

| November | | 27 | (Tuesday) |
|-------------------------|--------------|---|-----------|
| 11:00-12:50 | Registration | | |
| 12:50-13:00 | Opening | | |
| ORS-ISFR Clinical Study | | Bone Formation and Complications | |
| | | Chair: Selvadurai Nayagam & Yoshinobu Watanabe | |
| 13:00-13:45 | CS-01 | Treatment of chronic osteomyelitis using modern Papineau technique with negative pressure wound therapy Ikko Ohno Orthopedic Surgery, Sakai Medical Center | |
| | CS-02 | Evaluation of radiographic fracture healing: An assessment of consistency using radiographic union score for tibia (RUST) and modified RUST in tibial shaft fractures. Shunsuke Takahara Orthopaedic Surgery, Hyogo Prefectural Kakogawa Medical Center | |
| | CS-03 | Radiographic evaluation of bone formation in the osteotomy gap after open-wedge high tibial osteotomy Takeshi Sawaguchi Department of Orthopedic Surgery and Joint Reconstruction, Toyama Municipal Hospital | |
| | CS-04 | Orthopedic complication reporting revisited Jörg Goldhahn Institute for Translational Medicine, ETH Zurich | |
| | CS-05 | Complications Following Operatively Treated Ankle Fractures In Diabetic Patients – Who Is At The Greatest Risk? David J. Hak Department of Orthopaedics, Physical Medicine, and Rehabilitation, Denver Health / University of Colorado | |
| ORS-ISFR Basic Science | | Chair: Jörg Goldhahn & Nobuyuki Takenaka | |
| 13:50-15:15 | BS-01 | Differential fracture response to traumatic brain injury suggests dominance of neuroinflammatory response in polytrauma Kazuhito Morioka Departments of Orthopaedic Surgery and Neuroscience, University of California, San Francisco (UCSF) | |
| | BS-02 | CT data analysis of infra-acetabular corridor for screw placement in Japanese population Shozo Kanezaki Orthopedic surgery/ Advanced Trauma, Emergency and Critical Care Center, Oita University Hospital | |
| | BS-03 | FE-Prediction of tibia fracture interfragmentary motion using rigid body assumptions Mischa Muehling Traum Center Murnau, Instiute of Biomechanics | |
| | BS-04 | Rad may play a role in nonunion development Takahiro Oda Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | BS-05 | Anatomical assessment of iliac cavity Yuka Sugiura Orthopaedic Department, Kurume university hospitall | |
| | BS-06 | Iliosacral screw corridors in Japanese subjects: A study using reconstruction CT scan Toru Iga Orthopaedic surgery, Tokyo Metropolitan Tama Medical Center | |
| | BS-25 | HSP22 acts as a positive regulator in TNF- α -stimulated IL-6 synthesis in osteoblasts : association with mTOR Go Sakai Orthopedics, Komaki city hospital | |
| 15:15-15:30 | Intermission | | |

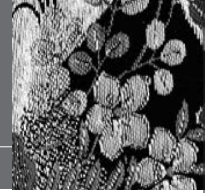
Program

November 27 (Tuesday)

