sarcoma: Update on diagnosis and treatment** Philipp Theodor Funovics Department of Orthopaedics and Trauma Surgery, Medical University of Vienna, Vienna General Hospital, Vienna, Austria
11:42	OP21.1	**Leiomyosarcomas of the musculoskeletal system. Therapy and prognosis** Hans Roland Dürr[1], Malik Maghames[1], Lars Lindner[2], Barbara Zollner[3], Thomas Knösel[4], Andrea Baur-Melnyk[5], Volkmar Jansson[1], Alexander Klein[1] [1]University Hospital LMU Munich, Orthopaedic Oncology, Department of Orthopaedics, Physical Medicine and Rehabilitation, Munich, Germany [2]University Hospital LMU Munich, Department of Oncology, Munich, Germany [3]University Hospital LMU Munich, Department of Radiation Oncology, Munich, Germany [4]University Hospital LMU Munich, Institute of Pathology, Munich, Germany [5]University Hospital LMU Munich, Department of Radiology, Munich, Germany

11:48	OP21.2	**Evaluation of prognostic factors for liposarcoma** Yongzhong Wei[1], Qi Zhang[1], Juming Li[1], Jinlong Liu[2] [1]Department of Orthopedic Surgery, The First Affiliated Hospital with Nanjing Medical University, Nanjing, China [2]Department of General surgery, the First Affiliated Hospital with Nanjing Medical University, Nanjing, China
11:54	OP21.3	**Individualising soft tissue sarcoma aftercare with flexible parametric survival modelling** Maria Anna Smolle[1], Michiel van de Sande[2], Dario Callegaro[3], Jay Wunder[4], Andrew Hayes[5], Lukas Leitner[1], Marko Bergovec[1], Per-Ulf Tunn[6], Veroniek van Praag[2], Joannis Panotopoulos[7], Madeleine Willegger[7], Reinhard Windhager[7], Jakob Riedl[8], Michael Stotz[8], Armin Gerger[8], Martin Pichler[8], Herbert Stöger[8], Bernadette Liegl-Atzwanger[9], Josef Smolle[10], Andreas Leithner[1], Alessandro Gronchi[3], Rick Haas[11], Joanna Szkandera[8] [1]Department of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria [2]Department of Orthopaedic Surgery, Leiden University Medical Centre, Leiden, The Netherlands [3]Department of Surgery, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy [4]University Musculoskeletal Oncology Unit, Mount Sinai Hospital, University of Toronto, Toronto, Canada [5]Department of Surgery, Royal Marsden Hospital NHS Foundation Trust, London, UK [6]Sarcoma Centre, HELIOS-Klinikum Berlin-Buch, Berlin, Germany [7]Department of Orthopaedics and Traumatology, Medical University of Vienna, Vienna, Austria [8]Division of Clinical Oncology, Internal Medicine, Medical University of Graz, Graz, Austria [9]Institute of Pathology, Medical University of Graz, Graz, Austria [10]Institute for Medical Informatics, Statistics and Documentation, Medical University of Graz, Graz, Austria [11]Division of Radiotherapy, Netherlands Cancer Institute, Amsterdam, The Netherlands
12:00	OP21.4	**Leiomyosarcomas: Recurrence rates based on tumor depth and treatment modality** Elizabeth Wellings, Meagan Tibbo, Peter Rose, Matthew Houdek Mayo Clinic, Rochester, United States
12:06	OP21.5	**Axial soft tissue sarcoma - Current clinical status in a single institution** Yasuo Yazawa, Tomoaki Torigoe, Jungo Imanishi Saitama Medical University International Medical Center, Hidaka, Japan
12:12	OP21.6	**Evaluation of mutations in codons 41 and 45 of the beta-catenin encoding gene in patients with sporadic desmoid tumors and their association with prognosis** Fábio Elói Pinto, Ademar Lopes, Dirce Carraro, Celso Lopes de Mello, Isabela Werneck Cunha, Suely Nakagawa, Tu Chung Wu, Juliane Comunello A. C. Camargo Cancer Center, São Pauo, Brazil
12:18		**Discussion**

11:30 - 12:30 N. SKALKOTAS HALL

PLATFORM SESSION 22: DIAGNOSTIC IMAGING

Moderators: **Achilleas Chatziioannou** (Greece) • **Doris Wenger** (United States)

11:30	IL22	**Introductory Lecture: The role of PET scan for diagnosis and evaluation of treatment** Sofia Chatziioannou National and Kapodistrian University of Athens, Medical School, Athens, Greece
11:42	OP22.1	**Diagnostic value of tumor-fascia relationship in superficial soft tissue masses on magnetic resonance imaging** Tadashi Iwai[1], Manabu Hoshi[1], Naoto Oebisu[1], Masanari Aono[2], Masatugu Takami[3], Makoto Ieguchi[4], Akiyoshi Shimatani[1], Naoki Takada[1], Yoshitaka Ban[4], Hiroaki Nakamura[1] [1]Department of Orthopedic Surgery, Osaka City University Graduate School of Medicine, Osaka, Japan [2]Department of Orthopedic Surgery, Osaka City General Hospital, Osaka, Japan [3]Department of Orthopedic Surgery, Hanwasumiyoshi General Hospital, Osaka, Japan [4]Department of Orthopedic Surgery, Fuchu Hospital, Izumi, Japan
11:48	OP22.2	**The importance of apparent diffusion coefficient map for differentiation of benign from malignant peripheral nerve sheath tumors** Hiroshi Koike[1], Yoshihiro Nishida[1,2], Shinji Ito[3], Kunihiro Ikuta[1], Hiroshi Urakawa[1,4], Eisuke Arai[1], Tomohisa Sakai[1], Koki Shimizu[1], Naoki Ishiguro[1] [1]Department of Orthopedic Surgery, Nagoya University Hospital, Nagoya, Japan [2]Department of Rehabilitation Medicine, Nagoya University Hospital, Nagoya, Japan [3]Department of Radiology, Nagoya University Hospital, Nagoya, Japan [4]Department of Clinical Oncology and Chemotherapy, Nagoya University Hospital, Nagoya, Japan
11:54	OP22.3	**The value of Thallium-201 scintigraphy and Tc-99m pentavalent dimercaptosuccinic acid in diagnosing and grading chondrosarcoma** Imkyeong Jo[1], Stephen Schilicht[2], John Slavin[3], Claudia Di Bella[4], Gerard Powell[4], Michael Vasimalla[4], Grant Pang[4], Tim Spelman[5], Peter Choong[1,4] [1]Department of Surgery, University of Melbourne, Melbourne, Australia [2]Department of Medical Imaging, St. Vincent's Hospital, Melbourne, Australia [3]Department of Anatomical Pathology, St. Vincent's Hospital, Melbourne, Australia [4]Department of Orthopaedics, St. Vincent's Hospital, Melbourne, Australia [5]Department of Surgery, St. Vincent's Hospital, Melbourne, Australia
12:00	OP22.4	**Combined role of diffusion weighted imaging (DWI) and 18F-FDG PET/CT in predicting histologic response to neoadjuvant chemotherapy in osteosarcoma** Nikita Jain, Shivakumar Swamy S, Pramod S Chinder, Kumar Kallur, Indiresh Desai, Srinath Doddarangappa, Mahesh Kumar, Avinash Kesari, Suraj Hindiskere, Sudhakar Sampangi, Yashaswini Kumaraswamy Health Care Global hospital, Bangalore, India

12:06	OP22.5	**The diagnostic performance of PET/CT in patients with skeletal metastases of unknown primary** Joshua Lawrenz, Hakan Ilaslan, Brian Rubin, Jaymeson Gordon, Collin Haben, Jaiben George, Nathan Mesko, Lukas Nystrom Cleveland Clinic, Cleveland, United States
12:12	OP22.6	**18F-FDG PET-CT versus MRI for detection of skeletal metastasis in Ewing sarcoma** Sarah Bosma[1], Dennis Vriens[2], Hans Gelderblom[3], Michiel van de Sande[1], Sander Dijkstra[1], Hans Bloem[2] [1]Department of Orthopedics, Leiden University Medical Center, Leiden, The Netherlands [2]Department of radiology, Leiden University Medical Center, Leiden, The Netherlands [3]Department of Medical Oncology, Leiden University Medical Center, Leiden, The Netherlands
12:18	OP22.7	**The role of PET-CT in the differential diagnosis of intraosseous cartilaginous tumors** Dan Viola, Akemi Osawa, Renee Zon Fillippi, Reynaldo Jesus-Garcia HIAE - Hospital Israelita Albert Einstein, São Paulo, Brazil; UNIFESP, São Paulo, Brazil
12:24	OP22.8	**F 18 - FDG PET CT in evaluation of response and recurrence in osseous GCT - Our experience in 90 cases** Avinash Kesari, Shivakumar Swamy S, Pramod S Chinder, Kumar Kallur, Indiresh Desai, Srinath Doddarangappa, Mahesh Kumar, Nikita Jain, Suraj Hindiskere, Sudhakar Sampangi, Yashaswini Kumaraswamy Health Care Global hospital, Bangalore, India

12:45 -13:45 BANQUET HALL

LUNCHEON SYMPOSIUM (Industry Sponsored, further information on page 167)

14:00 -15:00 BANQUET HALL

PLATFORM SESSION 23: RECYCLED BONE GRAFT • LOCAL TUMOR ABLATION
Moderators: **Oleg Vyrva** (Ukraine) • **Norio Yamamoto** (Japan)

14:00	IL23	**Introductory Lecture: The history of recycled bone graft** Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan
14:12	OP23.1	**Recycled bone with ECRT, an effective alternate for limb salvage** Praveen Gupta Bhagwan Mahaveer Cancer Hospital & Research Center, Jaipur, India
14:18	OP23.2	**Comparative proteomic profiling and identification of significant markers from high-grade osteosarcoma after cryoablation and irradiation** Pokuei Wu, Rashmi Madda, Jir-You Wang, Chao-Ming Chen, Wei-Ming Chen Taipei Veteran General Hospital, Taipei, Taiwan

14:24	OP23.3	**Gait analysis after limb salvage procedures using recycling autograft versus endoprosthesis** Norathip Noppharit, Rapin Phimolsarnti, Apichat Asavamongkolkul, Chandhanarat Chandhanayingyong Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand
14:30	OP23.4	**Outcomes of bone tumors treated with recycling bone liquid nitrogen around the knee - 12 years follow-up** Diego Sanches, Márcio Moura, Álvaro Pinto Orthopedic/Orthopedic Oncology, Hospital de Clinicas, Curitiba, Brazil
14:36	OP23.5	**Adjuvant local tumor ablation with freezing nitrogen ethanol composite: A short-term follow-up** Hung-Kai Weng[1,2,3], Chao-Ming Chen[3,4,5], Po-Kuei Wu[3,4], Wei-Ming Chen[3,4] [1]Department of Orthopaedics, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan [2]Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan [3]Therapeutical and Research Center of Musculoskeletal Tumor, Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan [4]Department of Orthopaedics, School of Medicine, National Yang-Ming University, Taipei, Taiwan [5]Institute of Clinical Medicine, College of Medicine, National Yang-Ming University, Taipei, Taiwan
14:42	OP23.6	**Does gap size affect the healing rate and healing time in limb salvage using intercalary recycled autografts?** Gwen Sys, Bauke Debo, Victoria Devloo Ghent University Hospital, Ghent, Belgium
14:48	OP23.7	**The use of recycling autograft in the operative treatment of malignant primary bone tumors: A systematic review of outcomes and complications** Abraham Saad, Surasak Prachapipat, Chandhanarat Chandhannayingyong, Apichat Asavamongkolkul, Saranatra Waikakul, Rapin Phimolsarnti Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand
14:54		**Discussion**

14:00 - 15:00 N. SKALKOTAS HALL

PLATFORM SESSION 24: MICROSURGICAL RECONSTRUCTION

Moderators: **Ekaterini Vlastou** (Greece) • **Santiago Lozano - Calderon** (United States)

14:00	IL24	**Introductory Lecture: Tissue transfer for sarcomas resection** Spyros Stavrianos Plastic and Reconstructive Surgery Department, The Greek Anticancer Institute, Athens, Greece

14:12	OP24.1	**The keystone multiperforator flap concept and its application to soft tissue reconstruction of the upper and lower extremity after melanoma and sarcoma resection** Charalambos (Babis) Rammos[1], Franklin Sim[2], Anita Mohan[2], Jorys Martinez[2], Sara Taege[1] [1]University of Illinois, College of Medicine, Peoria, United States [2]Mayo Clinic, Rochester, United States
14:18	OP24.2	**Outcomes of vascular reconstructions following sarcoma excision** Jean-Camille Mattei[1], Julia Visgaus[1], Ibrahim Alshaygy[1], Georges Basile[1], Curtis Woodford[2], Thomas Lindsay[2], Anthony Griffin[1], Peter Ferguson[1], Jay Wunder[1] [1]Mount Sinai Hospital, University of Toronto, Toronto, Canada [2]Toronto General Hospital, University of Toronto, Toronto, Canada
14:24	OP24.3	**Functional reconstruction of the extremity with transfer of neuro-vascularized muscle following sarcoma resection** Keiichi Muramatsu, Ryuta Iwanaga, Atsushi Mihara, Koichiro Ihara, Takashi Sakai Yamaguchi University, Ube, Japan
14:30	OP24.4	**Choice of recipient vessels in free flap reconstruction of irradiated lower limb sarcoma defects** Eldon Mah St Vincent's Hospital Melbourne, East Melbourne, Australia
14:36	OP24.5	**The vastus lateralis flap to cover soft-tissue defects after resection of the proximal femur** David Biau[1], Camille Rodaix[1], Marc Soubeyrand[2], Jean-Charles Auregan[3], Philippe Anract[1] [1]Orthopedics, Paris 5, AP-HP, Paris, France, [2]Orthopedics, Paris 6, AP-HP, Paris, France, [3]Orthopedics, Paris 11, AP-HP, Paris, France
14:42	OP24.6	**Unplanned excisions of soft tissue sarcomas and flap reconstruction** V. Kontogeorgakos, Th. Antoniadou, A. Van Beeck, R. Margariti, Ch. Zabakidis, I. Trikoupis, A. Mavrogenis, O. Savvidou, P. J. Papagelopoulos Attikon University Hospital, Dept. of Orthopaedic Surgery, Medical School, National and Kapodistrian University of Athens, Greece
14:48		**Discussion**

15:00 - 16:00 BANQUET HALL

FLASH SESSION 11: INNOVATIVE TREATMENTS • PATHOLOGY

Moderators: **Yasuo Yazawa** (Japan) • **Robert Randall** (United States)

Innovative treatments

15:00	FP11.1	**Transarticular solid nailing with centralization of the fibula following distal leg sarcoma resection - The SIGN reconstruction technique** Mamer Rosario[1], Stephen Joseph Garcia[2], Paul Christian Bejosa[1], Reynald Angelo Reyes[1], Erika Paulina Stefani See[1], Romer Ariel Santos[1], Misael Jonathan Ticman[1], Pauline Del Rosario[1], Avelino Alomesen[3] [1]Department of Orthopaedics, East Avenue Medical Center, Quezon City, Philippines [2]Department of Medicine, East Avenue Medical Center, Quezon City, Philippines [3]Department of Pathology, East Avenue Medical Center, Quezon City, Philippines
15:03	FP11.2	**Limb salvage treatment in a child with Ewing's sarcoma of the left humerus - True or scientific fiction** Andrzej Szafranski[1], Bartosz Pachuta[1], Magdalena Rychlowska-Pruszynska[1], Anna Raciborska[2] [1]Department of Oncology and Oncological Surgery in Children & Youth, Institute of Mother & Child, Warsaw, Poland [2]Department of Oncology and Surgical Oncology for Children and Youth, Institute of Mother & Child, Warsaw, Poland
15:06	FP11.3	**Custom made 3D printed implants in orthopedic oncology: Problem solving or new problem?** Giovanni Beltrami[1], Guido Scoccianti[2], Francesco Muratori[2], Maurizio Scorianz[2], Francesca Totti[2], Rodolfo Capanna[3], Domenico Andrea Campanacci[2] [1]Department Pediatric Orthopedic Oncology, Firenze, Italy [2]Department Orthopedic Oncology, Firenze, Italy [3]Department Orthopedic, Pisa, Italy
15:09	FP11.4	**Novel surgical technique - Vascularized epiphyseal proximal fibular transfer in a 2year old with Ewings sarcoma of proximal tibia** Pramod S. Chinder[1], Giovanni Beltrami[2], Utkarsh Pal[1] [1]HCG Hospital, Bangalore, Bangalore, India [2]Azienda Ospedaliero Universitaria Careggi, Florence, Italy
15:12	FP11.5	**Humerus-Radis arthroplasty for reconstruction of bone defect after proximal ulnar tumor resection: A novel limb-salvage surgical technique** Hairong Xu, Yuan Li, Xiaohui Niu Beijing Ji Shui Tan Hospital, Beijing, China
15:15	FP11.6	**Efficacy of minimally invasive surgery on giant cell tumor of the bone: A systematic review** Maria Florencia Deslivia, Sherly Desnita Savio, I Gede Eka Wiratnaya Orthopaedics and Traumatology Department/ Udayana University, Denpasar, Indonesia
15:18	FP11.7	**Serial aspirations & intra-articular antibiotic injections in chronic oncologic and non-oncologic PJI: Introducing the concept of biofilm training** Edward McPherson, Matthew Dipane, Jasmine Castillejos, Susan Bukata UCLA Department of Orthopaedic Surgery, Santa Monica, United States
15:21	FP11.8	**Interim report of a minimal invasive intramedullary stabilization system for metastatic humerus lesions** Frank Traub, Saskia Sachsenmaier, Nicolaus Wuelker Orthpaedic Universtity Hospital Tuebingen, Tuebingen, Germany

