

Saturday, February 5, 2022

8:00 AM - 9:00 AM

Room Ballroom AB

Session 1 Spotlight - Tissue Regeneration - Biomaterials and Bioprinting (featuring Daniel Kelly)

Moderators: Michele Marcolongo and Blanka Sharma

8:00 AM

Paper No. 1

3D Printed Biphasic PCL Scaffolds For Treating Large Osteochondral Defects In Porcine Model

Sumit Murab; Jenna Hall; Chia-Ying Lin; Patrick W. Whitlock

8:10 AM

Paper No. 2

Induced PSC-Neural Crest Derived Cells Embedded In 3D Printable Bio-Ink Promote Cranial Bone Defect Repair

Juliane Glaeser; Xianchao Bao; Giselle Kaneda; Pablo Avalos; Phillip Behrens; Koz Salehi; Xiaoyu Da; Angel Chen; Wensen Jiang; Pawel Nakielski; Wafa Tawackoli; Dmitriy Sheyn

8:20 AM

Paper No. 3

In-vivo Transplantation Of Three-dimensional Cell-printed Meniscus Constructs Using Meniscus-derived Bioink: Outcomes In Large Animal Models

Youngsik Jeon; Suhun Chae; Sung-Sahn Lee; Dong-Woo Cho; Joon Ho Wang

8:30 AM

Spotlight Speaker

Can Bioprinting Help Us Engineer Functional Cartilaginous Tissues?

Daniel Kelly

Saturday, February 5, 2022

8:00 AM - 9:00 AM

Room Ballroom C

Session 2 Spotlight - Bone Adaptation (featuring Karen Troy/Mariana Kersh)

Moderators: Ara Nazarian and Joseph Wallace

8:00 AM

Spotlight Speaker

From in Silico to in Vivo: Opportunities for Building Better Bone

Mariana Kersh

8:30 AM

Paper No. 4

Combining Raloxifene And Mechanical Loading Improves Mechanical Properties In A Murine Model Of Chronic Kidney Disease (CKD)

Rachel K. Surowiec; Olivia N. Reul; John G. Damrath; Dyann M. Segvich; Nusaiba N. Chowdhury; Matthew R. Allen; Joseph M. Wallace

8:40 AM

Paper No. 5

The Transcriptional Response Of Osteocytes To Loading In Isolated Trabecular Bone Explants

Meghana Machireddy; Alyssa G. Oberman; Glen L. Niebur

8:50 AM

Paper No. 6

Mechanobiologically Mimetic Model Systems For Studying Breast Cancer Metastasis To Bone

Vatsal Kumar; Syeda Masooma Naqvi; Neelima Thottappillil; Laoise McNamara

Saturday, February 5, 2022

8:00 AM - 9:00 AM

Room Ballroom D

Session 3 Hip and Knee Arthroplasty - Robotics and AI

Moderators: Chadd Clary and Carl Imhauser

8:00 AM

Paper No. 7

Reliability Of Laxity Acquisitions Under Controlled Load Environment During Navigated Total Knee Arthroplasty

Laurent D. Angibaud; Philippe Dubard; Marine Torrollion; Matthew Rueff; Wen Fan; James Huddleston

8:10 AM

Paper No. 8

Predicting Total Knee Replacement At 2 Years And 5 Years In Osteoarthritis Patients Using Machine Learning

Khadija Mahmoud; Hadi Alagha; Zuzanna Nowinka; Gareth Jones

8:20 AM

Paper No. 9

Utility Of Artificial Intelligence Algorithms For The Prediction Of Early Revision Surgery Following Primary Total Hip Arthroplasty

Anirudh Buddhiraju; Christian Klemm; Jeffrey M. Jancuska; Ingwon Yeo; Yasamin Habibi; Murad Subih; Ehab El Touny; Jillian C. Burns; Christopher M. Melnic; Young-Min Kwon

8:30 AM

Paper No. 10

Ground Reaction Forces During Gait As A Function Of IMU Kinematic Data And Neuronal Networks

Carina Gempfer; Marco Gustav; Alexander Hobein; Henning Windhagen; Eike Jakobowitz

8:40 AM

Paper No. 11

Categorizing And Predicting Tribocorrosion Damage Risks In Thr Implants Deploying Machine Learning Models: A Preliminary Approach

Remya Ampadi Ramachandran; Sheng-Wei Chi; Didem Ozevin; Kharma Foucher; Mathew T. Mathew

8:50 AM

Paper No. 12

Predicting Depression In Patients With Knee Osteoarthritis Using Machine Learning Models

Zuzanna Nowinka; Hadi Alagha; Khadija Mahmoud; Gareth Jones

Saturday, February 5, 2022

8:00 AM - 9:00 AM

Room 24-25

Session 4 Clinical Research Big Data

Moderators: Meir Marmor and Caroline Thirukumaran

8:00 AM

Paper No. 13

Relative Efficacy And Accuracy Of Natural Language Processing In Extracting Unstructured Information From Electronic Medical Records: Implication For Building A Comprehensive Pediatric ACL Surgery Registry

James Pruneski; Ryan Sanborn; Assaf Lanschaft; Amir Kimia; Ata M. Kiapour

8:10 AM

Paper No. 14

Predicting Anterior Cruciate Ligament Reconstruction Revision: External Validation Of A Machine Learning Algorithm Using The Danish Knee Ligament Registry

R. Kyle Martin; Solvejg Wastvedt; Ayoosh Pareek; Andreas Persson; Håvard Visnes; Anne Marie Fenstad; Gilbert Moatshe; Julian Wolfson; Martin Lind; Lars Engebretsen

8:20 AM

Paper No. 15

Value Of DESS MRI In Prediction Of Radiographic Osteoarthritis Progression: Data From The Osteoarthritis Initiative (OAI)