| ORS-ISFR Clinical Study* | Fragility Fracture | Chair: Volker Bühren & Etsuo Shoda |
|--------------------------|---|--|
| 15:30-16:15 | CS-06* New classification and clinical results for basicervical fractures of the proximal femur Naofumi Shiota Orthopaedic Surgery, Okayama Medical Center | |
| | CS-07* Improvement of ADL After Surgical Intervention for Proximal Humeral Fracture: Retrospective Comparative Analysis between Intramedullary Nail Versus with Plate using a National Database in Japan Hiroyuki Okada Department of Orthopaedic Surgery, University of Tokyo | |
| | CS-08* Survival and ADL Improvement by Early Surgical Intervention of femoral neck fractures: Retrospective Analysis using a National Database in Japan Hiroyuki Okada Department of Orthopaedic Surgery, University of Tokyo | |
| | CS-09* Vitamin D insufficiency and deficiency in elderly patients with fragility fracture of the hip Takahiro Niikura Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CS-10* Low adherence of osteoporosis guideline after distal radius fracture -Study using database of health insurance claims data- Natsumi Saka Department of Orthopaedic Surgery, Teikyo University School of Medicine | |
| Case Report Competition* | | Chair: Hamish Simpson & Takashi Matsushita |
| 16:20-17:30 | CR-01* Chronic osteomyelitis of the left lower leg 6 years after the first operation: a case report Koji Demiya Department of Orthopaedic Surgery, Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences | |
| | CR-02* A case report of non-union after induced membrane technique surgery Saori Motegi Department of Orthopaedic Surgery, Teikyo University School of Medicine | |
| | CR-03* Minimally invasive plate osteosynthesis for the treatment of humeral shaft nonunion: A report of two cases Keisuke Oe Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CR-04* Periprosthetic femoral fracture with characteristics of atypical femoral fracture -A case report- Keisuke Oe Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CR-05* Atypical femoral fractures around a prosthetic joint stem Yosuke Nagai Orthopaedic surgery, Saiseikai Senri Hospital | |
| | CR-06* Infectious open-knee joint fracture with soft tissue defect treated with antimicrobial megaprosthesis supported with iodine: A case report Kenichi Sawauchi Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| 18:00-20:00 | Welcome Party at kokoka (Restraurant) | |

November 28 (Wednesday)

| Young Investigator Competition* | Clinical Study | Chair: Takashi Suzuki |
|---------------------------------|--|-----------------------|
| 9:15-10:05 | YI-01* Evaluation of OTA-OFC in open fractures of extremities Saori Motegi Department of Orthopaedic Surgery, Teikyo University School of Medicine | |
| | YI-02* The Accuracy of Screw Placement for Pelvic and Acetabular Fractures Using with 3D-CT Navigation Yusuke Mochizuki Department of Orthopaedic surgery, Okayama University Hospital | |
| | YI-03* A novel technique for retrograde intramedullary nailing using arthroscopy for the periprosthetic fracture of the femur after total knee arthroplasty Kazuhiko Udagawa Department of Emergency and Critical Care Medicine, Keio University School of Medicine | |
| | YI-05* Clinical experience with total hip arthroplasty for displaced femoral neck fracture in the elderly Takumi Kaku Department of Orthopaedic Surgery, Tokyo Medical and Dental University | |
| | YI-06* A comparison of the bone mineral density of the pelvis between young and elderly patients using CT scans Naoya Inagaki Department of Orthopaedics Surgery, The Jikei University Kashiwa Hospital | |



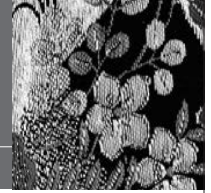
November 28 (Wednesday)