15:24	FP11.9	**Sandwich isolation surgery prevents local recurrence in progressive desmoid tumors: A pilot observational study** Junqiang Yin, Yiwei Fu, Changye Zou, Gang Huang, Jingnan Shen The First affiliated hospital of Sun Yat-Sen University, Guangzhou, China
15:27	FP11.10	**The use of the Wagner technique for prophylactic fixation of the proximal femur in children with large cysts in the femoral neck** Walid Ebeid Orthopaedic Department, Cairo University, Cairo, Egypt
15:30	FP11.11	**Non-arthrodesis reconstruction for distal tibial osteosarcoma** Jia Kang Shen, Wei Sun, YingQi Hua, Mengxiong Sun, Zhengdong Cai Shanghai General Hospital, Shanghai, China
15:33	FP11.12	**Characterisation of a PMMA based porous bone cement** Bruno Cimatti[1], Mariana A Santos, Maria Sol Brassesco[3], Wendell M Barboza[1], Marcello H Nogueira-Barbosa[2], Edgard E Engel[1] [1]Orthopedics Department, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, São Paulo, Brasil [2]Image Division, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, São Paulo, Brasil [3]Department of Biology, Faculty of Philosophy, Sciences and Letters at Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brasil
15:36	FP11.13	**Early results of the European Carbon-PEEK Implant Registry** Philip Sanders[1], Michael Bus[1], Raimondo Piana[2], Eduardo Ortiz-Cruz[3], Rob McCulloch[4], Ortal Segal[5], Michiel Van de Sande[1], Sander Dijkstra[1] [1]Leiden University Medical Center, Leiden, the Netherlands [2]Azienda Ospedaliera Universitaria Città della Salute e della Scienza, Turin, Italy [3]MD Anderson Cancer Center, Madrid, Spain [4]Oxford University Hospitals, Oxford, United Kingdom [5]Sourasky medical center, Tel Aviv, Israel
Pathology		
15:39	FP11.14	**Histopathological transformation after zolendrate in giant cell tumors - A comparative study** Umesh Yadav Pgims Rohtak, Rohtak, India
15:42	FP11.15	**Extremity solitary fibrous tumor: Clinicopathologic, immunohistochemical and molecular analysis** Anand Raja, Vishnu Ramanujan, Chandra Kumar Krishnan, Mayilvahanan Natarajan Cancer Institute (WIA), Adyar, Chennai, India
15:45		**Discussion**

15:00 - 16:00 N. SKALKOTAS HALL

FLASH SESSION 12: RECYCLED BONE GRAFT - LOCAL TUMOR ABLATION • SOFT-TISSUE RECONSTRUCTION • SURGICAL MARGIN - CTx EVALUATION

Moderators: **Joseph Benevenia** (United States) • **Jay S. Wunder** (Canada)

Recycled bone graft / Local tumor ablation

15:00	FP12.1	**Mid- to long-term clinical outcome of tumor-devitalized frozen autografts for segmental defect of long bones after tumor excision** Akihiko Takeuchi, Norio Yamamoto, Katsuhiro Hayashi, Shinji Miwa, Kentaro Igarashi, Yuta Taniguchi, Hirotaka Yonezawa, Yoshihiro Araki, Sei Morinaga, Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Kanazawa University Graduate School of Medical Sciences, Kanazawa, Japan
15:03	FP12.2	**Pedicle Freezing by "Freezing Tank" for biological reconstruction of limb sarcoma** Pokuei Wu[1,2], Chao-Ming Chen[1,2], Kuan-Lin Chen[1,2], Wei-Ming Chen[1,2] [1]Department of Orthopaedics, Therapeutical and Research Center of Musculoskeletal Tumor, Taipei Veterans General Hospital, Taipei, Taiwan [2]Orthopaedic Department School of Medicine, National Yang-Ming University, Taipei, Taiwan
15:06	FP12.3	**Intraoperative extracorporeal irradiation and frozen treatment on tumor-bearing autografts show equivalent outcomes for biologic reconstruction** Pokuei Wu[1,2], Chao-Ming Chen[1,2], Wei-Ming Chen[1,2] [1]Department of Orthopaedics, Therapeutical and Research Center of Musculoskeletal Tumor, Taipei Veterans General Hospital, Taipei, Taiwan [2]Orthopaedic Department School of Medicine, National Yang-Ming University, Taipei, Taiwan
15:09	FP12.4	**Biological reconstrcution by extracorporeal irradiation and reimplantation after scapulectomy for Ewing's Sarcoma: Report of 2 cases** Srimanth Bindiganavile, Vadhiraj Manjunath Manipal Hospitals, Bengaluru, India

Soft-tissue reconstruction

15:12	FP12.5	**Planned soft tissue reconstruction after bone and soft tissue sarcoma surgery decreased the postoperative complications** Yu-Min Lin Taichung Veterans General Hospital, Taichung, Taiwan; Chung Shan Medical University, Taichung, Taiwan
15:15	FP12.6	**Outcomes of soft tissue reconstruction after intraoperative radiotherapy for the treatment of extremity soft tissue sarcomas** Meagan Tibbo, Matthew Houdek, Elizabeth Wellings, Safia Ahmed, Peter Rose, Ivy Petersen, Karim Bakri, Steven Moran Mayo Clinic, Rochester, United States

15:18	FP12.7	**Immediate versus staged soft tissue reconstruction after soft tissue sarcoma resections have similar wound and oncologic outcomes** Joshua Lawrenz, Danielle Marshall, Jaymeson Gordon, Aparna Vijayasekaran, Jaiben George, Graham Schwarz, Lukas Nystrom, Nathan Mesko Cleveland Clinic, Cleveland, United States
15:21	FP12.8	**Use of micro vascular free flaps for reconstruction of defects following extremity sarcoma excision: A series of 27 cases** Chandra Kumar Krishnan, Vishnu Ramanujan, Viswa Madesh R, Mayilvahanan Natarajan, Anand Raja Cancer Institute (WIA), Chennai, India
15:24	FP12.9	**Free flap functional reconstruction post posterior thigh compartmentectomy** Eldon Mah St Vincent's Hospital Melbourne, Fitzroy, Australia
Surgical margin / CTx evaluation		
15:27	FP12.10	**Function preserving, R1 surgery for selected patients with desmoid-type fibromatosis** Yoshihiro Nishida, Tomohisa Sakai, Hiroshi Urakawa, Eisuke Arai, Kunihiro Ikuta, Hiroshi Koike, Naoki Ishiguro Nagoya University Hospital, Nagoya, Japan
15:30	FP12.11	**Primary fibular sarcomas: Do they behave differently?** Jagandeep Virk[1], Manish Pruthi[1], Akshay Tiwari[2], Gauri Kapoor[1], Sunil Pasricha[1] [1]Rajiv Gandhi Cancer Institute and Research Centre, New Delhi, India [2]Max Superspecialty Hospital, New Delhi, India
15:33	FP12.12	**Are intra-articular resections for proximal femur sarcomas with intra-articular disease safe?** Srinath Gupta, Prakash Nayak, Ashish Gulia, Ajay Puri, Prateek Hegde, Vineet John Kurisunkal, Navaneeth Kamath, Ashwin Prajapati Tata Memorial Hospital, Mumbai, India
15:36	FP12.13	**Improved virtual surgical planning with 3D-multimodality image for malignant giant pelvic tumors** Hong Duan, Xiang Fang West China Hospital, Sichuan University, Chengdu, China
15:39		**Discussion**

16:00 - 16:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

16:30-17:30 BANQUET HALL

CROSSFIRE SESSION 4: LOW GRADE CS: CURETTAGE OR WIDE RESECTION?

Moderator: **Adesegun Abudu** (United Kingdom)

Wide resection Dundar Sabah Department of Orthopedics and Traumatology, Ege University School of Medicine, Izmir, Turkey	VS	**Curettage** Saminathan Suresh Nathan Limb Salvage and Revision Arthroplasty Surgery Pte Ltd, Singapore

17:30-18:30 BANQUET HALL

SPECIAL SESSION 1: ISOLS & I

Moderators: **Mary O'Connor** (United States) • **Hiroyuki Tsuchiya** (Japan) • **Peter Choong** (Australia)

17:30-17:50	**Lessons learned in musculoskeletal oncology over five decades: Ten pearls!** Franklin H. Sim Mayo Clinic, United States
17:50-18:10	**Current advances in Japanese orthopedic oncology** Atsumasa Uchida The former President of Mie University Medical School, Japan
18:10-18:30	**What ISOLS means to me** Ian Dickinson The Wesley Medical Centre, Brisbane, Australia

18:30-18:45 BANQUET HALL

SPECIAL SESSION 2: ISOLS FELLOWS

Moderators: **Panayiotis J. Papagelopoulos** (Greece) • **Pietro Ruggieri** (Italy)

18:30-18:35	**ISOLS Fellowship 2016-2017: Visit to MOFFITT Cancer Center and visit to UCLA Orthopaedic Center** Giulia Trovarelli (Italy)
18:35-18:40	**Beyond** Min Wook Joo (Korea)
18:40-18:45	**ISOLS Trainee Fellowships 2018-2019 in Athens, Padova and Vienna** Katsuhiro Hayashi (Japan)

ISOLS DINNER (detailed information on page 9) ISLAND-RESIDENCE IN VARKIZA AREA

Scientific Programme

SATURDAY | SEPTEMBER 14TH, 2019

08:00 - 09:00 BANQUET HALL

FLASH SESSION 13: AMPUTATION AND REHABILITATION • PROSTHETIC RECONSTRUCTION 2

Moderators: **Örjan Berlin** (Sweden) • **Vasilios Sakellariou** (Greece)

Amputation and rehabilitation

08:00	FP13.1	**Early outcomes of osseointegrated implants in transhumeral and transfemoral amputations** Jonathan Forsberg[1], Benjamin Kyle Potter[2] [1]Department of Orthopaedic Surgery, Johns Hopkins University, Baltimore, United States [2]Orthopaedics, USU-Walter Reed Department of Surgery, Bethesda, United States
08:03	FP13.2	**Sarcomas at the ankle region: Amputation vs. limb salvage** Andreas Leithner[1], Maria Smolle[1], Gregor Demmer[2], Carmen Trost[2], Jörg Friesenbichler[1], Reinhard Windhager[2], Marko Bergovec[1], Gerhard Hobusch[2] [1]Dept. of Orthopaedics and Trauma, Medical University of Graz, Graz, Austria [2]Dept. of Orthopaedics and Trauma, Medical University of Vienna, Vienna, Austria
08:06	FP13.3	**Use of prostheses in lower limb amputees due to tumor influences their survival rate?** Sofia Cueva[4], Juan Pablo Zumarraga[1], Pérola Grinberg Plapler[3], André Mathias Baptista[2], Olavo Pires de Camargo[2] [1]Departamento de Ortopedia y Traumatología, Hospital de los Valles, Universidad San Francisco de Quito, Quito, Ecuador [2]Grupo de Oncologia Ortopedica, Instituto de Ortopedia e Traumatologia, Hospital das Clinicas, Universidade de São Paulo, São Paulo, Brasil [3]Divisão de Medicina Física e Reabilitação, Instituto de Ortopedia e Traumatologia, Hospital das Clinicas, Universidade de São Paulo, São Paulo, Brasil [4]Departamento de Médicina Física y Rehabilitación, Hospital de los Valles, Universidad San Francisco de Quito, Quito, Ecuador
08:09	FP13.4	**Targeted Muscle Reinnervation: A strategy to prevent neuroma and phantom limb pain in oncologic amputees** Tom Scharschmidt, John Alexander, Julie West, Joel Mayerson, Ian Valerio Ohio State University, Columbus, United States
08:12	FP13.5	**Hindquarter amputation: A necessary operation for pelvic tumours with associated morbidity and mortality** Christian Gray Stephens, Benjamin Davies, William Aston, Panos Gikas, Paul Gunning, Timothy Briggs, Andrew Johnston, Craig Gerrand RNOH Stanmore, London, United Kingdom

08:15	FP13.6	**Patella femoral arthrodesis amputation - The patella turn-down-plasty** B. Hudson Berrey Baptist MD Anderson Cancer Center, Jacksonville, United States
08:18	FP13.7	**Osseointegration for amputations: Current implants, techniques, and future developments** Munjed Al Muderis[1,2], Jason Hoellwarth[1,2], William Lu[1], Kevin Tetsworth[1,2] [1]Osseointegration Group of Australia, Sydney, Australia [2]Macquarie University Hospital, Sydney, Australia
08:21	FP13.8	**Safety of osseointegrated implants for transtibial amputees: A two-center prospective proof-of-concept study** William Lu[1], Munjed Al Muderis[1,2] [1]Osseointegration Group of Australia, Sydney, Australia [2]Macquarie University Hospital, Sydney, Australia
Prosthetic reconstruction 2		
08:24	FP13.9	**Mechanical analysis of curved uncemented femoral stems after distal femoral reconstruction: A finite element study** Minxun Lu, Yuqi Zhang, Jie Wang, Li Min, Yong Zhou, Yi Luo, Fan Tang, Chongqi Tu West China Hospital, Sichuan University, Chengdu, China
08:27	FP13.10	**Preliminary results of a new intercalary modular endoprosthesis for the management of diaphyseal bone tumors** Kadir Buyukdogan[1], Mehmet Ayvaz[2], Barlas Goker[2], Mazhar Tokgozoglu[2], Ulukan Inan[3], Korhan Ozkan[4], Tahsin Sami Colak[5], Alp Akman[6] [1]Koc University, Istanbul, Turkey [2]Hacettepe University, Ankara, Turkey [3]Osmangazi University, Eskisehir, Turkey [4]Medeniyet University, Istanbul, Turkey [5]Necmettin Erbakan University, Konya, Turkey [6]Pamukkale University, Denizli, Turkey
08:30	FP13.11	**Short to medium results of custom 3D printed pelvic implants** André Olivier[1], George Vicatos[2] [1]Paardevlei Private Hospital, Somerset West, South Africa [2]University of Cape Town, Cape Town, South Africa
08:33	FP13.12	**Short term benefits of passively eluting Agluna silver are not proven in the medium term for preventing infection in EPRs** Jonathan Stevenson[1], Charles Baird[1], Benjamin Jacques[1], Minna Laitinen[2], Michael Parry[1], Lee M. Jeys[1] [1]Royal Orthopaedic Hospital, Birmingham, United Kingdom [2]Helsinki University Hospital, Helsinki, Finland
08:36		**Discussion**

08:00 - 09:00 N. SKALKOTAS HALL

FLASH SESSION 14: SOFT-TISSUE SARCOMAS

Moderators: **Ian Dickinson** (Australia) • **Anna Kulidjian** (United States)

08:00	FP14.1	**Extremity sarcoma resections: How far is far enough?** Annika Bilgeri[1], Alexander Klein[1], Lars Lindner[2], Barbara Zollner[3], Thomas Knösel[4], Andrea Baur-Melnyk[5], Volkmar Jansson[1], Hans Roland Dürr[1] [1]University Hospital LMU Munich, Orthopaedic Oncology, Department of Orthopaedics, Physical Medicine and Rehabilitation, Munich, Germany [2]University Hospital LMU Munich, Department of Oncology, Munich, Germany [3]University Hospital LMU Munich, Department of Radiation Oncology, Munich, Germany [4]University Hospital LMU Munich, Institute of Pathology, Munich, Germany [5]University Hospital LMU Munich, Department of Radiology, Munich, Germany
08:03	FP14.2	**Sarcoma unplanned excisions: A root cause analysis** Ana C. Belzarena[1], Nicholas Zamith[2], David Joyce[1] [1]Sarcoma Department, University of South Florida, Moffitt Cancer Center, Tampa, United States [2]Morsani College of Medicine, University of South Florida, Tampa, United States
08:06	FP14.3	**Clinical outcome of surgical treated leiomyosarcoma in the lower limbs: A retrospective BeNe study** Annelies Van Beeck[1], V. M. Praag[2], M. A. J. Van de Sande[2], P. D. S. Dijkstra[2], A.D.G. Krol[2], Johan Somville[1] [1]UZA, Mortsel, Belgium [2]LUMC, Leiden, the Netherlands
08:09	FP14.4	**Actual long-term survival after resection of AJCC stage III extremity soft tissue sarcoma** Do Weon Lee, Han-Soo Kim, Ilkyu Han Seoul National University Hospital, Jongno-gu, Seoul, South Korea
08:12	FP14.5	**Soft tissue sarcomas treated with pre-operative radiation and surgical resection: Better surgical margins can be obtained if resection is followed by flap reconstruction** Alexandra Brown[1], Eldon Mah[2], Deborah May[1], Peter F M Choong[1], Claudia DiBella[1] [1]Department of Orthopaedics, St Vincent's Hospital, Fitzroy, Australia [2]Department of Plastic and Reconstructive Surgery, St Vincent's Hospital, Fitzroy, Australia
08:15	FP14.6	**Treatment results of localized dedifferentiated liposarcoma in the extremities** Eiji Nakata, Toshiyuki Kunisada, Jo Hasei, Toshifumi Ozaki Okayama University Hospital, Okayama City, Japan
08:18	FP14.7	**Intraoperative ultrasonography-guided surgery for impalpable and ill-defined malignant soft tissue tumor** Akihiko Takeuchi, Norio Yamamoto, Katsuhiro Hayashi, Shinji Miwa, Kentaro Igarashi, Yuta Taniguchi, Hirotaka Yonezawa, Yoshihiro Araki, Sei Morinaga, Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Kanazawa University Graduate School of Medical Sciences, Kanazawa, Japan

08:21	FP14.8	**Surgical resection of massive liposarcomas at the extremities: A 15-year experience in a single referral musculoskeletal sarcoma unit** Francisco Baixauli, Jose Amaya, Manuel Angulo, Carolina De La calva Hospital Universitario Y Politecnico La Fe, Valencia, Spain
08:24	FP14.9	**Soft Tissue Sarcomas. Do we need radiotherapy? A retrospective review** Xing Cheng Daniel Yin[1], Cheng Sean Gong[1], Wai Mon Lester Chan[2], Hern Wang Matthew Cheng[2] [1]Lee Kong Chian School of Medicine, Singapore [2]Tan Tock Seng Hospital Orthopedic Surgery, Singapore
08:27	FP14.10	**Extremity soft tissue sarcomas: Survival outcomes and clinical characteristics** Srila Samphao, Karunchai Treetrong, Chompunut Supavita, Somrit Mahattanobol Department of Surgery, Faculty of Medicine, Prince of Songkla University, Hat Yai, Thailand
08:30	FP14.11	**Prognostic factors and treatment strategy for metastatic myxoid liposarcoma** Yusuke Shinoda[1], Eisuke Kobayashi[3], Hiroshi Kobayashi[2], Tomoaki Mori[3], Naofumi Asano[4], Robert Nakayama[4], Hideo Morioka[4], Shintaro Iwata[3], Tsukasa Yonemoto[5], Takeshi Ishii[5], Tohru Hiruma[6], Akira Kawai[3], Hirotaka Kawano[7] [1]Dept. of Rehabilitation Medicine, The Univ. of Tokyo Hospital, Tokyo, Japan [2]Dept. of Orthopaedic Surgery, Faculty of Medicine, The Univ. of Tokyo, Tokyo, Japan [3]Division of Musculoskeletal Oncology, National Cancer Center Hospital, Tokyo, Japan [4]Dept. of Orthopaedic Surgery, Keio Univ. School of Medicine, Tokyo, Japan [5]Division of Orthopaedic Surgery, Chiba Cancer Center, Chiba, Japan [6]Division of Musculoskeletal Tumor Surgery, Kanagawa Cancer Center, Kanagawa, Japan [7]Dept. of Orthopaedic Surgery, Graduate School of Medicine, The Univ. of Teikyo, Tokyo, Japan
08:33	FP14.12	**Synovial sarcoma: Experience from Florence and Izmir Sarcoma Centers** Federico Sacchetti[2], Andaç Celasun Alsina[1], Ginevra Bayon[2], Guido Scoccianti[3], Filippo Frenos[3], Andreani Lorenzo[1], Dündar Sabah[1], Domenico Andrea Campanacci[3], Rodolfo Capanna[2] [1]Ege University, Izmir, Turkey, [2]Pisa University, Pisa, Italy [3]Careggi Hospital of Florence, Florence, Italy
08:36	FP14.13	**Outcome after surgical treatment of Dermatofibrosarcoma Protuberans (DFSP): Does it requires all this follow up? How much resection margin is enough?** Ibrahim Alshaygy, Jean Camille Mattei, Georges Basile, Anthony Griffin, Peter Ferguson, Jay Wunder Mount Sinai Hosptial, Toronto, Canada; King Saud University Medical City, Riyadh, Saudi Arabia
08:39	FP14.14	**Soft Tissue Sarcomas: Experience from 2006 to 2016** Bruna Buscharino, Eduardo Yonamine, Anderson Rodrigues, Karen Garolfo, Gabriela Koch, Helbert Silva Santa Casa De São Paulo, São Paulo, Brazil
08:42	FP14.15	**Lymph node metastasis from extremity soft tissue sarcomas** Georges Basile, Jean-Camille Mattei, Ibrahim Alshaygy, Anthony Griffin, Peter Ferguson, Jay S. Wunder Mount Sinai Hospital, Toronto, Canada