Egor Panfilov; Aleksei Tiulpin; Miika T. Nieminen; Simo Saarakkala

8:30 AM

Paper No. 16

Time-dependent Covariate Effects In Competing Risks Estimation Of Hip Revision Using A Neural Network

Fabio L. de Mello; Visakan Kadirkamanathan; J Mark Wilkinson

8:40 AM

Paper No. 17

Artificial-intelligence Driven Benchmarks To Optimize Team Efficiency In A High-volume Primary Arthroplasty Practice

Richard Gold; Farid Al Zoubi; Cheryl Kreviazuk; Julia Brillinger; Stephane Poitras; Pascal Fallavollita; Paul E. Beaulé

8:50 AM

Paper No. 18

Predictive Model For TKA Surgical Time: Strong Benefit Of Machine Learning And 3D Patient Data

Arman Moteshareei; Cecile Batailler; Daniele De Massari; Graham Vincent; Antonia Chen; Sebastien Lustig

Saturday, February 5, 2022

8:00 AM - 9:00 AM

Room 18-19

Session 5 Spine Deformity

Moderators: Anton Bowden and Alon Lai

8:00 AM

Paper No. 19

Rapid, Hardware-resilient Automated Cobb Angle Measurement From X-rays Using Artificial Intelligence

Abhinav Suri; Sisi Tang; Grace Choi; Nancy Anabaraonye; Winnie Xu; James B. Parente; Ashley Terry; Anita Kalluri; Katie Song; Elena Taratuta; Chamith S. Rajapakse

8:10 AM

Paper No. 20

Vertebral Growth Modulation Versus Natural History And Bracing: Longitudinal Follow-up To Skeletal Maturity In Early-adolescent Idiopathic Scoliosis Patients With Mid-thoracic Curves

Donita I. Bylski-Austrow; Lori A. Dolan

8:20 AM

Paper No. 21

Spatial Distribution Of Fat Within The Multifidus: Implications Relative To Spinal Biomechanics And Discogenic Pain

Karim Khattab; Lucas Dziesinski; Alexander Ballatori; Priya Nyayapati; Rebecca Crawford; Roland Krug; Aaron Fields; Conor W. O'Neill; Jeffrey Lotz; Jeannie Bailey

8:30 AM

Paper No. 22

Submaximal Electromyography-Driven Musculoskeletal Modeling Of The Human Spine: Equilibrium And Stability Analyses

Farshid Ghezelbash; Saeed Shirazi-Adl; Ali Shahvarpour; Denis Gagnon; Navid Arjmand; Amir Hossein Eskandari; Christian Larivière

8:40 AM

Paper No. 23

Infectious And Autoinflammatory Etiologies Of Modic Type 1 Changes Have Different Cytokine Profiles

Irina Heggli; Regula Schüpbach; Nick Herger; Tamara Mengis; Roy Hove; Nadja Farshad-Amacker; Michael Betz; José Miguel Spirig; Florian Wanivenhaus; Christoph Laux; Florian Brunner; Oliver Distler; Stefan Dudli

8:50 AM

Paper No. 24

Upper Rib Cage In Patients With Adolescent Idiopathic Scoliosis - Corrective Surgery Influences On The Upper Ribs Resulting In The Shoulder Balance-

Yoko Ishikawa; Yuichiro Abe; Terufumi Kokabu; hiroyuki tachi; Takahiko Hyakumachi; Hideki Sudo;
Norimasa Iwasaki

Saturday, February 5, 2022

11:15 AM - 12:15 PM

Room Ballroom AB

Session 6 Spotlight - Stem Cells for Cartilage Repair: Are we there yet? (featuring Brian Johnstone)

Moderators: Tom Hodgkinson and Jie Shen

11:15 AM

Paper No. 25

MSCs Transfer Mitochondria To Rescue Chondrocytes From Chemical, Environmental And Mechanical Stress

Megan Fahey; Maureen Bennett; Lindsay Browning; Matthew Thomas; Lawrence Bonassar; Michelle Delco

11:25 AM

Paper No. 26

Human Gdf5⁺ Mesodermal Cells Show Gene Expression Profile Resembling Tendon/ligament Precursors And Preferentially Generate Permanent Cartilage Through A Cell Non-autonomous Mechanism

Sarah Easton; Guangsheng Pei; Azim Pothiawala; Berke E. Sahbazoglu; Nadine Matthias; Bryan K. Ang; Johnny Huard; Zhongming Zhao; Naoki Nakayama

11:35 AM

Paper No. 27

Articular Cartilage Repair By autologous ipsc Derivatives In Miniature Swine Model

Ming-Song Lee; Athillesh Sivapatham; Hongli Jiao; Ellen Leiferman; Yan Lu; Brett Nemke; Matthew Leiferman; Mark Markel; Wan-Ju Li

11:45 AM

Spotlight Speaker

Chondrogenic Cells for Cellular Therapies

Brian Johnstone

Saturday, February 5, 2022

11:15 AM - 12:18 PM

Room Ballroom C

Session 7 NIRA - Biomaterials and Therapeutics

Moderators: Kent Leach and Rebecca Wachs

11:15 AM

Paper No. 28

Injectable Hydrogel With Immobilized BMP-2 Mimetic Peptides And Stem Cells For Local Bone Regeneration

Sebastian L. Vega; Kirstene Gultian; Roshni Gandhi; Kayla DeCesari; Tae Won B. Kim

11:24 AM

Paper No. 29

Tunable Tissue-engineered Cryogel-mediated Lentiviral Delivery Of BMP-2 As A Treatment Method In A Novel Murine Atrophic Nonunion Model

Katie R. Hixon; Dakota B. Katz; Jennifer A. McKenzie; Anna N. Miller; Farshid Guilak; Matthew J. Silva

11:33 AM

Paper No. 30

Salt Inducible Kinase Inhibitors As A Potential Novel Therapeutic For Fracture Repair