| ORS-ISFR Basic Science* | | Cells | Chair: Jörg Goldhahn & Takahiro Niikura |
|--------------------------|--|---|---|
| 10:05-10:45 | BS-07* | Endochondral Bone Regeneration Using Chondrogenically Differentiated Human Induced Pluripotent Stem Cells Michio Arakura Department of Orthopedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan | |
| | BS-09* | Implant type tissue-engineered cartilage derived from human auricular chondrocyte may maintain cartilaginous property even under osteoinductive condition Natsumi Saka Department of Orthopaedic Surgery, Teikyo University School of Medicine | |
| | BS-10* | Regulation of Angiogenesis Discriminates Tissue Resident MSCs from Effective and Defective Osteogenic Environments Peter Giannoudis Trauma & Orthopaedic Surgery, University of Leeds | |
| 10:45-11:10 | Intermission | | |
| 11:10-11:40 | Industry Sponsored Lecture #1 Bioventus Use of LIPUS in compromised healing – basic science and clinical data Andrew Harrison , Director of Research of Bioventus | | Chair: Takahiro Niikura |
| 11:40-12:10 | Industry Sponsored Lecture #2 Stryker Japan Low 30-days Mortality after Proximal Femoral Fracture in Japan Fumio Fukuda , Department of Orthopaedic Surgery, Kitakyushu General Hospital | | Chair: Atsushi Sakurai |
| 12:10-13:00 | Lunch | | |
| ORS-ISFR Basic Science* | | Biomechanics | Chair: Peter Augat & Hervé Petite |
| 13:00-13:40 | BS-11 | Numerical assessment of articular fracture lines on the stability of complex tibial plateau fractures Shabnam Samsami Institute of Biomechanics, Trauma Center Murnau | |
| | BS-12* | Calcaneal fractures are not always the results of high energy trauma Tetsu Tsubone Orthopaedic Surgery, Kitakyushu General Hospital | |
| | BS-14 | Development of smart bone plate to monitor fracture repair Monica C. Lin Deptment of Orthopedic Surgery, Department of Bioengineering, University of California, San Francisco | |
| ORS-ISFR Clinical Study* | | Complications | Chair: Peter V Giannoudis & Takeshi Sawaguchi |
| 13:40-14:40 | CS-11* | Evaluation of clinical results of lower limb nonunion based on patient-reported outcome. Tomoaki Fukui Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CS-12* | Clinical trial of autologous CD34-positive cell transplantation for fracture nonunion patients Takahiro Niikura Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CS-13* | An analysis of complications and clinical outcomes in the treatment of segmental tibial fractures according to the method of internal fixation Hyung Keun Song Department of Orthopedics, Ajou University School of Medicine | |
| | CS-14* | Volumetric changes of grafted bone in induced membrane technique managing critical sized defects of long bones Jae-Woo Cho Department of Orthopaedic Surgery, Guro hospital, Korea university | |
| | CS-15* | Three-Dimensional Corrective Osteotomy for Malunited Fractures of the Upper Extremity using Patient-Matched Instruments: A Prospective, Multicenter, Open-Label, Single-Arm Trial Tsuyoshi Murase Department of Orthopaedic Surgery, Osaka University Graduate School of Medicine | |
| | CS-17* | Are Postoperative Infection In Patients with Open Fractures Of Extremities Associated with OTA open fracture classification? A Multi-Center Prospective Cohort Study. Keisuke Ishii Trauma and Reconstruction Center, Teikyo University Hospital | |
| 14:40-15:00 | Intermission | | |

Program

November 28 (Wednesday)

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|-------------------------|---|---|--|
| 15:00-15:30 | Invited Guest Lecture | | Chair: Yoshinobu Watanabe |
| | "The Diamond Concept for Bone Repair" Peter V Giannoudis , Academic Department of Trauma and Orthopaedics School of Medicine, University of Leeds | | |
| ORS-ISFR Basic Science* | Acceleration of Fracture Healing | | Chair: Chelsea Bahney & Masahiro Shirahama |
| 15:30-16:20 | BS-15* | The effect of transcutaneous CO2 application on distraction osteogenesis of rabbit tibia Yohei Kumabe Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | BS-16* | Continuous infusion of PTH1-34 delayed fracture healing in mice Kiminori Yukata Department of Orthopedic Surgery, Ogori Daiichi General Hospital | |
| | BS-17 | The effect of systemic simvastatin in fracture healing in an osteoporotic rat bone fracture model Katrina Roxanne Bell Trauma and Orthopaedics, The Royal Infirmary of Edinburgh | |
| | BS-18* | Systemic hPTH(1-34) Rescues Deficient Long Bone Fracture Healing in Type 2 Diabetes Francis Lee Orthopaedic Surgery, Yale University | |
| ORS-ISFR Clinical Study | New Concept | | Chair: Tsuyoshi Murase |
| 16:20-17:15 | CS-18 | A new anterolateral approach for the treatment of pilon fractures –Kesagake approach–and its operative results Kiyoto Kinugasa Department of Orthopaedic Surgery, Chikamori Hospital | |
| | CS-19 | The study of surgical treatment for stress fracture of the medial malleolus Yukinobu Nishii Department of Orthopaedic Surgery, Chikamori Hospital | |
| | CS-20 | 2 year results after open-wedge high-tibial osteotomy with a plate – a prospective multicenter study Sabine Goldhahn Clinical Investigation and Documentation, AO Foundation | |
| | CS-21 | Are there side-to-side variations in the lower extremities? Miho Kure Orthopedic Surgery, Okayama University Hospital | |
| | CS-22 | New intramedullary nail for trochanteric fractures : ASULOCK® Shingo Okazaki Department of Orthopaedic Surgery, Kurume University School of Medicine | |
| | CS-23 | Clinical outcomes of treatment with locking compression plates for distal femoral fractures in a retrospective cohort Masahiro Kiyono Department of Orthopedic Surgery, Okayama University Hospital | |