08:45	FP14.16	**Low grade fibromyxoid sarcoma: Demographics, prognosis and behavioural patterns** Louis-Romée Le Nail, Umar-Khetaab Hanif, Yusuke Tsuda, Vaiyapuri Sumathi, Michael Parry, Lee Jeys, Scott Evans The Royal Orthopaedic Hospital, Birmingham, United Kingdom
08:48	FP14.17	**Extra skeletal myxoid chondrosarcoma: Demographics, prognosis and behavioural patterns** Louis-Romée Le Nail, Jan Balko, Vaiyapuri Sumathi, Tomohiro Fujiwara, Scott Evans, Jonathan Stevenson, Lee Jeys, Michael Parry The Royal Orthopaedic Hospital, Birmingham, United Kingdom
08:51		**Discussion**

09:00 - 15:30 MC2 HALL

ISOLS YOUNG SURGEONS TRAINING WORKSHOP ON LIMB SALVAGE SURGERY
Maximum participation: 60 persons • Workshop Fee: 100 Euro
(Detailed programme on page 87)

09:00 - 10:00 BANQUET HALL

CROSSFIRE SESSION 5: DIAPHYSEAL RESECTIONS: ENDOPROSTHESSIS OR ALLOGRAFT?
Moderator: **Domenico Andrea Campanacci** (Italy)

Allograft Luis Aponte-Tinao Italian Hospital of Buenes Aires, Argentina	VS	**Endoprosthessis** Daniel Kotrych Center for Diagnostics and Therapy of Hereditary Tumors, Department of Orthopaedics, Traumatology and Orthopaedic Oncology, Pomeranian Medical University of Szczecin, Poland

10:00 - 11:00 BANQUET HALL

PLATFORM SESSION 25: PROSTHETIC RECONSTRUCTION 2
Moderators: **Arne Streitburger** (Germany) • **Justin Bird** (United States)

10:00	IL25	**Introductory Lecture: 3D printing 4.0 in Orthopaedic Oncology** Davide Maria Donati Oncology Unit, Bone Regeneration Laboratory, Rizzoli Orthopaedic Institute, University of Bologna, Bologna, Italy
10:12	OP25.1	**The use of custom-made 3D printed titanium implants for pelvic reconstruction after tumour resection; A case series of 15 patients** Demien Broekhuis[1,2,3], Heledd Havard[2,3], Richard Boyle[2,3], Alfred Chua[2,3], Sascha Kanuraratne[2], Paul Stalley[2,3] [1]LUMC, Den Haag, the Netherlands, [2]RPAH, Sydney, Australia, [3]NSPH, Sydney, Australia

10:18	OP25.2	**Three-dimensional printed customized endoprosthesis for periacetabular malignancies: Short term outcome** Wang Jie, Min Li, Lu Minxun, Zhou Yong, Luo Yi, Tang Fan, Chongqi Tu West China Hospital of Medicine, Sichuan University, Chengdu, Sichuan, China
10:24	OP25.3	**3D Printed Semi-biological cage reconstruction for segmental bone defect after tumor resection shows promising results – 3 years follow-up** Solomon Dadia, Amir Sternheim, Yair Gortzac, Ortal Segal, Omri Maroz, Yehuda Kollender Tel Aviv Medical Center, Tel-Aviv, Israel
10:30	OP25.4	**Functional outcomes and complications of prosthetic reconstruction of the proximal humerus after tumor resection** Olga Savvidou, Christos Vottis, Angelos Kaspiris, Ioannis Trikoupis, Markos Liontos, Giorgos Georgopoulos, Panayiotis J. Papagelopoulos Orthopedic Department, Athens University Medical School, Athens, Greece
10:36		**Discussion**

10:00 - 11:00 N. SKALKOTAS HALL

PLATFORM SESSION 26: SOFT-TISSUE SARCOMAS 2

Moderators: **Eduardo Sabao Yonamine** (Brazil) • **Bruna Buscharino** (Brazil)

10:00	IL26	**Introductory Lecture: Controversies in soft tissue sarcoma** Jay S. Wunder Rubinoff-Gross Chair in Orthopaedic Oncology, Mount Sinai Hospital, Toronto, Canada
10:12	OP26.1	**Re-excision after unplanned excision of soft tissue sarcomas: Long-term results** Guido Scoccianti[1], Matteo Innocenti[1], Alberto Schiavo[1], Pierluigi Cuomo[1], Maurizio Scorianz[1], Giovanni Beltrami[1], Rodolfo Capanna[2], Domenico Andrea Campanacci[1] [1]Orthopaedic Oncology Unit, Careggi University Hospital, Firenze, Italy [2]Department of Orthopaedics, Pisa University, Pisa, Italy
10:18	OP26.2	**A dual database appraisal of liposarcoma and its subtypes** Kamil Amer[1], Jennifer Thomson[1], Dominick Congiusta[1], Samer Elsamna[1], Anthony Bozzo[2], Kathleen Beebe[1] [1]Rutgers New Jersey Medical School, Montclair, United States [2]McMaster University, Hamilton, Canada
10:24	OP26.3	**Prognostic factors in lipomatous tumors: Do we have to take lipoma-like tumors seriously?** Yves Scherrer, Christoph Laux, Tobias Götschi, Andrea Rosskopf, Daniel A. Müller Balgrist University Hospital, Zürich, Switzerland

10:30	OP26.4	**Extraskeletal Ewings Sarcoma (EES) - Oncological outcomes** Srinath Gupta, Ashish Gulia, Prakash Nayak, Ajay Puri, Navaneeth Kamath, Prateek Hegde, Ashwin Prajapati, Vineet John Kurisunkal Tata Memorial Hospital, Mumbai, India
10:36	OP26.5	**Higher rate of wound complications associated with sarcoma unplanned excisions** Cecilia Belzarena[1], Nicholas Zamith[2], Nora Watson[1], Odion Binitie[1], John Mullinax[1], Douglas Letson[1], David Joyce[1] [1]Sarcoma Department, University of South Florida, Moffitt Cancer Center, Tampa, United States [2]Morsani College of Medicine, University of South Florida, Tampa, United States
10:42	OP26.6	**Neo adjuvant theraphy effectiveness on local recurrence of soft tissue sarcomas** Andac Celasun Alsina[1], Federico Sacchetti[2], Ozgur Mert Bakan[1], Dundar Sabah[1] [1]Ege University, Izmir, Turkey [2]Pisa University, Pisa, Italy
10:48		**Discussion**

11:00 - 11:30 **COFFEE BREAK / E-POSTERS VIEWING** EXHIBITION AREA

11:30 -12:30 BANQUET HALL

SYMPOSIUM 2: WOMEN IN ORTHOPEDIC ONCOLOGY
Moderators: **Franklin Sim** (United States) • **Olga Savvidou** (Greece)

11:30-11:45	**Of mice and men** Anna Kulidjian Scripps Clinic Torrey Pines, La Jolla, United States
11:45-12:00	**Mentors are great, sponsors are outstanding!** Valerae Lewis Department of Orthopaedic Oncology, University of Texas MD Anderson Cancer Center, Houston, Texas, United States
12:00-12:15	**Are women better surgeons: Pride and prejudice revisited** Mary O' Connor Center for Musculoskeletal Care at Yale School of Medicine and Yale New Haven Hospital, Yale School of Medicine, New Haven, United States
12:15-12:30	**The #MeToo movement and mentorship of women in Orthopaedic Surgery** Seth Leopold Editor-in-chief, Clinical Orthopaedics Related Research, Seattle, United States

12:30 - 13:30 BANQUET HALL

ROUND TABLE 2: GIANT CELL TUMOR OF THE BONE

Moderators: **Nicola Fabbri** (United States) • **Harzem Özger** (Turkey)

12:30-12:45	**Current indications for denosumab in Giant Cell Tumors** Adesegun Abudu Royal Orthopaedic Hospital, Birmingham, United Kingdom
12:45-13:05	**Histology and imaging of Giant Cell Tumors** Carrie Inwards Bone and Soft Tissue Pathology, Mayo Clinic College of Medicine, Rochester, United States Doris Wenger Department of Diagnostic Radiology, Mayo Clinic, Rochester, United States
13:05-13:20	**New problems with denosumab in Giant Cell Tumor treatment** Costantino Errani Orthopaedic Service, Musculoskeletal Oncology Department, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
13:20-13:30	**Discussion**

12:30 - 13:30 N. SKALKOTAS HALL

ROUND TABLE 3: INTERVENTIONAL ORTHOPEDIC ONCOLOGY

Moderators: **Bennie Gerhard Petris Lindeque** (United States) • **Roberto Vélez** (Spain)

12:30-12:45	**Minimally invasive techniques in orthopedic Oncology** Alexis Kelekis National and Kapodistrian University of Athens, Medical School of Athens, Greece
12:45-13:00	**RF ablation for musculoskeletal tumors** Mary Jesse Department of Musculoskeletal Radiology, University of Colorado School of Medicine, Aurora, United States
13:00-13:15	**Selective angiography and embolization for bone tumor** Elias Brountzos Department of Descriptive-Functional Studies, National and Kapodistrian University of Athens, Athens, Greece
13:15-13:30	**Discussion**

13:30-14:30 BANQUET HALL

PLATFORM SESSION 27: PROSTHETIC RECONSTRUCTION 3

Moderators: **Peter Steadman** (Australia) • **Hirotaka Kawano** (Japan)

13:30	IL27	**Introductory Lecture: Are we observing a decrease in the number of Complications in Tumor Prosthesis?** Reynaldo Jesus-Garcia Musculoskeletal Oncologic Division, Universidade Federal de Sao Paulo and Pediatric Oncology Institute – GRAACC. Brazil
13:42	OP27.1	**Do we need to resurface the patella with endoprosthesis reconstruction?** Walid Ebeid[1], Mohamed Taha Mehanna[2] [1]Cairo University, Cairo, Egypt [2]Suez Canal University, Ismailia, Egypt
13:48	OP27.2	**Design considerations of 3D printed custom pelvic implants** Paul Stalley[1], Daniel Franks[1], William Linkhorn[2] [1]Royal Prince Alfred Hospital Sarcoma Unit, Sydney, Australia [2]OSSIS, Christchurch, New Zealnd
13:54	OP27.3	**Scapular prosthesis and constrained reverse shoulder arthroplasty provide superior results than Tikhoff Linberg procedure** Ioannis Papanastassiou[1], Olga Savvidou[2], Alexandros Stathopoulos[1], Panayiotis Megaloikonomos[2], Kostas Tolis[2], Stavros Goumenos[2], Markos Liontos[2], Leonidas Dimopoulos[2], Panayiotis J. Papagelopoulos[2] [1]General Oncological Hospital Kifisias "Agioi Anargyroi", Athens, Greece [2]First Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, School of Medicine, "Attikon" University General Hospital, Athens, Greece
14:00	OP27.4	**3D-printed titanium custom-made prostheses in reconstruction after resection of pelvic tumors: Results at medium follow-up** Carmine Zoccali[1], Jacopo Baldi[1], Luca Cannavò[2], Alessandra Scotto Di Uccio[1], Roberto Biagini[1], Alessandro Luzzati[2], Dr Gennaro Scotto[2] [1]Oncological Orthopaedics, Irccs - Regina Elena National Cancer Institute, Rome, Italy [2]Oncological Orthopaedics and Reconstructive surgery, IRCCS - Galeazzi Orthopeadoc Institute, Milan, Italy
14:06	OP27.5	**Limb salvage surgery in tumoral and non-tumoral prothetic complications** João Freitas, Francisco Fernandes, Ruben Fonseca, Jose Casanova Coimbra University Hospital, Coimbra, Portugal
14:12	OP27.6	**Distally fixed, press-fit stems instead of megaprosthesis for bone and joint reconstruction** Luis Bahamonde, Pierluca Zecchetto University of Chile, Santiago, Chile
14:18		**Discussion**

13:30-14:30 N. SKALKOTAS HALL

PLATFORM SESSION 28: SPINAL AND SACRAL TUMORS

Moderators: **Franklin Sim** (United States) • **Toshiyuki Kunisada** (Japan)

13:30	IL28	**Introductory Lecture: Multisegmental primary tumors of the thoracolumbar spine: 52 Patients treated with multilevel en bloc spondylectomy and reconstruction** Alessandro Luzzati Oncological Orthopaedic Center Istituto Ortopedico Galeazzi Milan, Milan, Italy
13:42	OP28.1	**Outcome evaluation of therapeutic benefits of denosumab on sacral giant cell tumors treated with nerve-sparing surgery: A retrospective cohort study of 68 patients** Chiao Yee Lim, Xingyu Liu, Fangzhou He, Haijie Liang, Yi Yang, Tao Ji, Xiaodong Tang, Rongli Yang, Wei Guo Musculoskeletal Tumor Center, Peking University People's Hospital, Beijing, China
13:48	OP28.2	**Reconstruction of spinopelvic stability with a 3D-printed sacral endoprosthesis after total en bloc sacrectomy** Wei Guo, Wei Ran, Xiaodong Tang, Yi Yang Department of Orthopaedic Oncology, Peking University People's Hospital, Beijing, China
13:54	OP28.3	**Preliminary results of modular vertebral prosthesis with 3D-printed end plate for anterior column reconstruction after multilevel thoracolumbar en-bloc spondylectomy** Xiaodong Tang, Ruifeng Wang, Tao Ji, Rongli Yang, Wei Guo Department of Orthopaedic Oncology, Peking University People's Hospital, Beijing, China
14:00	OP28.4	**A key procedure during en bloc resection of the tumors at the mobile spine-the "Rotation-reversion" technique for the "Vertebro-sagittal resection"** Haomiao Li, Zixiong Lei, Ming Lu, Shuangwu Dai, Changhe Hou, Wei Chen, Shaohua Du The Third Affiliated Hospital of Southern Medical University, Guangzhou, China
14:06	OP28.5	**Bleeding and infection: Two disturbing questions in surgical treatment of sacral tumors** Haomiao Li, Wei Chen, Zixiong Lei, Ming Lu, Shuangwu Dai, Changhe Hou, Shaohua Du The Third Affiliated Hospital of Southern Medical University, Guangzhou, China
14:12	OP28.6	**Total sacrectomy without reconstruction** Eduardo Sadao Yonamine, Bruna Buscharino, Anderson Rodrigues Santos, Karen Voltan, Elio Consentino, Jose Donato Prospero, Aires Leite Jr, Mario Cavalcanti, Murilo Alexandre Santa Casa Medical School of Sao Paulo, Sao Paulo, Brazil
14:18	OP28.7	**3D printing technology enhancing Insitu-Cryoablation – A unique procedure for inoperable sacral Giant Cell Tumor (GCT) – Case report** Solomon Dadia, Amir Sternheim, Yair Gortzac, Ortal Segal, Omri Maroz, Yehuda Kollender Tel Aviv Medical Center, Tel Aviv, Israel
14:24		**Discussion**

14:30 - 15:30 BANQUET HALL

SOCIETY LECTURES
Moderators: **Amir Sternheim** (Israel) • **Akihiko Takeuchi** (Japan)

14:30-14:45	**ISOLS Lecture - Biological reconstruction: Now and future** Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan
14:45-15:00	**EMSOS, a unique melting pot of diverse Sarcoma Specialists: What's in it for you?** Ramses Forsyth Pathology Department, University Hospital Brussels, Brussels, Belgium
15:00-15:15	**MSTS Lecture - The clinical and societal burden of metastatic carcinoma to bone** Robert Randall The David Linn Endowed Chair in Orthopaedic Surgery, Sarcoma Services, Department of Orthoapaedic Surgery, Sacramento, United States
15:15-15:30	**CTOS Lecture - The objective and current activities of CTOS** Akira Kawai Musculoskeletal Oncology and Rehabilitation Medicine, Rare Cancer Center at National Cancer Center Hospital (NCCH), Tokyo, Japan

15:30 - 16:30 BANQUET HALL

SPECIAL SESSION 3: HOW TO GET YOUR DATA PUBLISHED
Moderator: **Panayiotis J. Papagelopoulos** (Greece)

15:30-15:55	**Why should I write it? Why should you read it?** John H. Healey Weill Medical College of Cornell University, Orthopaedic Oncology Service, Memorial Sloan-Kettering Cancer Center, New York, United States
15:55-16:20	**Writing for Peer Review - The "Question-driven Manuscript"** Seth Leopold Editor-in-chief, Clinical Orthopaedics Related Research, Seattle, United States
16:20-16:30	**Discussion**

16:30 - 17:00 **CLOSING REMARKS**

ISOLS Young Surgeons Training Workshop on Limb Salvage Surgery

Saturday, September 14th, 2019
09:00-15:30 MC2 HALL

Maximum participation: **60 persons**
Workshop Fee: **100 Euro**

MODERATORS:
Ashish Gulia (India) • **Vasileios Kontogeorgakos** (Greece) • **Lee M. Jeys** (United Kingdom)

09:00-09:20	**Diagnosis, staging and biopsy in musculoskeletal oncology** Ashish Gulia (India)
09:20-10:00	**Radiologic-Pathologic Correlation in Musculoskeletal Oncology: Tips for Avoiding Diagnostic Pitfalls** Carrie Inwards (United States) & Doris Wenger (United States)
10:00-10:20	**Bone and Soft Tissue Sarcomas - Principles of Limb Salvage** Lee M. Jeys (United Kingdom)
10:20-10:35	**Custom made implants: How to get the best individualized implant** Peter Scheinemann (Germany)
10:35-10:45	**Q & A**

10:45-11:00 Break

11:00-12:30 Surgical approach and Reconstruction

11:00-11:15	**Proximal Humerus - Shoulder Girdle** Marko Bergovec (Austria)
11:15-11:30	**Distal Humerus - Elbow** Vasileios Kontogeorgakos (Greece)
11:30-11:45	**Pelvis - Acetabulum** Arne Streitbürger (Germany)
11:45-12:00	**Proximal Femur - Total Femur** Jendrik Hardes (Germany)
12:00-12:15	**Distal Femur - Knee** Martin Thaler (Austria)
12:15-12:30	**Proximal tibia** Andrea Angelini (Italy)

12:30-13:00 Lunch Break (lunch box)

13:00-15:30 Workshops on Sawbones

13:00-13:25	**Table 1:** Proximal Humerus and Proximal Humerus Inverse Replacement
13:25-13:50	**Table 2:** Distal Humerus and Proximal Ulna Replacement
13:50-14:15	**Table 3:** Partial Pelvic Replacement with LUMiC
14:15-14:40	**Table 4:** Proximal Femur Replacement, Bipolar Head and attachment tube
14:40-15:05	**Table 5:** Distal Femur Replacement and Total Femur Replacement
15:05-15:30	**Table 6:** Proximal Tibia Replacement

INSTRUCTORS:

Andrea Angelini (Italy)
Marko Bergovec (Austria)
Bian Brigman (United States)
Dietmar Dammerer (Austria)
Ashish Gulia (India)
Jendrik Hardes (Germany)
Katsuhiro Hayashi (Japan)
Lee M. Jeys (United Kingdom)
Vasileios Kontogeorgakos (Greece)
Theodoros Kormas (Greece)
Andreas Mavrogenis (Greece)
Parikh Mishil (India)
Panayiotis J. Papagelopoulos (Greece)
Ioannis Papanastasiou (Greece)
Nikolaos Stavropoulos (Greece)
Arne Streitburger (Germany)
Martin Thaler (Austria)
Annelies Van Beeck (Belgium)

Rotation Workshops in 6 groups of 12 to 15 participants each with 2 experienced instructors per table. Workshops will be assisted by specialised technicians.