Kaveh Momenzadeh; Diana Yeritsyan; Mohammadreza Abbasian; Nadim Kheir; Edith Martinez-Lozano; Hanna Philip; Mohamed Yousef; Jinhua Wang; Marc N. Wein; Ara Nazarian

11:42 AM

Paper No. 31

A Targeted Drug Delivery Approach In Deep Bone Infections Using Synthetic Hydroxyapatite As A Recruiting Moiety

Sujeesh Sebastian; Felix Tandberg; Yang Liu; Magnus Tägil; Lars Lidgren; Deepak Bushan Raina

11:51 AM

Paper No. 32

Multi-layered Mechanically Robust Composite Scaffolds For Osteochondral Defect Repair

Mark Lemoine; Arlyng Gonzalez-Vazquez; Lia Blokpoel Ferreras; Pieter Brama; John M. O'Byrne; Daniel J. Kelly; Fergal J. O'Brien

12:00 PM

Paper No. 33

Ultra-low Dose Bone Morphogenic Protein-2/7 Heterodimer Delivered Via A Collagen-hydroxyapatite Scaffold For Critical Femoral Defect Healing In Rats

Deepak Bushan Raina; Yang Liu; Ines Ambite; Eamon Sheehy; Sujeesh Sebastian; Corina Vater; Stefan Zwingenberger; Fergal O'Brien; Magnus Tagil

12:09 PM

Paper No. 34

Tissue Fortification And Bulking Via Mechano-instructive Materials To Direct Meniscus Repair

Ryan Locke; Jonathan Galarraga; Sereen A. Assi; Hannah Zlotnick; Abhishek P. Dhand; Taimoor H. Qazi; Victoria G. Muir; Jay Patel; Jason A. Burdick; Robert Mauck

Saturday, February 5, 2022

11:15 AM - 12:15 PM

Room Ballroom D

Session 8 Intervertebral Disc - Pathophysiology and Mechanics

Moderators: Dawn Elliott and Makarand Risbud

11:15 AM

Paper No. 35

On-chip Disc-macrophage Crosstalk Pitches A Potential Strategy To Retard Intervertebral Disc Degeneration

Li (Jasmine) Xiao; Yuan Xing; Yi He; Yong Wang; Li Jin; Xudong Li

11:25 AM

Paper No. 36

Single-cell Transcriptomics Reveals Emergent Nucleus Pulposus Cell Subpopulations In The Postnatal Mouse Disc

Chenghao Zhang; Yian Khai Lau; Leilei Zhong; Lutian Yao; Meilun Wu; Ling Qin; Neil Malhotra; Lachlan Smith

11:35 AM

Paper No. 37

Conditional Deletion Of Hif-2 α In The Nucleus Pulposus Ameliorates Aging-dependent Early Degenerative Changes In The Mouse Intervertebral Disc

Shira Johnston; Vedavathi Madhu; Makarand Risbud

11:45 AM

Paper No. 38

Characterizing Fracture Properties Of Disc Annulus Fibrosus: A Multiscale Failure Propagation Study

Farshid Ghezelbash; Xuan Li; Hatem M. Titi; Zhen Yang; Guangyu Bao; Yin Liu; Saeed Shirazi-Adl; Matthew J. Harrington; Elizabeth Zimmermann; Benjamin R. Freedman; Lisbet Haglund; Jianyu Li

11:55 AM

Paper No. 39

Deficits In Cartilage Endplate Composition Assessed By UTE MRI Associate With More Severe Disc Degeneration In Patients With Chronic Low Back Pain

Noah B. Bonnheim; Ann A. Lazar; Jiamin Zhou; Ravi Chachad; Nico Sollmann; Xiaojie Guo; Claudia Iriondo; Conor O'Neill; Jeffrey C. Lotz; Roland Krug; Aaron J. Fields

12:05 PM

Paper No. 40

Decreased T1rho Relaxation Is Associated With Increased In Vivo Disc Deformations Following Dynamic Loading

James A. Coppock; Zoe A. Englander; Nicole E. Zimmer; Stephanie T. Danyluk; Andrzej S. Kosinski; Charles E. Spritzer; Adam P. Goode; Louis E. DeFrate

Saturday, February 5, 2022

11:15 AM - 12:15 PM

Room 24-25

Session 9 Shoulder Mechanics and Morphology

Moderators: Richard Debski and Joseph Mozinga

11:15 AM

Paper No. 41

A Machine Learning Pipeline For Highly-Sensitive Assessment Of Rotator Cuff Function In Mice

David Darevsky; Daniel Hu; Francisco Gomez; Michael Davies; Xuihui Liu; Brian Feeley

11:25 AM

Paper No. 42

Tendon Retraction After Rotator Cuff Repair And Its Relationship With Postoperative Repair Integrity

Kathleen Derwin; Sambit Sahoo; Bong-Jae Jun; Jinjin Ma; Andrew Baker; Cathy Shemo; Tammy Owings; Greg Strnad; Yuxuan Jin; Ahmet Erdemir; Jason Ho; Vahid Entezari; Mark Schickendantz; Lutul Farrow; Alfred Serna; Joshua Polster; Carl Winalski; Peter Imrey; Eric Ricchetti; Joseph Iannotti

11:35 AM

Paper No. 43

Curvature And Cartilage Thickness Are Related In The Proximal Radial Head

Joseph M. Amadio; Kathryn L. Smolinski; Anne K. Smolinski; Alexander Kharlamov; Patrick J. Schimoler; Mark Carl Miller

11:45 AM

Paper No. 44

Scapula Features Associated With Rotator Cuff Tears Alter Glenohumeral Range-of-motion In A Congruence-based Model

Erin CS Lee; Nathan M. Young; Michael J. Rainbow

11:55 AM

Paper No. 45

Three-dimensional Medial-lateral Border Approach For Glenoid Morphology Measurements

Lauren Wilder; Peter Simon; Justin Reyes; Mark Frankle

12:05 PM

Paper No. 46

How Much Glenoid Bone Loss Needs To Be Restored With A Latarjet?