November

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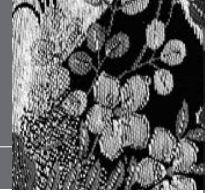
(Thursday)

| ORS-ISFR Clinical Study* | | New Evaluation and Trials | Chair: Sabine Goldhahn & Tomoyuki Noda |
|--------------------------|---|--|--|
| 9:15-10:20 | CS-24* | Locational characteristics of atypical femoral fractures in Japan Yoto Oh Department of Orthopaedic and Trauma Research, Tokyo Medical and Dental University | |
| | CS-25* | Clinical experience of using Reamer-Irrigator-Aspirator system for Japanese patients Keisuke Oe Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CS-26* | Antibiotic Administration for Open Long-Bone Fractures: A Need to Change Pre-Hospital Management Strategy to Meet Revised National Standards Abhijit Bajracharya Department of Orthopaedics and Trauma, The University of Edinburgh | |
| | CS-27* | Clinical outcomes of intramedullary nailing with contralateral side nail in bowed atypical femur fractures Jl Wan Kim Orthopedic Surgery, Asan Medical Center | |
| | CS-28* | Soluble fibrin monomer complex as a useful predictor of venous thromboembolism after fracture surgery Sang Yang Lee Department of Orthopaedic Surgery, Showa University School of Medicine | |
| | CS-29* | Topical cutaneous application of carbon dioxide using a hydrogel is a novel treatment option to assist fracture repair -Results of a clinical trial- Takahiro Niikura Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| | CS-30* | Safety and bactericidal effect of 222nm ultraviolet C irradiation. Tomoaki Fukui Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine | |
| ORS-ISFR Basic Science* | | Absorption and Regeneration | Chair: David J. Hak & Francis Lee |
| 10:20-10:45 | BS-21* | Insightful Pathophysiologic Mechanisms for Metastatic Cancer-Induced Bone Loss and New Therapeutic Consideration for Impending Pathological Fractures Francis Lee Orthopaedic Surgery, Yale University | |
| | BS-22* | New insight into normal fracture healing drives novel therapeutic approaches to bone regeneration. Chelsea S. Bahney Orthopaedic Surgery, University of California, San Francisco (UCSF) | |
| 10:45-11:10 | Intermission | | |
| 11:10-11:40 | Presidential Guest Lecture Fragility Fractures – Techniques, Tips, and Tricks Daniel S. Horwitz , Geisinger Health System | | Chair: David J. Hak |
| 11:40-12:10 | Industry Sponsored Lecture #3 Zimmer Biomet Treatment of pathological fracture of proximal femur; surgical tips and pearls for traumatic surgeon Tomoyuki Noda , Okayama University | | Chair: Hiroataka Kawano |
| 12:10-13:00 | Lunch | | |
| 13:00-13:30 | General Assembly | | |
| 13:30-14:00 | Industry Sponsored Lecture #4 NexMed International Fracture Healing and Mechanical Environment Peter Augat , Institute for Biomechanics Trauma Center Murnau, Germany & Paracelsus Medical University Salzburg, Austria | | Chair: David J. Hak |

Program

November 29 (Thursday)