E-Posters Catalogue

Allograft • Vascularized bone graft

PP001

Intramedullary fixation and subsequent lengthening of A–frame free vascularised fibula grafts for reconstruction of the distal femur in Osteosarcoma patients

Ulrich Lenze[1], Mark O'Sullivan[2], Dave McCombe[3], Christopher Coombs[3], Leo Donnan[2]
[1]Department of Orthopaedics, Klinikum Rechts der Isar, Technical University of Munich, Munich, Germany
[2]Department of Orthopaedics, The Royal Children's Hospital, Melbourne, Australia
[3]Department of Plastic and Maxillofacial Surgery, The Royal Children's Hospital, Melbourne, Australia

PP002

Reconstruction with vascularized fibula and lumbar-pelvic instrumentation for the defect after plevic IV maglignant lesion resection

Jin Xiong, Shoufeng Wang, Benlong Shi
Department of Orthopadic, Drum Tower Hospital, Nanjing University Medical School, Nanjing, China

PP003

Reconstruction of bone defect with allograft and retrograde intramedullary nail for distal tibia osteosarcoma

Benlong Shi, Shoufeng Wang, Jin Xiong
Department of Orthopadics, Drum Tower Hospital, Nanjing University Medical School, Nanjing, China

PP004

Massive biological reconstruction by combination use of clavicula pro humero and free vascularized fibula graft after huge osteosarcoma arising in proximal humerus in a child: A case report

Yoji Shido, Yukihiro Matsuyama
Dept. of Orthopedic Surgery, Hamamatsu University School of Medicine, Hamamatsu, Japan

PP005

Combined use of extracorporeally irradiated autograft and vascularized bone graft for reconstruction of massive bone and joint defects after resection of malignant musculoskeletal tumor

Atsushi Mihara[1], Keiichi Muramatsu[1], Ryuta Iwanaga[1], Koichiro Ihara[2], Takashi Sakai[1]
[1]Dept. of Orthopedic Surgery, Yamaguchi University Graduate School of Medicine, Ube-City, Japan
[2]Dept. of Orthopedic Surgery, Kanmon Medical Center, Shimonoseki-City, Japan

PP006

Updates on the use and clinical outcomes of bone allograft for orthopaedic oncology in the past 35 years from Bangkok Biomaterial Center

Chandhanarat Chandhanayingyong[1], Jirapa Wonglex[2], Rathathai Muangtham[2], Apichat Asavamongkolkul[1], Saranatra Waikakul[1], Rapin Phimolsarnti[1]
[1]Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Bangkok, Thailand
[2]Bangkok Biomaterial Center under the patronage of H.R.H. Princess Galyanivadhana of Thailand, Bangkok, Thailand

PP007

Extensor mechanism allograft and radiotherapy in the treatment of soft tissue sarcomas around the knee: Presentation of two clinical cases

Francisco Baixauli, José Amaya, Manuel Angulo, Carolina De La calva, Ignacio Baixauli
Hospital Universitario Y Politecnico La Fe, Valencia, Spain

PP008	**Free Vascularised Fibular Graft (FVFG) augmented by cadaveric strut allograft for the management of long bone defects and long term outcomes** Konstantinos Malizos[1], Nikolaos Stefanou[1], Zoe Dailiana[1], Socratis Varitimidis[1], Panagiotis Papagelopoulos[2], Vasileios Kontogeorgakos[2] [1]Department of Orthopaedic Surgery and Musculosceletal Trauma, University of Thessaly, Faculty of Medicine, Larissa, Greece [2]First Department of Orthopaedics, National and Kapodistrian University of Athens, Faculty of Medicine, Athens, Greece
PP009	**Bone preservation after revision allograft prosthetic composite reconstruction of the proximal humerus** Taylor Reif[1], Ashley Aratani[1], Andre Spiguel[1], Bradley Schoch[1], Joaquin Sanchez-Sotelo[2], Benjamin Wilke[3] [1]University of Florida, Gainesville, United States, [2]Mayo Clinic, Rochester, United States [3]Mayo Clinic, Jacksonville, United States
PP010	**Salvage of limb salvage in intercalary reconstruction of the lower limb with bone graft** Maurizio Scorianz[1], Francesca Totti[1], Francesco Muratori[1], Matteo Innocenti[1], Xhulio Prifti[1], Alberto Schiavo[1], Giovanni Beltrami[2], Rodolfo Capanna[3], Domenico Andrea Campanacci[1] [1]Department of Orthopedic Oncology and Reconstructive Surgery, Careggi Universitary Hospital, Firenze, Italy [2]Department of Paediatric Orthopaedic Oncology, Careggi Universitary Hospital, Firenze, Italy [3]Clinic of Orthopaedics and Traumatology, University of Pisa, Pisa, Italy
PP011	**Osteoarticular allograft with and without ligamentary osseous fixation. Is the extra-surgical work worth it?** Adriana Hernandez Lopez[1], Alejandro Sanchez Hernandez[1], Carlos Eduardo Cuervo Lozano[2] [1]Instituto de Ortopedia, Centro Medico Zambrano Hellion, Tec Salud, San Pedro Garza García, Mexico [2]Departamento de Ortopedia y Traumatología, Hospital "Dr. José Eleuterio González" Universidad Autónoma de Nuevo León, Monterrey, Mexico
PP012	**Limb preservation of the upper extremity using a frozen bone allograft with vascularized fibula and latissimus dorsi flap in a IIIB T2 proximal humerus conventional osteosarcoma: A case presentation** Patricia Bonilla[1], M. Pacheco[2], A. Ríos[2], I. Veliz[3], [1]Hospital del Niño Dr. José Renán Esquivel, Panama City, Panama [2]Complejo Hospitalario Metropolitano, Panama City, Panama [3]Instituto Oncológico Nacional and HOPE Center, Panama City, Panama
PP013	**Distal tibia sarcoma treatment using allograft arthrodesis of the ankle** Patricia Bonilla[1], C. Lores[2], J. Mejia[1], J. Navia[2], Marina Pacheco[3], E. Pedromo[1], M. Medina[1], C. Aguilar4, I. Veliz[4] [1]Hospital del Niño Dr. José Renán Esquivel, Panama City, Panama [2]Hospital Universitario del Valle, Cali, Colombia [3]Centro Hospitalario Metropolitano, Panama City, Panama [4]Instituto Oncológico Nacional, Panama City, Panama

Amputation and rehabilitation

PP014 **Organ-preserving operations with vascular reconstruction for removing of soft tissues tumors of the extremities**
Djamila Polatova, M. Sharipov, A. Suyumov, Mirza Gafur-Akhunov, Khurshid Abdikarimov, Ulugbek Islamov, Alexandr Savkin, Rasul Davletov, Bahridil Sultonov, Nizom Khudoyberdiyev
Republican Specialized Scientific-Practical Medical Centre of Oncology and Radiology, Ministry of Healthcare, Tashkent, Uzbekistan

PP015 **Early outcomes of the Compress® Transdermal Implant System in transhumeral and transfemoral amputations**
Jonathan Forsberg[1], Benjamin Kyle Potter[2]
[1]Department of Orthopaedic Surgery, Johns Hopkins University, Baltimore, United States
[2]Orthopaedics, USU-Walter Reed Department of Surgery, Bethesda, United States

PP016 **Functional and quality of life evaluation of patients with bone tumors submitted to lower limb amputation**
Silvia Wasserstein, Dan Viola, Eliana Caran, Reynaldo Jesus-Garcia
IOP / GRAACC, São Paulo, Brazil

PP017 **Effect of virtual reality augmented physiotherapy for rehabilitation in 54 children following major reconstructive procedures for bone and soft tissues**
Pawar Chetan[1], Sai Paavani Manohar[1], Goyal Sowmya[1], Pramod Chinder[1], Suraj Hindiskere[2]
[1]HCG Hospital, Bangalore, India, [2]The Yellow Ribbon, India

PP018 **Analysis of phantom limb pain and functional outcome after lower limb amputation for musculoskeletal malignancies**
Hiromori Sagae[1], Masato Sugawara[2], Daiichiro Takahara[2], Takashi Tsuchiya[3], Michiaki Takagi[2]
[1]Department of Orthopaedic Surgery, Yamagata Prefectural Kahoku Hospital, Yamagata, Japan
[2]Department of Orthopaedic Surgery, Yamagata University Faculty of Medicine, Yamagata, Japan
[3]Department of Orthopaedic Surgery, Yamagata Saisei Hospital, Yamagata, Japan

PP019 **Rotationplasty - Limb salvage presentation in 5 cases**
Diego Sanches, Márcio Moura, Álvaro Pinto, Sibele Milano, Marcella Villela
Hospital do Trabalhador - UFPR, Curitiba, Brazil

PP020 **Negative pressure wound therapy for lower limb amputation patients - A case control trial**
Brendan Chan, David Shields, Helen Findlay, Ashish Mahendra, Sanjay Gupta
Glasgow Royal Infirmary, Glasgow, United Kingdom

Basic research • Translational research

PP021 **What is the best shape of a drilled hole in treatment of bone tumor?**
Tadashi Iwai, Manabu Hoshi, Naoto Oebisu, Kumi Ogi, Akiyoshi Shimatani, Naoki Takada, Hiroaki Nakamura
Department of Orthopedic Surgery, Osaka City University Graduate School of Medicine, Osaka, Japan

PP022 **Radiation dose deviations by titanium versus CF/PEEK implants in long bones**
Christina Villefort[1], Christoph J. Laux[1], Stefanie Ehrbar[2], Lotte Wilke[2]
Matthias Guckenberger[2], Daniel A. Müller[1]
[1]Balgrist University Hospital, Department of Orthopaedics, Zurich, Switzerland
[2]University Hospital Zurich, Department of Radiation Oncology, Zurich, Switzerland

PP023	**Skeletal muscle cell oxidative stress as a possible therapeutic target for sarcopenia** Hideyuki Kinoshita, Tsukasa Yonemoto, Hiroto Kamoda, Yoko Hagiwara, Toshinori Tsukanishi, Takeshi Ishii Chiba Cancer Center, Chiba, Japan
PP024	**Glycogen synthase kinase-3β is a new therapeutic target in synovial sarcoma and fibrosarcoma** Kensaku Abe[1], Norio Yamamoto[1], Takahiro Domoto[2], Katsuhiro Hayashi[1], Akihko Takeuchi[1], Shinji Miwa[1], Kentaro Igarashi[1], Yu Aoki[1], Takashi Higuchi[1], Yuta Taniguchi[1], Hirotaka Yonezawa[1], Yoshihiro Araki[1], Sei Morinaga[1], Toshinari Minamoto[2], Hiroyuki Tsuchiya[1] [1]Department of Orthopaedic Surgery, Graduate School of Medical Sciences, Kanazawa University, Kanazawa, Japan [2]Division of Translational and Clinical Oncology, Cancer Research Institute, Kanazawa University, Kanazawa, Japan
PP025	**The PARP inhibitor olaparib potentiates the effect of the DNA damaging agent doxorubicin in osteosarcoma** Jung Ryul Kim, Young Jae Moon Chonbuk National University Medical School, Jeonju, South Korea
PP026	**CEP55 promotes the proliferation and invasion of tumor cell via the AKT signaling pathway in osteosarcoma** Jin Xiong, Shoufeng Wang, Benlong Shi Department of Orthopadic, Drum Tower Hospital, Nanjing University Medical School, Nanjing, China
PP027	**Establishment and characterization of a novel osteosarcoma cell line: OSA 1777 FH** Pichaya Thanindratarn, Zhenfeng Duan Department of Orthopedic Surgery, Sarcoma Biology Laboratory, David Geffen School of Medicine, University of California, Los Angeles, United States
PP028	**Anti-tumor effect of the cyclic peptides derived from flaxseed against giant cell tumor of the bone** Yuta Taniguchi, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Hirotaka Yonezawa, Yoshihiro Araki, Sei Morinaga, Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Kanazawa University Hospital, Kanazawa, Japan
PP029	**Effect of low- and high-linear energy transfer radiation on in vitro and orthotopic in vivo models of osteosarcoma by activation of caspase-3 and -9** Won-Seok Song, Chang-Bae Kong Korea Cancer Center Hospital, Seoul, South Korea
PP030	**Effects of mechanical loading on the degradability and mechanical properties of the nanocalcium-deficient hydroxyapatite–multi (amino acid) copolymer composite membrane tube for guided bone regeneration** Zeping Yu, Xiang Fang, Hong Duan West China Hospital, Sichuan University, Chengdu, China
PP031	**Analyzing the behavior of a porous nano-hydroxyapatite/polyamide 66 (n-HA/PA66) composite for healing of bone defects** Zeping Yu, Hong Duan, Xiang Fang West China Hospital, Sichuan University, Chengdu, China

PP032	**Revitalization of frozen autologous bone graft using adipose-derived stem cells** Yu Aoki[1], Norio Yamamoto[1], Katsuhiro Hayashi[1], Hiroaki Kimura[1], Akihiko Takeuchi[1], Shinji Miwa[1], Kentaro Igarashi[1], Hiroyuki Inatani[1], Takashi Higuchi[1], Kensaku Abe[1], Yuta Taniguchi[1], Yoshihiro Araki[1], Naotoshi Sugimoto[2], Hiroyuki Tsuchiya[1] [1]Department of Orthopaedic Surgery, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan [2]Department of Physiology, Graduate School of Medical Science, Kanazawa University, Kanazawa, Japan
PP033	**Tumor-targeting Salmonella typhimurium A1-R is an effective general therapeutic for undifferentiated soft tissue sarcoma patient-derived orthotopic xenograft nude-mouse models** Kentaro Igarashi[1], Norio Yamamoto[1], Katsuhiro Hayashi[1], Hiroaki Kimura[1], Akihiko Takeuchi[1], Shinji Miwa[1], Takashi Higuchi[1], Yuta Taniguchi[1], Hirotaka Yonezawa[1], Yoshihiro Araki[1], Sei Morinaga[1], Robert Hoffman[2], Hiroyuki Tsuchiya[1] [1]Department of Orthopaedic Surgery, Kanazawa University, Kanazawa, Japan [2]Department of surgery, University of California San Diego, San Diego, United States
PP034	**Newly developed bone targeting platinum complex effectively targets cisplatin resistant relapsed osteosarcoma in a patient-derived orthotopic xenograft (PDOX) mouse model** Kentaro Igarashi[1], Norio Yamamoto[1], Katsuhiro Hayashi[1], Hiroaki Kimura[1], Akihiko Takeuchi[1], Shinji Miwa[1], Takashi Higuchi[1], Yuta Taniguchi[1], Hirotaka Yonezawa[1], Yoshihiro Araki[1], Sei Morinaga[1], Robert Hoffman[2], Hiroyuki Tsuchiya[1] [1]Department of Orthopaedic Surgery, Kanazawa University, Kanazawa, Japan [2]Department of surgery, University of California San Diego, San Diego, United States
PP035	**Relationship with adriamycin-resistant osteosarcomas and the pentose phosphate pathway using metabolomic approaches** Keita Sasa[1], Yoshiyuki Suehara[1], Keisuke Akaike[1], Takuo Hayashi[2], Hikari Taka[3], Youngji Kim[1], Taketo Okubo[1], Kazuo Kaneko[1], Tsuyoshi Saito[2] [1]Orthopedic Surgery /Juntendo Univ., Tokyo, Japan, [2]Human Pathology /Juntendo Univ., Tokyo, Japan [3]Laboratory of Proteomics and Biomolecular Science /Juntendo Univ., Tokyo, Japan
PP036	**Preoperative lymphocyte count in relation to musculoskeletal sarcoma prognosis** Nor Faissal Yasin, Seo Soon Teck, Vivek Ajit Singh National Orthopaedic Centre of Excellence for Research and Learning (NOCERAL), University of Malaya, Kuala Lumpur, Malaysia
PP037	**S1P promotes PDGF-A-dependent angiogenesis in human chondrosarcoma via Ras/Raf/MEK/ERK signaling cascade** Yi-Chin Fong[1,2], Chih-Hsin Tang[3] [1]Department of Orthopedic Surgery, China Medical University Beigang Hospital, Yunlin, Taiwan [2]Department of Orthopedic Surgery, China Medical University Hospital, Taichung, Taiwan [3]Department of Pharmacology, School of Medicine, China Medical University, Taichung, Taiwan
PP038	**Comprehensive genomic profiling of patients with favorable prognosis in osteosarcoma** Weifeng Liu[1], Zhen Huang[1], Yanrui Zhang[2], Huina Wang[2], Yongkun Yang[1], Tao Jin[1], Xiaohui Niu[1] [1]Department of Orthopaedic Oncology Surgery, Beijing Ji Shui Tan Hospital, Peking University, Beijing, China [2]Acornmed Biotechnology Co., Ltd, Beijing, China
PP039	**Epigenetic regulation of CXCL12 plays a critical role in mediating both tumor progression and the immune response in osteosarcoma** Binghao Li, Zhan Wang, Zhaoming Ye The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China