Ryan C. Rauck; Christopher Brusalis; Amirhossein Jahandar; Andreas Kontaxis; Samuel Taylor

Saturday, February 5, 2022

11:15 AM - 12:15 PM

Room 18-19

Session 10 Immune Regulation in Tendon Disease and Healing

Moderators: Anne Gingery and Neal Millar

11:15 AM

Paper No. 47

Dysregulated Immune Homeostasis In Human Tendon Disease Identified By Single Cell And Spatial Transcriptomics

Moeed Akbar; Lucy MacDonald; Lindsay Crowe; Sarah Snelling; Iain McInnes; Neal Millar

11:25 AM

Paper No. 48

Innate Inflammatory Response Is Implicated In Onset Of Tendinopathy

Rebecca Bell; Nathaniel H. Allan-Rahill; David M. Small; Lainie E. Eisner; Jason C. Marvin; Nozomi Nishimura; Nelly Andarawis-Puri

11:35 AM

Paper No. 49

Allergy-induced Systemic Inflammation - A Novel Risk Factor For Developing Tendinopathies?

Christine Lehner; Gabriel Spitzer; Patrick Langthaler; Bernhard Iglseder; Richard Weiss; Herbert Tempfer; Andreas Traweger

11:45 AM

Paper No. 50

Anterior Cruciate Ligament Transection Alters Viscoelastic Properties Of Collagen Fibrils In Rabbit Collateral Ligaments 8 Weeks Post-surgery

Gustavo A. Orozco; Aapo Ristaniemi; Mehrnoush Haghighatnejad; Mikko Finnila; Simo Saarakkala; Walter Herzog; Hanna Isaksson; Rami K. Korhonen

11:55 AM

Paper No. 51

CCR2 Identifies Tendon-resident T-cell And Macrophage Populations While CCR2^{-/-} Impedes Late Tendon Healing

Samantha Muscat; Anne Nichols; Emma Gira; Alayna Loiselle

12:05 PM

Paper No. 52

Janus Tough Adhesives For Tendon Immunomodulation

Benjamin R. Freedman; Sungmin Nam; Esther Koh; Andreas Kuttler; Eckhard Weber; David J. Mooney

Saturday, February 5, 2022

3:15 PM - 4:15 PM

Room Ballroom AB

Session 11 Spotlight - Bone Precision Medicine (featuring Todd McKinley)

Moderators: Whitney Bullock and Melanie Haffner-Luntzer

3:15 PM

Paper No. 53

Timing Of Systemic Glucocorticoid Administration Increases Repeat Fracture Risk

Justin M. David; Gregory Benes; Vinod Dasa; Peter Krause; Deryk Jones; Lauren Leslie; Andrew G. Chapple

3:25 PM

Paper No. 54

Unique Transcriptional Signatures Of Staphylococcus Aureus Strains Causing Mild, Moderate, And Severe Illness Among Children With Acute Hematogenous Osteomyelitis

Ahmad Hachem; Laura Filkins; Prithvi Raj; Naureen Tareen; Carlos Arana; Gowrishankar Muthukrishnan; Lawson A. Copley

3:35 PM

Paper No. 55

Enhanced Bone Remodeling After Fracture Priming

Jose Ramirez-GarciaLuna; Karla Rangel-Berridi; Ore-Oluwa Olasubulumi; Janet Henderson; Derek Rosenzweig; Paul Martineau; Rahul Gawri

3:45 PM

Spotlight Speaker

Precision Approaches for Polytrauma: Measuring Patient-Specific Injury Signatures to Optimize Outcomes in Multiply Injured Patients with Fractures

Todd McKinley

Saturday, February 5, 2022

3:15 PM - 4:09 PM

Room Ballroom C

Session 12 NIRA - Cartilage Development and Osteoarthritis

Moderators: Karin Payne and Chia-Lung Wu

3:15 PM

Paper No. 56

Integration Of Melt-Electrowriting (MEW)-Reinforced Hydrogel Composites Within Explanted Cartilage Rings

Jonathan H. Galarraga; Ryan C. Locke; Brendan D. Stoeckl; Jos Malda; Riccardo Levato; Robert L. Mauck; Jason A. Burdick

3:24 PM

Paper No. 57

Tissue-specific Extracellular Matrix Derived Scaffolds Incorporating Aligned Pore Architectures Promote Zonally Defined Articular Cartilage Regeneration In A Clinically Relevant Large Animal Model

David Browe; Pedro Diaz Payno; Rossana Schipani; Fiona Freeman; Ross Burdis; Ahern Daniel; Lindsey Randall; Selcan Guler; Jessica Nulty; Conor Buckley; Daniel Kelly

3:33 PM

Paper No. 58

Synovial Joint Cavitation Initiates With Formation Of Microlumens And Is Dependent On Has2 Expression

Minwook Kim; Eiki Koyama; Cheri M. Saunders; William Querido; Nancy Pleshko; Maurizio Pacifici

3:42 PM

Paper No. 59

Mechano-regulatory Role Of TRPV4 In Prenatal Limb Development

Nidal S. Khatib; Saima Ahmed; Yuming Huang; David Hoey; Niamh C. Nowlan

3:51 PM

Paper No. 60

Intraarticular Thermoresponsive Hydromorphone Prodrug Ameliorates Post-traumatic Osteoarthritis Pain With No Apparent Central Nervous System Effect

Xin Wei; Ningrong Chen; Gang Zhao; Zhenshan Jia; Mary Goldring; Steven Goldring; Dong Wang