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| 14:00-15:40 | <p>ISFR & FFN Combined Symposium Chair: David Marsh & Peter Augat</p> <p>How to deal with fractures in the geriatric population Optional: Evolution of FFN from ISFR</p> <ol style="list-style-type: none"> 1 Peter Augat, Institute for Biomechanics Trauma Center Murnau, Germany & Paracelsus Medical University Salzburg, Austria 2 Maior trauma in geriatric patients – an interdisciplinary and interprofessional challenge Volker Bühren, Department of Trauma Surgery, BG Trauma Center Murnau (ISFR) 3 Orthogeriatric Co-management of elderly fracture patients David Marsh, Fragility Fracture Network / University College London (FFN) 4 Multidisciplinary approach for geriatric hip fractures. -Japanese experience- Takeshi Sawaguchi, Department of Orthopaedic Surgery, Toyama Municipal Hospital (ISFR) 5 The biology of fracture healing in the presence of anti-osteoporotic drugs David J. Hak, Department of Orthopaedics, Physical Medicine, and Rehabilitation, Denver Health / University of Colorado (FFN) <p>Discussion</p> |
| Young Investigator Competition* | <p>Basic Science Chair: Amy Hoang Kim & Chantal Chenu</p> |
| 15:40-17:10 | <p>YI-07* Synthetic vertebrae provide authentic haptics during vertebral augmentation training Marianne Hollensteiner Research Group for Surgical Simulators Linz, Upper Austria University of Applied Sciences</p> |
| | <p>YI-08* Effect of additional cerclage on post-operative weight-bearing after plate osteosynthesis of spiral fractures at the distal tibia Sabrina Sandriesser Institute of Biomechanics, Trauma Center Murnau, Germany</p> |
| | <p>YI-09* Stability of Proximal Femur Plates with Spring-Loaded Screws for the Fixation of Femoral Neck Fractures Emily Kathryn Bliven Institute of Biomechanics, Trauma Centre Murnau</p> |
| | <p>YI-10 Atrophic non-union model: shifting from external to internal fixation Murtadhah Mohammed Kurdi Jalal Orthopaedics and Trauma Surgery, University of Edinburgh</p> |
| | <p>YI-11 A clinically relevant rat animal model for the study of metaphyseal osteoporotic fracture healing Katrina Roxanne Bell Trauma and Orthopaedics, University of Edinburgh, Royal Infirmary of Edinburgh</p> |
| | <p>YI-12 Phenotypic Analysis of fracture-induced Bone Pain in a mouse model of osteoporotic fractures Ran Magnusdottir Comparative Biomedical Sciences, Royal Veterinary College</p> |
| | <p>YI-13* Effect of low intensity pulsed ultrasound therapy on Staphylococcus aureus biofilms Shao-Ting Jerry Tsang Department of Orthopaedic Surgery, University of Edinburgh</p> |
| 18:00-20:00 | Gala Dinner & Awards Ceremony |



November

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(Friday)

ORS-ISFR Basic Science

Chair: Seiya Jingushi & Natsumi Saka

9:15-10:05

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| BS-23 | A comparative study of tissue-engineered constructs from Acropora and Porites coral in a large animal bone defect model Hervé PETITE Laboratory of Bioengineering and Bioimaging for Osteo-Articular tissues (B2OA) UMR CNRS 7052, Université Paris Diderot et ENVA |
| BS-24 | Glucose Delivery System Based-Hydrogel Composite Scaffold for enhancing MSC survival Hervé PETITE Laboratory of Bioengineering and Bioimaging for Osteo-Articular tissues (B2OA) UMR CNRS 7052, Université Paris Diderot |
| BS-26 | Escherichia coli-derived BMP-2-incorporated β -TCP granules induces bone regeneration Yu Kuroiwa Orthopaedic Surgery, Kobe University Graduate School of Medicine |
| BS-27 | The effect of topical cutaneous CO2 application to bone healing in a rat femoral defect model Yu Kuroiwa Orthopaedic Surgery, Kobe University Graduate School of Medicine |