PP040	**Inhibitory effects of Indomethacin on human osteosarcoma tumor cells** Saied Mirshahidi[2,5], Rosalia de Necochea-Campion[2], Annie Moretta[2], Nadine Williams[1], Mark Reeves[3], Salman Otoukesh[4], Hamid Mirshahidi[4], Penelope Duerksen-Hughes[5], Lee Zuckerman[1] [1]Loma Linda University Medical Center, Department of Orthopaedic Surgery, Loma Linda, United States [2]Loma Linda University Medical Center, Cancer Center Biospecimen Laboratory, Loma Linda, United States [3]Loma Linda University Medical Center, Department of Surgical Oncology, Loma Linda, United States [4]Loma Linda University Medical Center, Division of Hematology/Oncology, Loma Linda, United States [5]Loma Linda University School of Medicine, Department of Basic Sciences, Loma Linda, United States
PP041	**Tie-2 expressing monocytes are associated with rapid recurrence of giant cell tumor of bone** Yuwarat Monteerarat[1], Sorranart Muangsomboon[2], Rapin Phimolsarnti[1], Saranatra Waikakul[1], Chandhanarat Chandhanayingyong[1] [1]Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Bangkok, Thailand [2]Department of Pathology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand
PP042	**Comparative transcriptome analysis of primary tumor and matched tumor thrombus reveals that coagulation cascades activation contributes to the venous metastases of osteosarcoma** Tao Ji, Haijie Liang, Dasen Li, Wei Guo Peking University, People's Hospital, Beijing, China
PP043	**Infiltration of granulocytic myeloid derived suppressor cells compromises anti-PD-1 efficacy in osteosarcoma** Chuangzhong Deng, Yanyang Xu, Hongmin Chen, Huaiyuan Xu, Jin Wang Musculoskeletal Department, Sun Yat-sen University Cancer Center, Guangzhou, China
PP044	**Temozolomide arrests a doxorubicin-resistant follicular dendritic cell sarcoma patient-derived orthotopic xenograft (PDOX) mouse model** Hiromichi Oshiro[1], Yasunori Tome[1], Tasuku Kiyuna[1], Hiroki Maehara[1], Robert Hoffman[2], Fuminori Kanaya[1] [1]Department of Orthopedic Surgery, Graduate School of Medicine, University of the Ryukyus, Nishihara-cho, Japan [2]Department of Surgery, University of California, San Diego, San Diego, United States
PP045	**High efficacy of combination therapy of mTOR inhibitor and VEGFR inhibitor against doxorubicin resistant osteosarcoma using patient-derived orthotopic xenograft model** Hiromichi Oshiro[1,2], Yasunori Tome[1], Tasuku Kiyuna[1], Hiroki Maehara[1], Robert Hoffman[2], Fuminori Kanaya[1] [1]Department of Orthopedic Surgery, Graduate School of Medicine, University of the Ryukyus, Nishihara-cho, Japan [2]Department of Surgery, University of California, San Diego, San Diego, United States
PP046	**Integrative analysis including whole genome sequencing, transcriptome sequencing, and phospho-protein expression profiling of super responder to pazopanib in high-grade soft tissue sarcomas** Yoshiyuki Suehara[1], Shinji Kohsaka[2], Shigeo Yamaguchi[3], Takuo Hayashi[4], Taisei Kurihara[1], Keisuke Akaike[1], Toshihide Ueno[2], Shinya Kojima[2], Masachika Ikegami[2], Sho Mizuno[2], Kazuo Kaneko[1], Shunsuke Kato[3], Hiroyuki Mano[2], Tsuyoshi Saito[4] [1]Department of Orthopedic Surgery, Juntendo University School of Medicine, Tokyo, Japan [2]Division of Cellular Signaling, National Cancer Center Research Institute, Tokyo, Japan [3]Department of Medical Oncology, Juntendo University School of Medicine, Tokyo, Japan [4]Department of Human Pathology, Juntendo University School of Medicine, Tokyo, Japan

PP047 **The role of Frozen-Nitrogen-Ethanol-Liquid-Composite in Metal-implant-related infections. Shinning a New light on Biofilm-eradication**

Wang Jir-You[1,2,3], Wu Po-Kuei[1,2], Chen Chao-Ming[1,2], Chen Wei-Ming[1,2]
[1]Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan
[2]Department of Orthopaedics, Therapeutical and Research Center of Musculoskeletal Tumor, Taipei Veterans General Hospital, Taipei, Taiwan
[3]Institutes of Traditional Medicine, National Yang- Ming University, Taipei, Taiwan

PP048 **Targeting mutant TP53 as a potential therapeutic strategy for the treatment of osteosarcoma**

Fan Tang, Li Min, Wenli Zhang, Rui Shi, Yong Zhou, Yi Luo, Hong Duan, Chongqi Tu
Department of Orthopeadic, West China Hospital, Sichuan University, Chengdu, China

PP049 **MicroRNA-429 inhibits bone metastasis in breast cancer by regulating CrkL and MMP-9**

Xinxin Zhang[1], Xiying Yu[1], Zhenguo Zhao[1], Zhennan Yuan[1], Zhibin Ye[2], Songfeng Xu[1], Libin Xu[1], Ting Liu[1], Shih-Hsin Lu[1], Shengji Yu[1]
[1]Department of Orthopaedics/National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China
[2]Department of Gastrointestinal Surgery/Hebei General Hospital, Shijiazhuang, China

Benign tumors

PP050 **Comparative study evaluating open versus arthroscopic treatment for tenosynovial giant cell tumors of the foot and ankle**

Shinji Tsukamoto[1], Riccardo Zucchini[2], Eric Staals[2], Andreas Mavrogenis[3], Manabu Akahane[4], Emanuela Palmerini[5], Costantino Errani[2], Kanya Honoki[1], Akira Kido[1], Yasuhito Tanaka[1]
[1]Department of Orthopaedic Surgery, Nara Medical University, Kashihara-city, Japan
[2]Department of Orthopaedic Oncology, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
[3]First Department of Orthopaedics, National and Kapodistrian University of Athens, School of Medicine, Athens, Greece
[4]Department of Public Health, Health Management and Policy, Nara Medical University, Kashihara-city, Japan
[5]Chemotherapy Unit, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy

PP051 **Radiological assessment for pathogenesis of solitary bone cyst in calcaneus**

Manabu Hoshi, Naoto Oebisu, Tadashi Iwai, Akiyoshi Shimatani, Naoki Takada, Hiroaki Nakkamura
Department of Orthopedic Surgery, Osaka City University Graduate School of Medicine, Osaka, Japan

PP052 **Do curettage and cementation can provide local control of Fibrous dysplasia of the proximal radius?**

Ismail Tawfeek Badr[1], Rampal Sanjiv[2], Ahmed Shaheen[1]
[1]Menoufia University Faculty of Medicine, Orthopedic Departement, Menoufia, Egypt
[2]Putra University, Faculty of Medicine, Orthopedic Department, Malaysia

PP053 **A rare case of posterior tibial nerve schwannoma causing tarsal tunnel syndrome**

Levent Berkem[1], Sefa Giray Batibay[2], Mehmet Esat Uygur[3], Korhan Özkan[3]
[1]Goztepe Training and Research Hospital, Department of Orthopaedics and Traumatology, Istanbul, Turkey
[2]Orthopaedics and Traumatology, Derince Training and Research Hospital, Kocaeli, Turkey
[3]Orthopaedics and Traumatology, School of Medicine, Medeniyet University, Istanbul, Turkey

PP054	**Periosteal aneurysmal bone cyst involving proximal femur** Levent Berkem[1], Korhan Özkan[2], Zilan Karadağ[2] [1]Goztepe Training and Research Hospital, Department of Orthopaedics and Traumatology, Istanbul, Turkey [2]Department of Orthopaedics and Traumatology, School of Medicine, Medeniyet University, Istanbul, Turkey
PP055	**Successful total en bloc spondylectomy of the L3 vertebra with a paravertebral giant cell tumor following preoperative treatment with denosumab** Hideyuki Kinoshita, Tsukasa Yonemoto, Hiroto Kamoda, Toshinori Tsukanishi, Yoko Hagiwara, Takeshi Ishii Chiba Cancer Center, Chiba, Japan
PP056	**Giant muscle invasive dermatofibroma clinically mimicking a malignant tumor** Hideyuki Kinoshita, Takeshi Ishii, Hiroto Kamoda, Toshinori Tsukanishi, Yoko Hagiwara, Tsukasa Yonemoto Chiba Cancer Center, Chiba, Japan
PP057	**Clinical features of chondroblastoma: A review of 18 cases** Toru Hirozane[1], Naofumi Asano[1], Kazutaka Kikuta[2], Michiro Susa[3], Itsuo Watanabe[4], Takeshi Morii[5], Masaya Nakamura[1], Morio Matsumoto[1], Robert Nakayama[1] [1]Department of Orthopedic Surgery, Keio University School of Medicine, Tokyo, Japan [2]Department of Musculoskeletal Oncology and Orthopaedic Surgery, Tochigi Cancer Center, Utsunomiya, Japan [3]Department of Orthopedic Surgery, National Defense Medical College, Tokorozawa, Japan [4]Department of Orthopedic Surgery, Tokyo Dental College Ichikawa General Hospital, Ichikawa, Japan [5]Department of Orthopedic Surgery, Kyorin University Hospital, Mitaka, Japan
PP058	**Rare benign bone tumour in rare location** Salim Al-Busaidi AFH Oman, Muscat, Oman
PP059	**Rare tumor of foot** Salim Al-Busaidi Armed Forces Hospital (AFH), Al-Seeb, Oman
PP060	**Direct femoral head approach without dislocation (modified trapdoor procedure) for femoral head chondroblastoma** Hirohisa Katagiri, Mitsuru Takahashi, Hideki Murata, Junji Wasa, Michihito Miyagi Division of Orthopaedic Oncology, Shizuoka Cancer Center Hospital, Nagaizumi-cho, Japan
PP061	**Minimal invasive direct anterior approach versus standard lateral approach in the management of tumor located in the femoral neck** Bo Wang The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China
PP062	**Ethanol as the intra-operative adjuvant in giant cell tumor of bone surgery** Wei-Hsin Lin[1], Shau-Huai Fu[2], Chia-Che Lee[1], Hsiang-Chieh Hsieh[3], Shin-Yin Lin[1], Rong-Sen Yang[1] [1]Department of Orthopedics, National Taiwan University Hospital, Taipei City, Taiwan [2]Department of Orthopedics, National Taiwan University Hospital Yun-Lin Branch, Yun-Lin County, Taiwan [3]Department of Orthopedics, National Taiwan University Hospital Hsinchu Branch, Hsinchu City, Taiwan
PP063	**En block resection and osteoarticular allograft reconstruction of Grade 3 giant cell tumor of bone. Long term follow-up results** Jose Ignacio Albergo, German Farfalli, Angeles Cabas-Geat, Miguel Ayerza, Pablo Roitman, Luis Aponte-Tinao Hospital Italiano De Buenos Aires, Caba, Argentina

PP064	**Clinical results of treatment for recurrent giant cell tumors of bone after administrated denosumab and curettage** Osamu Dohi[1], Masahito Hatori[1], Masami Hosaka[2], Koshi Kishimoto[1], Satoshi Kotajima[1], Mika Watanabe[3], Shin Hitachi[4] [1]Dept. of Orthop. Surg., Tohoku Kosai Hospital, Sendai, Japan [2]Dept. of Orthop. Surg., Miyagi Cancer Center, Sendai, Japan [3]Dept. of Pathol., Tohoku Univ. Hosp., Sendai, Japan [4]Dept. of Diag., Radiol., Tohoku Univ. Hosp., Sendai, Japan
PP065	**Does the percutaneous sclerotherapy with absolute alcohol present a safe and efficient treatment of the aneurysmal bone cysts by children?** Rodanthi Margariti, Panagiotis Kolovos, Eftichios Papagrigorakis, Nikolaos Kotsakis, Dimitris Papadopoulos, Christos Babouris, Panagiotis Sourilas, Panagiotis Megremis, Christos Zambakides General Children's Hospital of Athens "P & A Kiriakou", Athens, Greece
PP066	**Treatment of benign tumors of femur neck by extended Watson Jones approach combined with superior-gluteal-vessels-gluteus-minimus-greater-trochanter-bone-flap (SGVGMGTBF)** Shuangwu Dai, Haomiao Li, Zixiong Lei, Changhe Hou The Third Affiliated Hospital of Southern Medical University, Guangzhou, China
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PP071	**Clinical outcome of giant cell tumor of bone of the proximal fibula** Masato Saito[1], Kazutaka Kikuta[2], Yoshihisa Suzuki[3], Hideo Morioka[4], Naofumi Asano[1], Masaya Nakamura[1], Morio Matsumoto[1], Robert Nakayama[1] [1]Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan [2]Department of Musculoskeletal Oncology and Ortopaedic Surgery, Tochigi Cancer Center, Tochigi, Japan [3]Department of Orthopaedic Surgery, Tachikawa Hospital, Tokyo, Japan [4]Department of Orthopaedic Surgery, National Hospital Organization Tokyo Medical Center, Tokyo, Japan
PP072	**Proximal femur giant cell tumor: When to conserve and when to replace** Florencio Vicente Segura, Florencio Pablo Segura, Facundo Manuel Segura National University of Córdoba. Department of Orthopaedics., Córdoba, Argentina

PP073	**Lesions in tuberosity of tibia that mimicking Osgood-Schlatter disease** Masoud Mirkazemi, Khodamorad Jamshidi Iran University of Medical Sciences, Tehran, Iran
PP074	**Thrombosed popliteal artery pseudoaneurysm as presentation sign of a solitary osteochondroma** Laura Izquierdo[1], Salvador Ausina, Alberto Miñano[2], María Carmen Castro[1], María José Mayol[1], Iván Pérez [1]San Juan University Hospital, Alicante, Spain, [2]Alicante General University Hospital, Alicante, Spain
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PP078	**Spontaneous hyperplastic callus formation in osteogenesis imperfecta, mimicking chondrogenic bone tumor** David Yung, Masato Saito, Toru Hirozane, Naofumi Asano, Robert Nakayama Department of Orthopaedic Surgery, Keio University School of Medicine, Tokyo, Japan
PP079	**"UmbrellaConstruct" – An innovative technique for locally aggressive benign bone tumors of proximal humerus** Ashish Gulia, Srinath Gupta, Vineet Kurisunkal, Ajay Puri Tata Memorial Hospital, Mumbai, India
PP080	**Comparison of point counting and planimetry methods for estimation of bone cyst volume using computer tomography images: A stereological study** Murat Golpinar[1], Ferhat Say[2], Nuket Gocmen Mas[3], Bunyamin Sahin[4] [1]Department of Anatomy, Faculty of Medicine, Hitit University, Çorum, Turkey [2]Department of Orthopaedics and Traumatology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey [3]Department of Anatomy, Faculty of Medicine, Dokuz Eylül University, İzmir, Turkey [4]Department of Anatomy, Faculty of Medicine, Gazi Osmanpaşa University, Tokat, Turkey
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PP082	**Recurrent giant cell tumors of bones - Management principles and functional outcome in a series of 24 patients** Umesh Yadav Pgims Rohtak, Rohtak, India

PP083 **Osteoid osteoma of the triquetrum: Case report of an unusual tumor location**
Alparslan Yurtbay[1], Hikmet Çinka[1], Ferhat Say[1], Sancar Barış[2], Fevziye Canbaz Tosun[3], Sibel Uçak Semirgin[3]
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Bone sarcomas

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Benjamin Wilke[1], Anna Cooper[3], C. Parker Gibbs[2], Mark Scarborough[2], Andre Spiguel[2]
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PP085 **Physeal distraction during surgical treatment of osteosarcoma of the femur**
Yao Weitao
He Nan Cancer Hospital, Zheng Zhou City, China

PP086 **Prognosis analysis of preoperative arteriovenous dual pathway chemotherapy in limb salvage surgery of osteosarcoma**
Shiquan Zhang, Wei You, Chuanxi Zheng, Hao Chen
Shenzhen University First Affiliate Hospital, Shenzhen, China

PP087 **Expression of vascular endothelial growth factor (VEGF) in osteosarcoma patients**
Djamila Polatova
Republican Specialized Scientific-Practical Medical Centre of Oncology and Radiology, Ministry of Healthcare, Tashkent, Uzbekistan

PP088 **Drug resistance as an important prognostic factor in osteosarcoma**
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PP089 **Chondrosarcoma of the shoulder girdle behave differently depending on the location of the tumour**
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PP090 **Hemicortical resection indications in parosteal osteosarcoma**
Osman Emre Aycan[1], Harzem Özger[2], Bugra Alpan[3], Natig Valiyev[1]
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PP091 **Clinical outcome of dedifferentiated low-grade osteosarcoma**
Eisuke Kobayashi[1], Shunichi Toki[1], Akihiko Yoshida[2], Akira Kawai[1]
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PP092	**Osteosarcoma as secondary malignancy in patients following retinoblastoma** Yongsung Kim[1], Woo Young Jang[3], Ilkyu Han[1], Hwan Seong Cho[2], Han-Soo Kim[1] [1]Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, South Korea [2]Department of Orthopaedic Surgery, Seoul National University Bundang Hospital, Seongnam, South Korea [3]Department of Orthopaedic Surgery, Korea University Anam Hospital, Seoul, South Korea
PP093	**Potential molecular biological markers of tumor growth in osteosarcoma** Djamila Polatova, Mirza Gafur-Akhunov, Nargiza Karimova Republican Specialized Scientific-Practical Medical Centre of Oncology and Radiology, Ministry of Healthcare, Tashkent, Uzbekistan
PP094	**Distant soft tissue metastasis in a patient of osteosarcoma distal femur with pulmonary metastases** Roshan Banjara, Sushma Thapa, Abdul Majeed, Venkatesan Sampath Kumar, Shah Alam Khan Department of Orthopaedics, All India Institute of Medical Sciences, New Delhi, India
PP095	**Ewing's sarcoma of the lumbar spine in an adult** Abigail Tud, Richard Rotor Philippine Orthopedic Center, Quezon City, Philippines
PP096	**Biological reconstruction of the bone in bone sarcoma in children using external fixation systems** Panagiotis Kolovos, Rodanthi Margariti, Dimitrios Papadopoulos, Panagiotis Sourilas, Panagiotis Megremis, Christos Zambakides General Hospital of Children "Aglaia Kyriakou", Athens, Greece
PP097	**The effect of type of surgery for outcome in low-grade chondrosarcoma** Edwin Dierselhuis[1], Krista Goulding[2], Martin Stevens[3], Paul Jutte[3] [1]Department of Orthopaedics, Radboudumc, Nijmegen, Netherlands [2]Department of Orthopaedics, Mayo Clinic- Arizona, Phoenix, United States [3]Department of Orthopaedics, University Medical Center Groningen, University of Groningen, Groningen, Netherlands
PP098	**Metastasis in the contralateral epiphysis in distal femoral osteosarcoma patients: A report of two cases** Ioannis Papanastassiou[1], Olga Savvidou[2], Kostantinos Tolis[3], Nikolaos Stavropoulos[2], John Healey[4], Panayiotis J. Papagelopoulos[2] [1]General Oncological Hospital Kifisias "Agioi Anargyroi", Athens, Greece [2]First Department of Orthopaedic Surgery, National and Kapodistrian University of Athens, School of Medicine, "Attikon" University General Hospital, Athens, Greece [3]Hand surgery/Upper limb Microsurgery Department, General Hospital KAT, Athens, Greece [4]Memorial Sloan Kettering Cancer Center, Athens, Greece
PP099	**What is the current trend of treatment for high-grade osteosarcoma? Limb salvage surgery versus amputation: A systematic review** Sherly Desnita Savio, Maria Florencia Deslivia, I Gede Eka Wiratnaya Orthopaedics and Traumatology Department, Faculty of Medicine Udayana University, Sanglah General Hospital, Denpasar, Indonesia
PP100	**Osteosarcoma in elderly patients: A report of 10 cases** Ka Li, Jianmin Li, Zhiping Yang, Xin Li, Zhenfeng Li, Qiang Yang Department of Orthopedics, Qilu Hospital of Shandong University, Jinan, China