Saturday, February 5, 2022

3:15 PM - 4:15 PM

Room Ballroom D

Session 13 Knee Biomechanics

Moderators: Stephanie Cone and Braden Fleming

3:15 PM

Paper No. 62

Posterior Tibial Slope And Meniscal Slope Correlate With In Vivo Internal Tibial Rotation During High Impact Activities

Toshikazu Tanaka; Kyohei Nishida; Caiqi Xu; Tom Gale; William Anderst; Freddie Fu

3:25 PM

Paper No. 63

Increased ACL Strain During A Single-legged Jump Is Associated With A Straight Knee In Both The Sagittal And Coronal Planes

Jacqueline N. Foody; Patrick X. Bradley; Charles E. Spritzer; Jocelyn R. Wittstein; Louis E. DeFrate; Zoe A. Englander

3:35 PM

Paper No. 64

Lower Extremity Segment Angle And Dynamic Joint Line Obliquity During Walking Before And After High Tibial Osteotomy In Patients With Varus Knee Osteoarthritis

Koji Iwasaki; Yasumitsu Ohkoshi; Shigeyuki Sakurai; Kazuki Sasaya; Kengo Ukishiro; Kensaku Kawakami; Shoji Suzuki; Tatsunori Maeda; Tomohiro Onodera; Eiji Kondo; Norimasa Iwasaki

3:45 PM

Paper No. 65

Non-anatomic Lateral Extra-articular Tenodesis Is Biomechanically Superior Over Anatomical Anterolateral Ligament Reconstruction In Augmentation Of Anterior Cruciate Ligament Reconstruction

Samuel Van de Velde; Willem Alexander Alexander Kernkamp; Scott Telfer; Ewoud R.A. van Arkel; Gregory Schmale

3:55 PM

Paper No. 66

Robotic Method To Measure 3d Patellofemoral Kinematics During Complex Knee Motions

Iris Blatter; Eik Siggelkow; Alexandra Oswald; Marc Bandi

4:05 PM

Paper No. 67

ACL Transection Results In A Posterior Shift And Increased Velocity Of Contact Most Prevalent In The Medial Compartment

Suzanne Maher; Ashley Pekmezian; Amanda Wach; Tony Chen; Kalle Chastain; Joseph Ruzbarsky; Markus Wimmer; Russell F. Warren; Peter Torzilli

Saturday, February 5, 2022

3:15 PM - 4:15 PM

Room 24-25

Session 14 Clinical Research Methodology and Analysis

Moderators: Cale Jacobs and Lisa MacFadden

3:15 PM

Paper No. 68

Modes Of Covariation Between Scapular Shape And Rotator Cuff Muscle Quality In Oa Patients With B Glenoid

Nazanin Daneshvarhashjin; Filip Verhaegen; Bernardo Innocenti; Lennart Scheys

3:25 PM

Paper No. 69

Effect Of Surgical Intervention In Anterior Shoulder Instability

Jumpei Inoue; Tetsuya Takenaga; Atsushi Tsuchiya; Norio Okubo; Katsumasa Sugimoto; Hideyuki Goto; Satoshi Takeuchi; Keishi Takaba; Hideki Murakami; Masahito Yoshida

3:35 PM

Paper No. 70

Donor-recipient Blood Type Mismatching Does Not Correspond With Failure After Osteochondral Allograft Transplantation

Jonathan Williams; Josephine Luk; Kylee Rucinski; Chantelle C. Bozynski; Aaron M. Stoker; James P. Stannard; James L. Cook

3:45 PM

Paper No. 71

Evaluation Of Perioperative Complications And Procedure Trends In Shoulder Instability Repair

Christopher T. Eberlin; Nathan H. Varady; Michael P. Kucharik; Sara A. Naessig; Wendy M. Meek; Matthew J. Best; Scott D. Martin

3:55 PM

Paper No. 72

Reducing Pain Catastrophizing Before Primary Total Knee Arthroplasty Using Cognitive Behavioral Therapy: A Meta-Analysis

Benjamin Mero; Seth Tautges; Julio Castillo Tafur; Ye Lin; Mark Gonzalez

4:05 PM

Paper No. 73

Immersive Mixed Reality Stair Climbing For Use In Clinical Lower Extremity Evaluations And Therapy

Bradley Nelson; July Latimer; Olivia Felton; Jonathan Rylander

Saturday, February 5, 2022

3:15 PM - 4:25 PM

Room 18-19

Session 15 Hip Dysplasia

Moderators: Shota Higashihira and Mei Wang

3:15 PM

Paper No. 74

Ultrasound Evaluation Of Healthy Infant Hips In The Pavlik Harness And Commercial Baby Carriers

Safeer F. Siddicky; Jason P. Eckels; Junsig Wang; Sidhant S. Dalal; Brien M. Rabenhorst; James Kee; Erin M. Mannen

3:25 PM

Paper No. 75

Associations Between Abnormal Muscle-induced Biomechanics And Patient-reported Outcomes Among Patients With Developmental Dysplasia Of The Hip

Michael D. Harris; Keith R. Lohse; Tina Wu; Linda Van Dillen; John C. Clohisy

3:35 PM

Paper No. 76

Increased Allograft Width For Circumferential Labral Reconstruction Better Restores Hip Suction Seal

David R. Maldonado; Michael B. Banffy; Dave Huang; Trevor J. Nelson; Shrey Kanjiya; Melodie Metzger

3:45 PM

Paper No. 77

Prediction Of Clinical Measures Of Femoral Head Coverage From Statistical Shape Modeling Parameters In Patients With Developmental Dysplasia

Penny R. Atkins; Praful Agrawal; Joseph D. Mozingo; Keisuke Uemura; Kunihiro Tokunaga; Christopher L. Peters; Shireen Y. Elhabian; Ross T. Whitaker; Andrew E. Anderson

3:55 PM

Paper No. 78

Multiaxial Strain Mapping To Characterize The Hip Capsular Anatomy And Mechanical Properties