ORS-ISFR Clinical Study

Chair: Yukinobu Nishii & Jea-Woo Cho

10:05-11:00

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| CS-31 | Terrible triad injury with Essex-Lopresti injury: a case report Issei Shinohara Department of Orthopaedic Surgery, Hyogo Prefectural Kakogawa Medical Center |
| CS-32 | Clinical Outcome of Tension Band Wiring for Patella Fractures Taro Shiba Orthopedic Surgery, Chikamori Hospital |
| CS-33 | Ostosynthesis for unstable femoral neck fracture with Twinhook system Jun Kawamata Orthopedics Surgery, Chikamori Hospital |
| CS-34 | Patterns of radial notch fracture in elbow fracture dislocations with proximal ulna comminution Natsumi Saka Department of Orthopaedic Surgery, Teikyo University School of Medicine |
| CS-35 | Atypical femoral fractures in patients of metastatic bone tumor treated with zoledronic acid and denosumab. Tomoaki Fukui Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine |
| CS-36 | Low-intensity pulsed ultrasound was frequently used for fresh fractures in elderly female patients according to the open data from the National Database of Health Insurance Claims of Japan. Seiya Jingushi Orthopaedic Surgery, Kyushu Rosai Hospital |

11:00-11:20

Intermission

ORS-ISFR Clinical Study

Fragility Fracture

Chair: Yoto Oh & Shota Harada

11:20-12:20

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| CS-37 | The clinical results of the surgical treatment for the ankle fragility fracture Yukinobu Nishii Orthopedic surgery, Chikamori Hospital |
| CS-38 | The importance of reduction in X-ray lateral view for femoral trochanteric fractures using Hansson Twin Hook System Takashi Inokuchi Orthopedic surgery, Chikamori Hospital |
| CS-39 | Occult femoral trochanteric fracture in elderly patients Etsuo Shoda Orthopaedic Surgery, Hyogo Prefectural Nishinomiya Hospital |
| CS-40 | Involvement of lifestyle-related diseases in the development of fragility fracture of the proximal femur Takashi Iwakura Orthopaedic Surgery, Awaji Medical Center |
| CS-41 | Clinical experience in the treatment of femoral neck fracture with Hansson Pinloc System Takashi Iwakura Orthopaedic Surgery, Awaji Medical Center |
| CS-42 | Optimal intramedullary nailing for trochanteric fractures: Nailing without distal locking screw could be dangerous Takahiro Waki Department of Orthopedic Surgery, Akashi Medical Center |

Program

Program

November 30 (Friday)

| Late Breaking Abstract Session | | Chair: Takashi Suzuki & Yoshinobu Watanabe |
|--------------------------------|---------|---|
| 12:20-13:05 | LB-01 | Minimally invasive surgical treatment using an 'iliac pillar' screw for isolated iliac wing fractures in geriatric patients: a new challenge Seung-Bae Oh Department of Orthopedic Surgery, Yeouido St. Mary's Hospital, College of Medicine, The Catholic University of Korea |
| | LB-02 | Posterior locked lateral compression injury of the pelvis in geriatric patients: an infrequent and specific variant of the fragility fracture of pelvis Joon-pyo Juhn Department of Orthopedic Surgery, Yeouido St. Mary's Hospital, College of Medicine, The Catholic University of Korea |
| | LB-03 | Is minimal invasive surgical treatment more beneficial than conservative treatment for nondisplaced unilateral sacral ala fracture combined with anterior pelvic disruption? Joon-pyo Juhn Department of Orthopedic Surgery, Yeouido St. Mary's Hospital, College of Medicine, The Catholic University of Korea |
| | LB-04 | Postoperative start of low-molecular-weight-heparin increases mortality compared to preoperative start in patients with femoral neck fractures. An observational study of 20,241 hemiprostheses reported to the Norwegian Hip Fracture Register. Sunniva Leer-Salvesen Department of Clinical Medicine, University of Bergen, Bergen. |
| | LB-05 | Developing a Core Outcome Set for the Research and Treatment of Thumb Carpometacarpal Osteoarthritis: A Delphi Study Amy Ladd Department of Orthopedic Surgery, Stanford University, Stanford, CA |
| 13:05-13:10 | Closing | |