PP101 **The combination of amygdalin with some anti-cancer, anti-parasitic, and anti-inflammatory drugs against MG63 and FL cells in vitro**
Davut Aydın[1], Ali Aydın[2], Korhan Özkan[3], Fuat Akpınar[3], Şaban Tekin[4]
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PP102 **Functional and oncological outcomes in extraarticular resection and reconstruction limb salvage surgery for bone and soft tissues involving the joint**
Kishore Reddy[1,2,3], Rajashekar Danda[2], Pavan Murari[2], Abhilash Kumar[3]
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PP103 **Primary bone leiomyosarcoma in distal femur metastatic to clavicle: A case report**
Francisco Linares[1], Helbert Martin[1], Natalia Correal[2]
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PP104 **Synchronous multicentric osteosarcoma: A report of 5 cases**
Yoshihiro Araki, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Takashi Higuchi, Kensaku Abe, Yuta Taniguchi, Hirotaka Yonezawa, Sei Morinaga, Hiroyuki Tsuchiya
Kanazawa University Hospital, Kanazawa City, Japan

PP105 **C-reactive protein and neutrophil counts as a predictor of metastasis in patients with osteosarcoma**
Yoshihiro Araki, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Takashi Higuchi, Kensaku Abe, Yuta Taniguchi, Hirotaka Yonezawa, Sei Morinaga, Hiroyuki Tsuchiya
Kanazawa University Hospital, Kanazawa City, Japan

PP106 **Does preoperative radiotherapy reduce recurrence rates and increase survival in high grade osteosarcoma of the extremities?**
Mahmut Kursat Ozsahin[1], Murat Hiz[1], Bedri Karaismailoglu[2], Suat Ulutas[1]
[1]Cerrahpasa Medical Faculty Orthopaedics And Traumatology, Istanbul, Turkey
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PP107 **Long-term follow-up of 7 periosteal Ewing 'cases. Key points for surgery**
Fabrice Delepine[1], Gerard Delepine[2]
[1]Clinique Du Parc Imperial, Nice, France, [2]APHP (retired), Drancy, France

PP108 **Chondrosarcoma: Clinical features, follow up and prognostic factors. Twenty years of experience in a single institution**
Juan Pablo Zumarraga[1], André Mathias Baptista[2], Whinsgton Pereira de Souza[2], David Herrera Moreano[2], Olavo Pires de Camargo[2]
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PP109 **Primary intra osseous synovial sarcoma: A series of 7 cases with review of literature**
Vishnu Ramanujan, Anand Raja, Chandrakumar Krishnan, Mayilvahanan Natrajan
Cancer Institute (WIA), Adyar, Chennai, India

PP110	**Biological extramedullary fixation in limb salvage surgery with HA collars** Ioannis Papakostas, Giakoumis Diakoumis, Serafeim Sarafopoulos, Spyros Valvis, Sofia Dara, Theodoros Kormas Department of Orthpedic Surgery and Oncology, St. Savvas Hospital, Athens, Greece
PP111	**Extremity chondrosarcoma - Survival and prognostic factors in South Indian patients** Chandra Kumar Krishnan, Vishnu Ramanujan, Anand Raja, Mayilvahanan Natarajan Cancer Institute (WIA), Chennai, India
PP112	**Relationship between height at diagnosis and Osteosarcoma in the Indian population** Venkatesan Sampath Kumar, Roshan Banjara, Rishi Ram Poudel, Abdul Majeed, Muthu Kumaran, Shah Alam Khan Dept. of Orthopaedics, All India Institute of Medical Sciences, New Delhi, India
PP113	**Funcitonal and oncological outcomes of surgical resection of malignant primary clavicle tumors** Srinath Gupta, Ashish Gulia, Prakash Nayak, Ajay Puri, Vineet John Kurisunkal, Prateek Hegde, Ashwin Prajapati, Navaneeth Kamath Tata Memorial Hospital, Mumbai, India
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PP115	**Adamantinoma: Long-term follow-up study of 20 patients treated at a single institution** Daniel Prince, Eugenia Schwarzkopf, Yoely Tavarez, John H. Healey, Narasimhan Agaram, Molly Klima Memorial Sloan Kettering Cancer Center, New York, United States
PP116	**Preoperative surgical risk stratification in osteosarcoma based on the proximity to the major vessels** Tomohiro Fujiwara, Manuel Medellin, Andrea Sambri, Jan Balko, Vaiyapuri Sumathi, Yusuke Tsuda, Scott Evans, Jonathan Stevenson, Michael Parry, Jonathan Gregory, Lee Jeys, Adesegun Abudu Royal Orthopaedic Hospital, Birmingham, United Kingdom
PP117	**The dilemma Surgery/Radiotherapy in Children with Ewing sarcoma of bone** Marco Manfrini[1], Silvia Cammelli[2], Massimo Eraldo Abate[1], Alessandra Longhi[1], Laura Campanacci[1], Davide Donati[1] [1]Istituto Ortopedico Rizzoli, Bologna, Italy [2]Radiation Oncology Center - DIMES - University of Bologna, Bologna, Italy

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Azura Mansor, Rishi Ram Poudel, Mandeep Pratak, Nor Faissal Yasin, Vivek Ajit Singh
University of Malaya Medical Centre, Kuala Lumpur, Malaysia

PP119 **3 year follow-up of recurrent inflammatory myofibroblastic tumor of the posterior neck in a 53 year old male - A case report**
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Clinical trial • Chemotherapy • Immunotherapy

PP120 **When to resect: Fixed or flexible neoadjuvant chemotherapy**
Sudhir Kumar Garg, Kisley Dimri, Purnima Aggarwal, Rajinder Pal Singh Punia
Government Medical College & Hospital, Chandigarh, India

PP121 **A single-institution retrospective study: Clinical outcome of pazopanib for the treatment of soft-tissue sarcomas**
Naoki Takada, Naoto Oebisu, Manabu Hoshi, Tadashi Iwai, Akiyoshi Shimatani, Hiroaki Nakamura
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PP122 **Complete regression of metastatic embryonal rhabdomyosarcoma in a young adult secondary to postoperative wound infection following limb salvage surgery**
Andrew Fang, Lee Jae Morse
The Permanente Medical Group, Oakland, United States

PP123 **Phase I/II study of immunotherapy with dendritic cells pulsed with autologous tumor lysate in patients with refractory sarcoma**
Shinji Miwa, Hideji Nishida, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Takashi Higuchi, Yuta Taniguchi, Hirotaka Yonezawa, Sei Morinaga, Hiroyuki Tsuchiya
Department of Orthopaedics, Kanazawa University, Kanazawa, Japan

PP124 **High dose chemotherapy and autologous stem cell transplantation improves survival of patients with osteosarcoma which respond poorly to neoadjuvant chemotherapy**
Che Ry Hong[1], Kyung Taek Hong[1], Jung Yoon Choi[1], Han-Soo Kim[2], Yongsung Kim[2], Sung-Hye Park[3], Hyoung Jin Kang[1], Hee Young Shin[1]
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PP125 **Efficacy of neoadjuvant chemotherapy for Synovial sarcoma: Retrospective analysis based on a nationwide database**
Hisaki Aiba[1,2], Satoshi Yamada[1], Xu Gang[2], Norio Yamamoto[2], Hiroyuki Tsuchiya[2], Hideki Murakami[1], Akira Kawai[3]
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Outcomes of treatment of compartment syndrome in orthopedic oncology patients

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Perioperative surgical antibiotic prophylaxis in prthopaedic oncology: Which antibiotic is adequate for resection of soft tissue sarcomas in the adductor and gluteal area

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Risk factors for wound complications following resection of high-grade soft tissue sarcomas

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Complication profiles in secondary revisions of tumor endoprosthetic reconstruction around the knee

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Postoperative complications, functional and clinical outcome of elderly patients with primary high grade malignant musculoskeletal tumors

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Revision megaendoprosthetic reconstructions after tumor prosthesis replacement

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Sarcopenia is associated with increased mortality and complications following sarcoma resection in the extremities

Benjamin Miller, Nathan Hendrickson
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Implant and limb survival after resection of bone tumors of the lower extremities and reconstruction with mega-prostheses

Christina Holm, Michala Skovlund Sørensen, Müjgan Yilmaz, Michael Mørk Petersen
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Silver-coated versus standard endoprostheses in the treatment of lower extremity osteosarcomas – A cost-effectiveness analysis

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PP135	**Revision of custom 3D printed pelvic implants – Lessons learned** Richard Boyle[1], Daniel Franks[1], Natalie Bennell[2] [1]Royal Prince Alfred Hospital Sarcoma Unit, Sydney, Australia, [2]OSSIS, Christchurch, New Zealand
PP136	**Surgical management of pathological fractures of the femur after radiation therapy due to soft tissue tumor** Wanlim Kim, Jung-Jae Kim, Jong-Seok Lee Asan Medical Center, Seoul, South Korea
PP137	**Long term results of infected massive prostheses treatment by high dose vancomycin loaded spacers** Fabrice Delepine[1], Gerard Delepine[2], Salwa Alkhallaf[3] [1]Clinique Du Parc Imperial, Nice, France , [2]APHP (retired), Drancy, France , [3]Centre Médicosocial, Paris, France
PP138	**Implant survival and mode of failure of tumour endoprosthesis after lower limb tumour resection** Takeshi Hirose, Shintaro Iwata, Fumihiko Nakatani, Eisuke Kobayashi, Takeshi Komatsubara, Jun Sugaya, Akira Kawai National Cancer Center Hospital, Tokyo, Japan
PP139	**Salvage limb salvage in lower limb reconstruction with Megasystem C** Francesco Muratori[1], Filippo Frenos[1], Guido Scoccianti[1], Maurizio Scorianz[1], Xhulio Prifti[1], Alberto Schiavo[1], Saverio Bartolini[1], Giovanni Beltrami[2], Rodolfo Capanna[3], Domenico Andrea Campanacci[1] [1]Department of Orthopedic Oncology and Reconstructive Surgery, Firenze, Italy [2]Department of Paediatric Orthopaedic Oncology, Careggi Universitary Hospital, Firenze, Italy [3]Clinic of Orthopaedics and Traumatologyl, University of Pisa, Pisa, Italy
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PP141	**Total femoral reconstruction after sarcoma resection, a retrospective analysis of 31 patients** Julian Röder, Jan Christoph Theil, Georg Gosheger, Jan Schwarze, Kristian Nikolaus Schneider, Thomas Ackmann, Niklas Deventer, Dimosthenis Andreou Universitätsklinikum Münster Klinik für Allgemeine Orthopädie und Tumororthopädie, Münster, Germany
PP142	**Bone cement pulmonary embolism - A case report** Navaneeth Kamath, Ashish Gulia, Ajay Puri, Prakash Nayak, Prateek Hegde, Srinath Gupta, Ashwin Prajapati, Vineet Kurisunkal Tata Memorial Hospital, Mumbai, India.
PP143	**Use of antibiotic spacers for knee endoprosthesis infections treatment** Dan Viola, Reynaldo Jesus-Garcia, Jairo Garcia, Henrique Rodrigues, Vinicius Mazzolin, Nathalia Oliveira UNIFESP/GRAACC, São Paulo, Brazil

Diagnostic imaging

PP144 **Diagnosing soft tissue tumors – Are radiology reports from non-cancer centers equally precise?**
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PP145 **Incremental direct imaging costs due to non-referring sarcoma patients**
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PP146 **Evaluation of interobserver reliabilty between MRI features and histopathological findings in soft tissue sarcoma**
Nor Hazla Mohamed Haflah, Way Siong Ho, Sharifah Majedah Idrus Alhabshi, Abdul Yazid Mohd Kassim
Universiti Kebangsaan Malaysia, Cheras, Malaysia

PP147 **Prediction of response to neoadjuvant chemotherapy in osteosarcoma using Dual-phase 18F-FDG PET/CT**
Chang-Bae Kong, Byung Hyun Byun, Won Seok Song
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PP148 **Development of multifocal extra-abdominal desmoid fibromatosis after surgical resection**
Nadine Williams, Omar Ramos, Alex Mierke, Lee Zuckerman
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PP149 **Intracardiac migration of a steinman pin after shoulder arthrodesis: A case report**
Ramon Mariano Najarro II, Judith Valerie Akol
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PP150 **Going in from the back! Posterior approach to proximal humerus resection and endoprosthesis replacement**
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PP151 **Reversible intra-operative cardiac arrest during intramedullary reaming of femoral metastasis: A case report**
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PP152 **Salvaging the limb salvage: Preoperative use of radiotherapy in recurrent osteosarcoma**
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Functional results and quality of life

PP153 **Functional result of using custom-made bipolar to reconstruct for proximal femur lesions**
Cheng-Han Lin, Karl Wu
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PP154 **Similar local recurrence but better function with curettage versus resection for bone giant cell tumor and pathological fracture at presentation**
Shinji Tsukamoto[1], Andreas Mavrogenis[2], Piergiuseppe Tanzi[3], Giulio Leone[4], Alberto Righi[5], Manabu Akahane[6], Akira Kido[1], Kanya Honoki[1], Yasuhito Tanaka[1], Davide Donati[3], Costantino Errani[3]
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PP155 **A comparison of limb salvage versus amputation for non-metastatic sarcomas using PROMIS outcomes**
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PP156 **Treating metastatic pathological fracture of the proximal humerus with the intramedullary nail**
Cheng-Han Lee, Karl Wu
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PP157 **Functional evaluation for patients with lower extremity sarcoma: application of the Chinese version of Musculoskeletal Tumor Society scoring system**
Shoufeng Wang, Jin Xiong, Benlong Shi
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PP158 **Postoperative function and walking ability of hip transposition following resection of pelvic sarcoma**
Toshiyuki Kunisada[1], Eiji Nakata[1], Joe Hasei[1], Masuo Senda[2], Toshifumi Ozaki[1]
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PP159 **Total femoral prosthesis replacement following resection of femoral malignant tumors**
Hong Duan, Xiang Fang, Zeping Yu
West China Hospital, Sichuan University, Chengdu, China

PP160	**The functional outcome of shoulder joint after tumor excision of shoulder girdle** Toshiharu Shirai[1,2], Ryu Terauchi[1], Shinji Tsuchida[1], Naoki Mizoshiri[1], Yuki Mori[1], Daichi Hayashi[1], Hiroyuki Tsuchiya[2], Toshikazu Kubo[1] [1]Department of Orthopaedics, Kyoto Prefectural University of Medicine, Kyoto, Japan [2]Department of Orthopaedic Surgery, Kanazawa University, Kanazawa, Japan
PP161	**A systematic review of the functional outcome of endoprosthetic reconstruction for tumours around the knee in adults** Oluwaseyi K. Idowu[1], Mohamad Nasser[1], Michelle Maden[1], Adesegun T. Abudu[2] [1]Edge Hill University, Ormskirk, United Kingdom, [2]Royal Orthopaedic Hospital, Birmingham, United Kingdom
PP162	**Impact of orthopaedic management on skeletal metastasis; Early experience** Praveen Gupta Bhagwan Mahaveer Cancer Hospital & Research Center, Jaipur, India
PP163	**Rotationplasty in skeletally mature patients: A case series** Marjorie Sierra, Rafael Claudio, Richard Rotor, Jesus Adrian Duenas Musculoskeletal Tumor Service, Philippine Orthopedic Center, Quezon, Philippines
PP164	**Expandable endoprosthesis for bone sarcomas in children: Medium term functional outcomes** Surasak Prachapipat, Chandhanarat Chandhanayingyong, Apichat Asavamongkolkul, Saranatra Waikakul, Rapin Phimolsarnti Department of Orthopaedic Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand
PP165	**A time-based functional outcome evaluation following soft tissue sarcoma resections at a single Centre in Malaysia: Clinicians' vs patients' perspective** Azura Mansor, Venotha Madhialagan, Nor Faissal Yasin, Vivek Ajit Singh University of Malaya Medical Centre, Kuala Lumpur, Malaysia
PP166	**Autograft reconstruction after excision of primary bone tumors: Outcomes of patients seen at University of Santo Tomas Hospital** Martin Louie Bangcoy, Charles Abraham Villamin University of Santo Tomas Hospital, Manila, Philippines
PP167	**A case of myopericytoma in the quadriceps femoris muscle with gait disturbance without diagnosis and definitive treatment for 8 years** Yuichi Ichikawa, Jun Nishida, Takashi Koyama, Taro Nagai, Kengo Yamamoto Dept. of Orthop. Surg., Tokyo Medical Univ., Tokyo, Japan
PP168	**Comparative study of the standard intramedullary fixation of the bone metastasis associated or not with polimetilmetacrilate** Marcio Moura, Diego Sanches, Alvaro Ferreira Pinto, Sibele Sauzem Milano, Marcella Maria Villela Federal Inversity of Parana, Curitiba, Brazil
PP169	**Effects of exercise in patients with bone and soft tissue sarcomas: A literature study** Evanthia Mitsiokapa, Andreas Mavrogenis, Panayiotis J. Papagelopoulos National and Kapodistrian University of Athens, Athens, Greece
PP170	**Respiratory condition after partial sternal resection in two sarcoma cases treated with chest wall reconstruction of muscle flap** Toshinori Tsukanishi, Tsukasa Yonemoto, Hiroto Kamoda, Youko Hagiwara, Hideyuki Kinoshita, Takeshi Ishii Chiba Cancer Center, Chiba, Japan