Kabelan J. Karunaseelan; Geoffrey Ng; Sarah K. Muirhead-Allwood; Richard J. van Arkel; Jonathan R.T. Jeffers

4:05 PM

Paper No. 79

Three-dimensional Positional Relationship Between The Fovea Capitis And The Acetabular Lunate Surface In Dysplastic Hips

Tohru Irie; Alejandro A Espinoza Orías; Tomoyo Irie; Shane Nho; Daisuke Takahashi; Norimasa Iwasaki; Nozomu Inoue

4:15 PM

Paper No. 335 (moved from Session 63)

Does Bone Turnover Explain High Bone Density In Femoroacetabular Impingement? An Analysis Of PET And CT Imaging

Andrew D. Speirs; Gerd Melkus; Kawan Rakhra; Paul Beaulé

Saturday, February 5, 2022

4:30 PM - 5:30 PM

Room Ballroom AB

Session 16 Bone - Growth, Development and Aging

Moderators: Sarah McBride-Gagy and Meghan McGee-Lawrence

4:30 PM

Paper No. 80

The Gut Microbiome Has Sexually Dimorphic Effects On Bone Remodeling

Maya C. Moody; Ghazal Vahidi; Stephen Martin; Seth Walk; Chelsea Heveran

4:40 PM

Paper No. 81

Slc1a5 Provides Glutamine And Asparagine To Support Proliferation And Protein Synthesis In Osteoblasts

Deepika Sharma; Yilin Yu; Leyao Shen; Guo-Fang Zhang; Courtney M. Karner

4:50 PM

Paper No. 82

Mechanical Loading Ameliorates Negative Effects Of Nucleotide Analogue Reverse-transcriptase Inhibitor TDF On Bone Repair

Jianing Zhang; Yanrong Tong; Yang Liu; Yao Xiao; Chao Liu

5:00 PM

Paper No. 83

Significant Increases In Osteoclastic Bone Resorption Observed In Mice Infected With SARS-CoV-2

Olatundun D. Awosanya; Christopher E. Dalloul; Ushashi C. Dadwal; Rachel J. Blosser; Nicholas Hux; Abdullah G. Elsayed; Nikhil P. Tewari; Samuel Zike; Mariel Carozza; Michael J. Klemsz; Nancy A. Johnston; Edward F. Srou; Angela Bruzzaniti; Melissa A. Kacena

5:10 PM

Paper No. 84

Mineralocorticoid Receptor Inhibition Improves Muscle Strength And Physical Activity In Aged Glucocorticoid Receptor Deficient Female Mice

Husam Eldin Bensreti; Chris Whichard; Debra Irisk; Anik Tuladhar; Hayden Faith; Kanglun Yu; Emily Parker; Jennifer Dorn; Wendy B. Bollag; Mark W. Hamrick; Xingming Shi; Carlos M. Isales; Meghan E. McGee-Lawrence

5:20 PM

Paper No. 85

Sympathetic Cholinergic Innervation Promotes Bone Maintenance And Osteocyte Survival

Stephen Gadomski; Claire Fielding; Andres Garcia-Garcia; Claudia Korn; Sadaf Ashraf; Scott Dillon; Michael Sendtner; Cosimo De Bari; Andrew McCaskie; Pamela Robey; Simon Mendez-Ferrer

Saturday, February 5, 2022

4:30 PM - 5:24 PM

Room Ballroom C

Session 17 NIRA - Disc, Shoulder and Tendon

Moderators: Adam Abraham and Hani Awad

4:30 PM

Paper No. 86

Investigating The Role Of Nucleus Pulposus Cells In Induction Of Low Back Pain

Wensen Jiang; Juliane Glaeser; Giselle Kaneda; Stephen Stephan; Khosrowdad Salehi; Julie Chan; Wafa Tawackoli; Pablo Avalos; Christopher Johnson; Linda Kanim; Alexander Noll; Joshua Burda; Oksana Shelest; Tiffany Perry; Michael Kropf; Hyun Bae; Laura Stone; Dmitriy Sheyn

4:39 PM

Paper No. 87

Long-term Treatment With Senolytic Drugs Dasatinib And Quercetin Ameliorates Age-dependent Intervertebral Disc Degeneration In Mice

Emanuel J. Novais; Victoria A. Tran; Shira N. Johnston; Kayla R. Darris; Alex J. Roupas; Garrett A. Sessions; Irving M. Shapiro; Brian O. Diekman; Makarand V. Risbud

4:48 PM

Paper No. 88

Role Of Individual Hypoxia-inducible Factors In Fap Fibrogenesis And Adipogenesis

He Zhang; Mengyao Liu; Hubert Kim; Brian T. Feeley; Xuhui Liu

4:57 PM

Paper No. 89

Early Joint Use Following Elbow Dislocation Prevents Post-traumatic Joint Contracture In A Rat Model

Alex Reiter; Hayden Schott; Ryan Castile; Paul Cannon; Necat Havlioglu; Aaron Chamberlain; Spencer Lake

5:06 PM

Paper No. 90

mTORC1 Signaling Initiate Early Differentiation And Enhance Tenocyte Maturation In Tendon

Yeonju Lee; Na Rae Park; Nathaniel Dymant; Kyu-Sang Joeng

5:15 PM

Paper No. 91

Directing iPSC Differentiation Into Itenocytes Using Combined Scleraxis Overexpression And Cyclic Loading

Angela Papalamprou; Victoria Yu; Angel Chen; Tina Stefanovich; Chloe Castaneda; Giselle Kaneda; Koz Salehi; Juliane Glaeser; Dmitriy Sheyn

Saturday, February 5, 2022

4:30 PM - 5:30 PM

Room Ballroom D

Session 18 Biomaterials - Cartilage Repair and Regeneration

Moderators: Gun-Il Im and Jie Shen

4:30 PM

Paper No. 92

Transcriptome Analyses Of Normal And OA Chondrocytes Cultured In 3D Viscoelastic Alginate Hydrogels

Pranay Agarwal; Nidhi Bhutani; Ovijit Chaudhuri; Hongpyo Lee; Dhiraj Indana

4:40 PM

Paper No. 93

Cartilage Thermomechano-transduction: A Calcium-dependent And TRPV4-mediated Process Promoting Chondrogenesis

Naser Nasrollahzadeh; Lee Applegate; Dominique Pioletti

4:50 PM

Paper No. 94

In Vivo Validation Of A Continuous Gradient Porous Scaffold For Osteochondral Defect Repair In A Rabbit Model

Kyra W.Y. Smith; Soheila Aliakbarighavimi; Stephanie Logterman; Paul M. Gehret; Gioacchino Conoscenti; Valerio Brucato; Vincenzo La Carrubba; John T. Lawrence; Riccardo Gottardi

5:00 PM

Paper No. 95

Particulate Debris Of Double-network Hydrogel Elicits An Inflammatory Response In Macrophage And Promotes Local Pathological Bone Resorption In Mouse Models

Gen Matsumae

5:10 PM

Paper No. 96

Immunomodulation Of Mesenchymal Stromal Cells Cultured On siRNA-activated Scaffolds For The Treatment Of Osteoarthritis

Domhnall C. Kelly; Tom Hodgkinson; James E. Dixon; Caitriona M. O'Driscoll; Caroline M. Curtin; Fergal J. O'Brien

5:20 PM

Paper No. 97

Sliding Hydrogels With Tunable Mobility Enhance Stem Cell-based Cartilage Regeneration Via Modulating Cytoskeletal Organization

Xinming Tong; Manish Ayushman; Fan Yang

Saturday, February 5, 2022

4:30 PM - 5:30 PM

Room 24-25

Session 19 Imaging - Basic and Translational Science

Moderators: Richard Bell and Simo Saarakkala

4:30 PM

Paper No. 98

A Radiomics And Machine Learning Model Identifies Biomarkers Of SARS-CoV-2-induced Systemic Bone Loss

Anne K. Haudenschild; Erin E. Ball; Jasper H.N. Yik; Lark L. Coffey; Dominik R. Haudenschild; Blaine A. Christiansen

4:40 PM

Paper No. 99

Quantification Of Cartilage Degeneration By Surface Curvature Using 3D Scanning In A Rabbit Model

Dawei Liang; Tomohiro Onodera; Masanari Hamasaki; Ryosuke Hishimura; Kentaro Homan; Liang Xu; Yuan Tian; Satoshi Kanai; Norimasa Iwasaki

4:50 PM

Paper No. 100

Contrast Enhanced CT Imaging For Early Osteoarthritis Diagnosis Using Carionic Contrast Agents

Chenzhen Zhang; Armin Vedadghavami; Ambika Bajpayee

5:00 PM

Paper No. 101

Quantifying Ankle Arthritis Using A 3D Hounsfield Unit Weight-bearing Computed Tomography Algorithm

Tutku Tazegul; Nacime Salomao B. Mansur; Kevin Dibbern; Matthieu Lalevee; Kepler Carvalho; Don Anderson; Cesar de Cesar Netto

5:10 PM

Paper No. 102

Raman Spectroscopy Of Proteoglycan-Depleted Bovine Cartilage For Detection And Quantification Of Pyridinium Crosslinks

Chao Wang; Kimberly R. Kroupa; Sinisa Vukelic; Gerard A. Ateshian

5:20 PM

Paper No. 103

Tendon-related Extracellular Matrix Properties' Effect On Polarized Light-based Analysis Of Collagen Alignment

Leanne E. Iannucci; Matthew B. Riak; Spencer P. Lake

Saturday, February 5, 2022

4:30 PM - 5:30 PM

Room 18-19

Session 20 Hip and Knee Arthroplasty - Kinematics and Modeling

Moderators: Scott Banks and Fernando Quevedo Gonzalez

4:30 PM

Paper No. 104

An Autonomous Method Of Extracting Knee Kinematics From Single-plane Fluoroscopy

Andrew Jensen; Paris Flood; Lindsey Palm-Vlasak; Scott Banks

4:40 PM

Paper No. 105

Variability In Lunge Kinematics Using Different Measurement Methods

Azhar A. Ali; Jerry D'Alessio; Xiangyi (Cheryl) Liu

4:50 PM

Paper No. 106

Functional Performance After Total Knee Arthroplasty May Be Related To Contralateral Native Knee Kinematics Rather Than Operated Knee Kinematics

Nathan Hyre; Tom Gale; Milad Zarei; Alexandra Gabrielli; Sara Piva; William Anderst; Brian Klatt

5:00 PM

Paper No. 107

Results Of Primary Total Knee Arthroplasty Using Restricted Kinematic Alignment

Terry Presley; Charles M. Granade; Paul Eapen; Langan S. Smith; Madhusudhan Yakkanti; Arthur Malkani

5:10 PM

Paper No. 108

Knee Biomechanics Variance Inequality Following TKA With Either A Medial Pivot Or Posterior Stabilized Implant: A Randomized Control Study

Erik Kowalski; Danilo Catelli; Geoffrey Dervin; Mario Lamontagne

5:20 PM

Paper No. 109

Unicompartmental Knee Arthroplasty Restores Native Knee Kinematics Better Than Total Knee Arthroplasty

Elizabeth Heidenreich; Tom Gale; Venkata Kalyan C. Byrapogu; Kenneth Urish; William Anderst

Sunday, February 6, 2022

8:00 AM - 9:00 AM

Room Ballroom AB

Session 21 Spotlight - New Metabolic Avenues for Disease-Modifying and Pain Drugs in Osteoarthritis (featuring Mark Wilkinson)