PP171	**The functional outcome comparison of limb salvage surgery versus amputation for patients with high-grade osteosarcoma: A meta-analysis of the last 7-years studies** Sherly Desnita Savio, Maria Florencia Deslivia, Putu Astawa, I Gede Eka Wiratnaya Orthopaedics and Traumatology Department, Faculty of Medicine Udayana University, Sanglah General Hospital, Denpasar, Indonesia
PP172	**Ribbing disease in Oncólogos Del Occidente Oncology Clinic** Alvaro Bernal[1], Alberto Alvarado[2], Jose Martinez[3] [1]Orthopedic Oncology Service of Oncologos Del Occidente Oncology Clinic, Pereira, Colombia [2]Pathology Service of Oncologos del Occidente Oncology Clinic, Pereira, Colombia [3]Research Group of Oncologos del Occidente Oncology Clinic, Pereira, Colombia
PP173	**Use of prolene mesh as reconstruction modality to prevent instability after distal fibula resection for tumor** Ashwinkumar Prajapati Prajapati, Ashish Gulia, Srinath Gupta, Vineet Kurisunkal, Hegde Prateek, Navaneeth Kamath, Prakash Nayak, Ajay Puri Tata Memorial Hospital, Mumbai, India
PP174	**Outcomes of short segment (less than 6cm) distal radius resections and wrist fusion with iliac crest bone grafting** Ashwinkumar Prajapati Prajapati, Gulia Ashish, Vineet Kurisunkal, Srinath Gupta, Prateek Hegde, Navaneeth Kamath, Prakash Nayak, Ajay Puri Tata Memorial Hospital, Mumbai, India
PP175	**Percutaneous cementoplasty on the management of painful osteolytic lesions of the acetabulum** Fábio Elói Pinto, Juliane Comunello, Suely Nakagawa, Tu Chung Wu A.C.Camargo Cancer Center, São Pauo, Brazil

Innovative treatments

PP176	**Provisional knee arthrodesis using the SIGN nail following proximal tibial resection can allow subsequent megaprosthetic limb salvage in low-resource settings** Mamer Rosario[1], Alvin Hernandez[1], Stephen Joseph Garcia[2], Paul Christian Bejosa[1], Pauline Del Rosario[1], Reynald Angelo Reyes[1], Erika Paulina Stefani See[1], Romer Ariel Santos[1], Misael Jonathan Ticman[1], Avelino Alomesen[3] [1]Department of Orthopaedics, East Avenue Medical Center, Quezon City, Philippines [2]Department of Medicine, East Avenue Medical Center, Quezon City, Philippines [3]Department of Pathology, East Avenue Medical Center, Quezon City, Philippines
PP177	**The application of 3D-printing technology in pelvic bone tumor surgery** Jong Woong Park[1], Hyun Guy Kang[1], June Hyuk Kim[1], Han-Soo Kim[2] [1]National Cancer Center, Goyang, South Korea [2]Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, South Korea
PP178	**Bone tumor resection guide using 3D-printing for limb salvage surgery** Jong Woong Park[1], Hyun Guy Kang[1], June Hyuk Kim[1], Han-Soo Kim[2] [1]National Cancer Center, Goyang, South Korea [2]Department of Orthopaedic Surgery, Seoul National University Hospital, Seoul, South Korea
PP179	**Discussion about microwave ablation therapy** Qingyu Fan Fourth Military Medical University, Xi'an, China

PP180	**The secondary revision surgery with cemented custom-made tumor prostheses: A clinical case report** Shiquan Zhang, Wei You, Chuanxi Zheng, Hao Chen Department of Orthopedic and Musculoskeletal Tumor, Shenzhen Second People's Hospital, First Affiliated Hospital of Shenzhen University, Shenzhen, China
PP181	**Impact and importance of international clinical collaboration on quality of orthopaedic cancer care** Pramod S. Chinder[1], Giovanni Beltrami[4], Marco Manfrini[3], Marco Colangeli[3], Suraj Hindiskere[2] [1]HCG Hospital, Bangalore, Bangalore, India [2]The Yellow Ribbon, Karnataka, India [3]Istituto Ortopedico Rizzoli, Bologna, Italy [4]Azienda Ospedaliero Universitaria Careggi, Florence, Italy
PP182	**Customized 3D endoprosthesis of the proximal tarsal phalanx for treatment of bone tumour: Finite element analysis** Surasak Prachapipat[1], Korakod Srikong[2], Natthapob Lakdee[2], Chedtha Puncreobutr[2], Boonrat Lohwongwatana[3], Rapin Phimolsarnti[1], Chandhanarat Chandhanayingyong[1] [1]Departmet of Orthopaedic Surgery, Faculty of medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand [2]Meticuly Company Limited, Bangkok, Thailand [3]Department of Metallurgical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand
PP183	**Iliotibial tract flap for proximal femur tumor replacemented by megaprosthesis - Walking without claudication or supports** Marcio Moura[1], Olavo Pires de Camargo[2], Diego Sanches[1] [1]Federal University of Parana, Curitiba, Brazil, [2]Sao Paulo University, Sao Paulo, Brazil
PP184	**Nano-pillared titanium surfaces to prevent periprosthetic infections following limb salvage surgery** Richard Boyle[1], Dan Barker[2], Toby Brown[2], Krasi Vasilev[3], Daniel Fernandes[3] [1]Royal Prince Alfred Hospital Sarcoma Unit, Camperdown, Australia [2]Corin Australia, Sydney, Australia [3]University of South Australia, Adelaide, Australia
PP185	**Osseointegration potential of mesenchymal stem cells on porous 3D-printed Ti6Al4V scaffolds** George Vicatos, Esther Vernon (nee van Heerden) Attri Orthopaedics Pty Ltd - University of Cape Town, Cape Town, South Africa
PP186	**Ewing sarcoma 3D reconstruction. Right hand first metacarpal** Gaston Chiesa, Alejandro Ramaciotti, Pablo Sayago, Gabriel Martinez Lotti COT-HPR, Rosario, Argentina
PP187	**Preoperative embolization in hypervascular metastatic or primary tumors** Ji Won Lee[1], Yang-guk Chung[1], Seung Han Shin[1], Hae-Kyoo Lee[2], Yong-Koo Kang[3] [1]Department of Orthopedic Surgery, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, South Korea [2]Department of radiology, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, South Korea [3]Department of Orthopedic Surgery, Pyeongtaek St. Mary's Hospital, Pyeongtaek, South Korea

PP188 **Bone remodelling of curetted benign tumours treated with elastic osteosynthesis, analysed by computed tomography**
Edgard E Engel[1], Henrique M Natalin[1], Mariana DS Pontes[1], Tiago R Mascarenhas[1], Nelson F Gava[1], Marcello H Nogueira-Barbosa[2]
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PP189 **Applications of carbon fiber Intramedullary nails in orthopaedic oncology**
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PP190 **High hip center tumor endoprosthesis reconstruction in periacetabular defects after internal hemipelvectomy**
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Joint-sparing surgery

PP191 **One-stage management with curettage and internal fixation for GCTB with pathologic fracture**
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PP192 **Intercalary reconstruction using irradiated autologous bone graft with vascularized fibular graft as limb saving surgery for malignant tumors – The Philippine experience**
Mary Rose Gonzales, Daniela Kristina Carolino, Richard Rotor, Edwin Joseph Guerzon, Henry Gerard Calleja, Jessica Anne Gandionco
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PP193 **Customed segmental prostheses compared with bone graft to reconstruct the bone defect after resection of diaphyseal tumor**
Zi Xiong Lei, Hao Miao Li, Ming Lu, Chang He Hou, Shao Hua Du, Wei Chen
The 3rd Affiliated Hospital of Southern Medical University, Guang Zhou, China

PP194 **Articular degeneration after subchondral cementation of giant cell tumors at the knee**
Cyrill Wechsler, Sandro Hodel, Christoph Laux, Christoph Stern, Andrea Rosskopf, Daniel Müller
University Hospital Balgrist, Zürich, Switzerland

PP195 **Plate Assisted Bone Segment Transport (PABST) with motorized lengthening nails and locking plates - A technique to treat femoral and tibial bone defects**
Daniel Eduardo Prince[1], John Herzenberg[2], Ulrik Kahler Olsen[3], Tobias Nygaard[3], Matthew P Gardner[4], Upender Martin Singh[3], Martin A. McNally[5], Connor J. Green[6]
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PP196 **Sarcomas occurring around the elbow – Clinicopathological features and outcomes**
Jun Sugaya, Shintaro Iwata, Fumihiko Nakatani, Eisuke Kobayashi, Takeshi Komatsubara, Akira Kawai
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PP197 **Musculoskeletal sarcomas: Where vascular and orthopedic oncology surgery overlap**
Andrea Angelini[1], Elisa Pagliarini[1], Michele Piazza[2], Andrea Spertino[2], Pietro Ruggieri[1]
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PP198 **Radiological and functional evaluation of bone union in frozen autograft and free vascularized fibular graft combination after intercalary resections of bone sarcoma in skeletally immature patients**
Osman Emre Aycan[1], Bugra Alpan[2], Natig Valiyev[1], Harzem Ozger[3]
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PP199 **Biological reconstruction in osteosarcoma with epiphyseal involvement. Pushing up the limits**
Harzem Özger[1], Bugra Alpan[2], Osman Emre Aycan[3], Natig Valiyev[3]
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Limb salvage in children

PP200 **Giant-cell tumor of the first metacarpal bone in adolescent treated with denosumab followed by en-bloc resection and reconstruction with bone cement**
Taweechok Wisanuyotin, Winai Sirichativapee
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PP201 **3 epochs in the use of Implantcast growing endoprosthesis - Experience of the Warsaw Center - Institute of Mother & Child**
Andrzej Szafranski, Bartosz Pachuta, Magdalena Rychlowska-Pruszynska, Iwona Malesza, Justyna Dusinska, Tomasz Walenta, Anna Raciborska
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PP202 **Preservation of the ankle joint in the distal tibia malignances using trans-epiphyseal osteotomy and massive biologic reconstruction. Results and complications in 3 pediatric patients**
Bart Kowalczyk, Krzysztof Miklaszewski, Anna Kuźnik-Buziewicz, Andrzej Pawelec, Paweł Maleta, Marcin Karlikowski
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PP203 **The outcome of tibial hemiprostheses replacement plus second stage revision as the treatment of the proximal tibial osteosarcoma in children**
Yuan Li
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PP204	**Growth prediction value of 99mTc-MDP on epiphysis around the knee - An observational study from pediatric limb salvage for malignant bone tumors** Yuan Li[1], Tao Ji[2], Wei Guo[2], Qian Wang[1] [1]Department of Nuclear Medicine, Peking University People's Hospital, Beijing, China [2]Musculoskeletal Tumor Center, Peking University People's Hospital, Beijing, China
PP205	**Two Free microvascular rotationplasty with nerve repair for rhabdomyosarcoma in a 18-month-old patient and in a osteosarcoma in a 8 year old patient** Francisco Baixauli, Alberto Perez-García, Marta Salom Hospital Universitario Y Politecnico La Fe, Valencia, Spain
PP206	**Customized Titanium printed metacarpal prosthesis for limb sparing surgery in an osteosarcoma child** Komkrich Wattanapaiboon[1], Yodsawee Pornmeechai[1], Worasun Taweewuthisub[1], Nattawut Sastravaha[1], Puwadon Weerapan[2], Arkaphat Kosiyatrakul[2], Suriya Luenam[2] [1]Queen Savang Vadhana Memorial Hospital, Chonburi, Thailand [2]Phramongkutklao Hospital, Bangkok, Thailand
PP207	**Comparison of rotationplasty with non-invasive expandable endoprostheses: Single institutional study** Jennifer Thomson, Joseph Ippolito, Kathleen Beebe, Francis Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States
PP208	**Adult conversion of the repiphysis for skeletally immature patients with high grade sarcoma** Jennifer Thomson, Joseph Ippolito, Kathleen Beebe, Francis Patterson, Joseph Benevenia Rutgers New Jersey Medical School, Newark, United States
PP209	**Custom-made elbow joint reconstruction with free osteoperiosteal fibula and iliac crest flaps after tumor resection: report of two cases** Francesca Totti[1], Maurizio Scorianz[1], Elena Lucatelli[2], Mattia Brogi[2], Marco Innocenti[2], Giovanni Beltrami[3], Domenico Campanacci[1], Rodolfo Capanna[4] [1]Orthopaedic Oncology and Reconstruction Surgery, Careggi University Hospital, Florence, Italy [2]Plastic and Reconstructive Microsurgery, Careggi University Hospital, Florence, Italy [3]Paediatric Orthopaedic Oncology, Careggi University Hospital, Florence, Italy [4]Orthopaedic Department, University of Pisa, Pisa, Italy
PP210	**Epithelioid haemangioendothelioma of bone in a paediatric patient: A case report** Rodanthi Margariti[1], Vasileios Kontogeorgakos[2], Eftichios Papagrigorakis[1], Panagiotis Kolovos[1], Nikolaos Kotsakis[1], Dimitris Papadopoulos[1], Panagiotis Megremis[1], Christos Zambakides[1] [1]Orthopaedic Department, General Children's Hospital of Athens "P & A Kiriakou", Athens, Greece [2]Orthopaedic Department, National and Kapodistrian University of Athens, Athens, Greece
PP211	**Surgical management of complications of expandable endoprostheses for skeletally immature patients with high grade sarcoma** Jennifer Thompson, Joseph Ippolito[1], Francis Patterson, Kathleen Beebe, Joseph Benevenia [1]Rutgers New Jersey Medical School, Newark, United States

Metastasis

PP212 **Experience of using interlocking nail in pathologic proximal femur fracture**
Karl Wu
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PP213 **A case of teratoma of the cauda equina with malignant transformation**
Yoko Hagiwara[1], Ken Okazaki[2]
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PP214 **Primary thoracic epidural malignant melanoma: A case report**
Yasutaka Takagi[1], Hiroshi Yamada[1], Hidehumi Ebara[1], Hiroyuki Hayashi[1], Satoshi Kidani[1], Shunro Okamoto[1], Shintaro Terahata[2], Hiroyuki Tsuchiya[3]
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PP215 **Surgical management of lung cancer metastasis in the femur**
Shoufeng Wang, Jin Xiong, Benlong Shi
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PP216 **Strategy for diagnosing of primary lesions in the metastatic bone and soft tissue tumors of unknown primary origin at the first visit**
Taketsugu Fujibuchi, Joji Miyawaki, Teruki Kidani, Hiromasa Miura
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PP217 **Skeletal metastasis in patients with prostate cancer**
Tatsuya Takagi
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PP218 **Intramedullary rod failure in metastatic breast cancer - Do triple negative cancer patients have more failures?**
Ana Belzarena, Cecilia Belzarena, Odion Binitie, Douglas Letson, David Joyce
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PP219 **The heat transfer modelling for minimization of long bone metastasis lesion using the cement polymerization effect**
Vania Oliveira[1], Elza Fonseca[2], Claudia Rua[2], Jorge Belinha[2], Paulo Piloto[3], Renato Natal Jorge[4]
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PP220 **Osteoblastic change in skeletal tumors decreases bone mineral density of cortical bone**
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PP221 **Efficacy of multi-hole injection nails for intramedullary nailing with simultaneous bone cement injection in long bone metastases**
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Treatment strategy for intramuscular metastases

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The clinical outcome of pulmonary metastectomy in musculoskeletal sarcoma patients in a single Centre: A retrospective cohort study

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Clinical manifestations of impending and pathological fractures indicated for conservative treatment in patients with metastatic tumors in the limb long bone

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Acetabular cage and cement reconstruction for acetabular metastatic disease

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Electrochemotherapy: A reliable method to obtain pain control in bone metastases

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An algorithm proposal for the treatment of pathological fractures of the proximal femur in elderly people

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Efficacy analysis of separation surgery combined with precision radiotherapy for spinal metastases: A long-term follow-up study based on patients with spinal metastatic tumor in a single-center

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Detection of pulmonary metastases using GFP transfected patient-derived osteosarcoma cells in patient-derived orthotopic xenograft (PDOX) model

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PP232	**Evaluation of the surgical outcomes and postoperative complications for patients with femoral metastatic bone tumor** Hirotaka Yonezawa, Norio Yamamoto, Katsuhiro Hayashi, Akihiko Takeuchi, Shinji Miwa, Kentaro Igarashi, Yuta Taniguchi, Yoshihiro Araki, Sei Morinaga, Hiroyuki Tsuchiya Department of Orthopaedic Surgery, Kanazawa University Graduate School of Medical Sciences, Kanazawa, Japan
PP233	**Limb salvage with a megaprosthesis in the elderly after failed prophylactic fixation in metastatic renal cell carcinoma** Nadine Williams, Alex Mierke, Omar Ramos, Lee Zuckerman Loma Linda University Medical Center, Department of Orthopaedic Surgery, Loma Linda, United States
PP234	**Long-term follow-up of Giant Cell Tumour (GCT) with pulmonary metastases** Sahran Yahaya, Wan Faisham Nu'man Wan Ismail, Norazman Mat Zin, Zulmi Wan Universiti Sains Malaysia, Kota Bharu, Malaysia
PP235	**Stabilisation of pathological humerus fractures using cement augmented plating: A case series** Alan Pickup, William Wilson, Helen Findlay, Ashish Mahendra, Sanjay Gupta Glasgow Royal Infirmary, Glasgow, United Kingdom
PP236	**C-reactive protein is a prognostic factor in metastatic bone disease** Patricio Alfaro[1], Giovanni Ciani[2], Lorenzo Ferra[2], Monica Cosentino[2], Barbara Bordini[2], Davide Maria Donati[2], Costantino Errani[2] [1]Hospital Traumatologico, Faculty of Medicine, Universidad de Concepcion, Concepcion, Chile [2] Department of Orthopaedic Oncology, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
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Xu Songfeng, Liu Ting, Yu Shengji, Zhao Zhenguo, Xu Libin, Zhang Xinxin
Department of Orthopedics, National Cancer Center / National Clinical Research Center for Cancer/ Cancer Hospital, Chinese Academy of Medical Science and Peking Union Medical College, Beijing, China

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PP243 **Use of Denosumab as neoadjuvant therapy followed by surgery in a series of cases of patients with giant cell tumor: Histological evaluation, articular preservation and pain**
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Barretos Cancer Hospital, Barretos, Brazil

PP244 **The efficacy and safety of apatinib in metastatic alveolar soft part sarcoma: A case series of six patients in one institution**
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Department of Orthopedics, West China Hospital, Sichuan University, Chengdu, China

PP245 **Epidermal growth factor receptor as a new target in the treatment of giant cell tumor of bone**
Michal Mahdal[1], Jakub Neradil[2], Silvia Chovanova[2], Iva Zambo[3], Lukas Pazourek[1], Tomas Tomas[1], Jakub Rapi[1]
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Eduardo Areas Toller, Sylvio Sargentini, Vitor Carmo
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Hester Renel Palma, Judith Valerie Akol
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PP259	**Post ISOLS 19th General Meeting 2017 in Kanazawa, Japan: How we have evolved** Srinath Doddarangappa[1], Pramod Chinder[1], Suraj Hindiskere[1], Tejashwini Anchan[2] [1]HCG Hospital, Bangalore, India, [2]The Yellow Ribbon, Karnataka, India
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PP281	**Prognostic significance of mitotic index using Pospho-Histone H3 immunostains in the diagnosis of giant cell tumor of bone** Manuel Ricardo Medellin Rincon[1], Vanessa Salinas[1], Mario Melo[2], Luis Carlos Gomez Mier[1], Camilo Soto Montoya[1] [1]Orthopaedics Department, Instituto Nacional De Cancerologia, Bogotá, Colombia [2]Pathology Department, Instituto Nacional De Cancerologia, Bogotá, Colombia
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PP285	**Pseudomyogenic haemangioendothelioma of bone: One institution five cases review** Eleonora Marini[1], Primo Andrea Daolio[1], Stefano Bastoni[1], Fabio Luca Giardina[1], Maria Serena Bartoli[1], Andrea Di Bernardo[2], Elisabetta Armiraglio[2], Antonina Parafioriti[2] [1]Orthopaedic Oncology Department, Milan, Italy, [2]Pathology Department, Milan, Italy
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Tomohiro Fujiwara, Yusuke Tsuda, Jonathan Stevenson, Michael Parry, Robert Grimer, Lee Jeys
The Royal Orthopaedic Hospital, Birmingham, United Kingdom

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Jagandeep Virk[1], Manish Pruthi[1], Bharat Rekhi[2], Sunil Pasricha[1]
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[2]Tata Memorial Hospital (TMH), Mumbai, India

PP297 **Intraoperative computer-assisted navigation (Intellijoint HIP®) system for periacetabular reconstruction in pelvic tumor surgery**
Koichi Ogura, Tomohiro Fujiwara, John H. Healey, Nicola Fabbri
Memorial Sloan Kettering Cancer Center, New York, United States

PP298 **Vertical abdominoinguinal approach (Extended Battle incision): A novel approach for pelvic resections**
Walid Ebeid[1], Usama Said Imam[2]
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[2]General Surgery Department, Beni Sweif University, Beni Sweif, Egypt

PP299 **Vascularized and recycled hybrid bone graft to restore hip function after resection of periacetabular bone tumor**
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Christos Vottis[1], Katsuhiro Hayashi[3], George Georgopoulos[2], Leonidas Dimopoulos[2], Vasilis Aggelis[2], Panayiotis J. Papagelopoulos[2]
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[3]Department of Orthopedic Surgery, Kanazawa University Kanazawa, Japan

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Russian Research Institute of Traumatology and Orthopedics Named After R. R. Vreden, St-Peterburg, Russian Federation

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G. Ulrich Exner[1], Charles E. Dumont[1], Jonas Walker[2], Philipp Fuernstahl[2]
[1]Orthopaedie Zentrum Zuerich, Zurich, Switzerland
[2]CARD Computer Assisted Research & Development Group, University Hospital Balgrist, University of Zurich, Zurich, Switzerland

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PP304	**A novel 3D-printed tumor prosthesis for reconstruction of proximal humerus and shoulder** Yidan Zhang, Yi Yang, Haijie Liang, Tao Ji, Ran Wei, Xiaodong Tang, Dasen Li, Zhiye Du, Jie Zang, Rongli Yang, Wei Guo Musculoskeletal Tumor Center, Peking University People's Hospital, Beijing, China
PP305	**Revision rates for megaprostheses: A updated review of the literature and meta-analysis** Jean-Camille Mattei[1], Arnaud Felden[2], Philippe Anract[2], David Biau[2] [1]Hôpitaux De Marseille, Aix Marseille Université, Marseille, France [2]Hôpitaux de Parais, Paris Descartes Université, Paris, France
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PP315	**Revisions for lower limb mega-prosthesis aseptic loosening failure: Short-stem cemented GMRS modular reconstructive prosthesis may serve as a good option** Hairong Xu, Yuan Li, Xiaohui Niu Department of Orthopaedic Oncology Surgery, Beijing Ji Shui Tan Hospital, Beijing, China
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LUNCHEON SEMINAR
Innovations in Orthopedic Oncology

Thursday, September 12th, 2019
12:45-13:15 BANQUET HALL

SPEAKERS: **George Douglas Letson** (United States) • **William Aston** (United Kingdom)

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LUNCHEON SYMPOSIUM
Special cases need special solutions

Friday, September 13th, 2019
12:45-13:45 BANQUET HALL

MODERATOR: **Pietro Ruggieri** (Italy)

3D Printing Technology - How to improve the concept to avoid problems
Daniel Kotrych (University of Szczecin, Poland)

Surgeon-engineer cooperation for implant design
Peter Scheinemann (Buxtehude, Germany)

MUTARS® as a final solution? Case presentation
Jendrik Hardes (University Essen, Germany)

Prosthetic reconstruction of the tibia after tumor resection: Proximal, segmental shaft, and distal tibia replacement
Panayiotis J. Papagelopoulos (University of Athens, Greece)

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Corporate Profiles

3D-SIDE

3D-Side provides medical companies with a web platform "Customize" (SaaS) to efficiently market custom-made devices. From images to 3D printing, it consists of 3 modules for planning, communication with the medical team and supervision of the production & quality of patient specific implants and instruments:

- "Interact" to communicate easily with surgeons
- "Create" to design custom-made instruments/implants
- "Supervise" to manage the just-in-time manufacturing.

Alongside this service, 3D-Side set up an ISO13485-certified workflow to market two major products based on proprietary software, additive manufacturing technology and a strong knowledge in surgical field: custom cranial implants and instruments for complex bone surgery.

ADLER ORTHO®

Adler Ortho®, it's an Italian Company specialized in manufacturing and selling innovative hip and knee implants, and custom-made orthopaedic devices.

Since 2007, we have been using 3D printing technology for Ortho implants manufacturing. Our product range includes hip, knee and custom made implants, all manufactured employing addictive technology.

Recently we have been developing devices specifically designed for limb salvage procedures. Our Group includes Novagenit®, maker of the Defensive Antibacterial Coating hydrogel. It's a device designed for post-surgical infections prevention, to be used in conjunction with any cementless implant or trauma device.

CARBOFIX ORTHOPEDICS LTD

CarboFix Orthopedics Ltd., is a fast growing company engaged in developing, manufacturing and marketing innovative orthopedic solutions.
The company specializes in implants made of continuous carbon fiber reinforced polymer.

IMPLANTCAST GmbH

Is a German orthopaedic company founded in 1988 with more than 30 years history, still privately held. The company is one of the leading manufacturers of tumour and revision Implants. Beside the modular systems for hip, knee and shoulder joints, implantcast is serving the market with special customised implants. Speed and service are the main goals, when bringing up solutions for the individual patients. Implantcast is represented worldwide by direct subsidiaries and independent distributors in more than 80 countries. Based on CT scan and MRI data implantcast is planning patient specific implants as well as instruments and uses the new additive manufacturing EBM method (electron beam melting) since November 2013, as one of the first producers in Europe. EBM manufacturing accelerates product production time scale for custom prosthesis offers design freedom and

allows for a high degree of primary and secondary fixation. EPORE® is a highly porous structure made of titanium alloy. At the manufacturing site and headquarter in Buxtehude, Germany about 25km southwest of Hamburg, Implantcast employs more than 600 people, who manufacture more than 350.000 implant components per year. In the last three decades, Implantcast developed several innovative solutions and products. Among others Implantcast and the University in Muenster, Germany developed the unique silver coating used on the MUTARS® tumour prostheses. The special property of the silver is used to build a protection against bacteria and the retention period of the implant is extended.

LINK

With over 70 years in Orthopedics, **LINK** has pioneered developments in joint replacement for primary and revision hip, knee and tumor surgery.

Our responsibility is to only sell implants we would be willing to have implanted in ourselves. The current LINK product range includes leading legacy implants with documented and reproducible results, such as the Endo-Model rotating hinge knee, MP revision stems, Lubinus SPII anatomic hip and the Gemini total and Sled partial knee replacements. More recent innovations include the SP-CL anatomic cementless hip system and Megasystem-C complete tumor and revision system. Modern production facilities and German engineering, assure the famous LINK product quality known for the highest safety standards and best value for the patient.

NUVASIVE

NuVasive is a world leader in minimally invasive, procedurally-integrated solutions. From complex spinal deformity to limb length discrepancy and non-union solutions, NuVasive is transforming surgery with innovative technologies designed to deliver reproducible surgical outcomes. The PRECICE® system provides remote control technology for the treatment of limb length discrepancies and non-unions.

STRYKER

Stryker is one of the world's leading medical technology companies and, together with our customers, is driven to make healthcare better. We offer innovative products and services in Orthopaedics, Medical and Surgical, and Neurotechnology and Spine that help improve patient and hospital outcomes.

ZIMMER BIOMET

Founded in 1927 and headquartered in Warsaw, Indiana, **Zimmer Biomet** is a global leader in musculoskeletal healthcare. We design, manufacture and market orthopedic reconstructive products; sports medicine, biologics, extremities and trauma products; office based technologies; spine, craniomaxillofacial and thoracic products; dental implants; and related surgical products.

We collaborate with healthcare professionals around the globe to advance the pace of innovation. Our products and solutions help treat patients suffering from disorders of, or injuries to, bones, joints or supporting soft tissues. Together with healthcare professionals, we help millions of people live better lives. We have operations in more than 25 countries around the world and sell products in more than 100 countries.

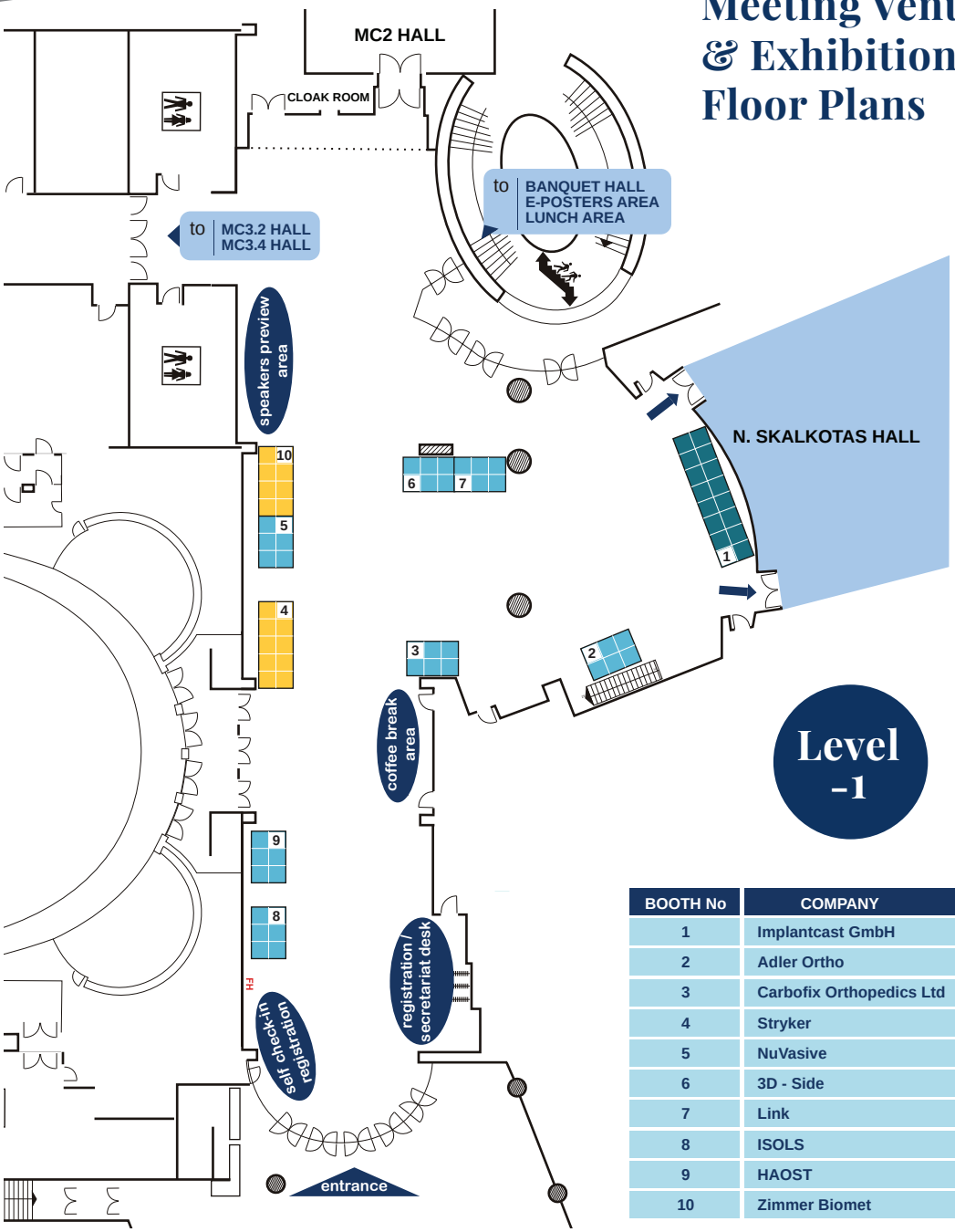
ISOLS 2019

20th General Meeting of the International Society of Limb Salvage

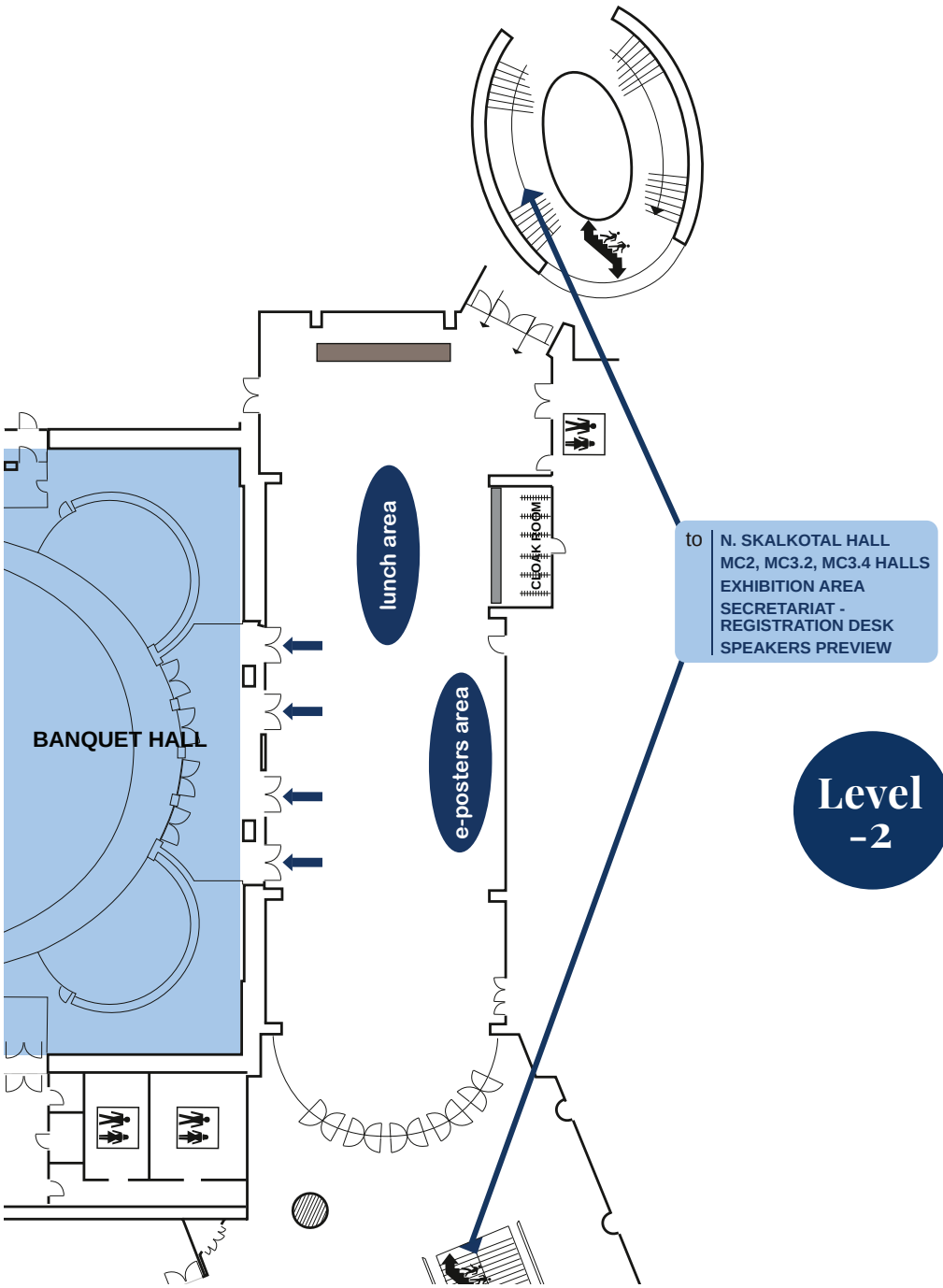
Athens Greece

September 11-14, 2019

Meeting Venue & Exhibition Floor Plans



BOOTH No	COMPANY
1	Implantcast GmbH
2	Adler Ortho
3	Carbofix Orthopedics Ltd
4	Stryker
5	NuVasive
6	3D - Side
7	Link
8	ISOLS
9	HAOST
10	Zimmer Biomet


BANQUET HALL
lunch area
e-posters area
CLOAK ROOM
to
N. SKALKOTAL HALL
MC2, MC3.2, MC3.4 HALLS
EXHIBITION AREA
SECRETARIAT - REGISTRATION DESK
SPEAKERS PREVIEW
Level -2

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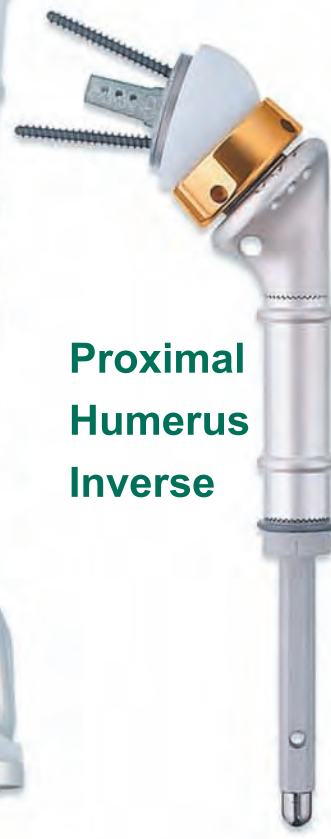

Proximal
Humerus
Inverse

Proximal
Tibia

www.implantcast.de

stryker

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Since 1949, Stanmore has been transforming the lives of children and adults around the world. Our first custom-made implant was placed in a patient on July 30, 1949 and since then, more than 22,000 patient specific Stanmore implants have been created.[1]

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Look to Stryker for the Stanmore family of products.

1. Sales data on file

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stryker's product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any of Stryker's products. The products depicted are CE marked according to the Medical Device Directive 93/42/EEC. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your sales representative if you have questions about the availability of products in your area.

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