Moderators: Deva Chan and Dominik Haudenschild

8:00 AM

Paper No. 110

DAB, An FDA-approved Drug, Protects Against Osteoarthritis Through Big2 Mediated Regulation Of TNF α And IL-1 β Signaling

Wenyu Fu; Shuya Wang; Guodong Sun; Ronghan Liu; Wenhao Song; Chuanju Liu

8:10 AM

Paper No. 111

Targeted Ablation Of Knee-innervating Nociceptors Reduces Cartilage Degeneration In Chronic Experimental Osteoarthritis

Lai Wang; Shingo Ishihara; Alia M. Obeidat; Li Jun; Richard J. Miller; Rachel E. Miller; Anne-Marie Malfait

8:20 AM

Paper No. 112

FABP5 Inhibition In Treating Osteoarthritis Pain

Rohan J. Shah; James Trainor; Chris R. Gordon; James Nicholson; Martin Kaczocha; David E. Komatsu

8:30 AM

Spotlight Speaker

The Molecular Landscape of OA and Prospects for Disease Modifying Drugs

J. Mark Wilkinson

Sunday, February 6, 2022

8:00 AM - 9:00 AM

Room Ballroom C

Session 22 Spotlight - Intervertebral Disc Imaging (featuring Simon Tang)

Moderators: Nancy Hadley-Miller and Lachlan Smith

8:00 AM

Spotlight Speaker

High-resolution Monitoring of the Intervertebral Disc During Injury, Degeneration and Recovery in Preclinical Models

Simon Tang

8:30 AM

Paper No. 113

Matrix Modification Of The Cartilage Endplate For Improving Solute Transport And Disc Nutrition

Mohamed Habib; Shayan Hussain; Oju Jeon; Eben Alsberg; Aaron Fields

8:40 AM

Paper No. 114

Association Of HIF- α Misexpression With Paraspinal Myogenic Dysregulation In Adolescent Idiopathic Scoliosis

Wai Kit Tam; Victor Leung; Kenneth Cheung

8:50 AM

Paper No. 115

An In-vivo Model Of Ligamentum Flavum Hypertrophy Capturing Early Stage Inflammation & Later Stage Hypertrophy

Kevin G. Burt; Dan C. M. Viola; Joseph Lombardi; Louis Amorosa; Nadeen O. Chahine

Sunday, February 6, 2022

8:00 AM - 9:00 AM

Room Ballroom D

Session 23 Biomaterials - Soft Tissue Repair and Regeneration

Moderators: Catherine Ambrose and Stephanie Moore-Lotridge

8:00 AM

Paper No. 116

Hybrid Microgels Enable Programmed Delivery Of Soluble Factors: Implications For Connective Tissue Healing

Robert N. Kent; Mohamed Said; Megan E. Busch; Ariane Tsai; Daniel L. Matera; William Y. Wang; Samuel J. DePalma; Harrison L. Hiraki; Megan L. Killian; Adam C. Abraham; Jae-Won Shin; Ariella Shikanov; Brendon M. Baker

8:10 AM

Paper No. 117

Retention Of Mesenchymal Stromal Cell Secretome In Engineered Hydrogels To Propel Muscle Repair

Kent Leach; Marissa A. Gionet-Gonzales; Robert Gresham; Katherine Griffin; Alena Casella; Ross P. Wohlgemuth; Lucas Smith

8:20 AM

Paper No. 118

HyA-Hydrogel Promotes Recovery Of Injured Supraspinatus Muscle In A Murine Chronic Rotator Cuff Repair Model

Michael Davies; Anthony Nguyen; Prashant Nuthalapati; Anouk Killaars; Hannah Chi; Francisco Gomez Alvarado; Daniel Hu; Kevin Healy; Xuhui Liu; Brian Feeley

8:30 AM

Paper No. 119

Dual Peptide Functionalized Alginate Hydrogels To Modulate Nucleus Pulposus Cell Phenotype

Xiaohong Tan; Era Jain; Marcos Barcellona; Evan Morris; Sydney Neal; Munish Gupta; Jacob Buchowski; Michael Kelly; Lori Setton; Nathaniel Huebsch

8:40 AM

Paper No. 120

Matrilin-2 And Lysine Enhanced Chitosan Scaffold Within A Type 1 Collagen Conduit Promotes Peripheral Nerve Regeneration And Motor Function Return Following A Segmental Nerve Defect In A Rat Model

Neill Y. Li; Brandon Vorrius; Elliott Rebello; Jonathan Ge; Zhen Qiao; Jing Ding; Julie Katarincic; Qian Chen

8:50 AM

Paper No. 121

Modulation Of Human Adipose Stem Cell Collagen Synthesis By Mechanosensing Of Substrate Architecture Through The Piezo1 Ion Channel

Neda Rashidi; Natalia S. Harasymowicz; Alireza Savadipour; Farshid Guilak

Sunday, February 6, 2022

8:00 AM - 9:00 AM

Room 24-25

Session 24 Education and Outreach in Orthopaedics

Moderators: Sonia Bansal and Daphney Chery

8:00 AM

Paper No. 122

The Perry Initiative Perry Outreach Program Participation Influences College Major, Graduate School Matriculation And Medical School Specialization

Laurie Dearolf; Jenni Buckley; Hannah Heuschneider; Lisa Lattanza

8:10 AM

Paper No. 123

Science Clubs International (SCI): An Online Hands-on Initiative To Increase Ibero-american Student Participation In Stem

Sebastian Cardona Ramirez; Haydee Pacheco-Flores; Aaron M. Stoker; James L. Cook

8:20 AM

Paper No. 124

Pivoting To Virtual Outreach Efforts For K-12 Students: A Comparison Of Two Approaches

Rachel H. Teater; Maura E. Eveld; Emily S. Matijevich; Shane T. King; David M. Ziemnicki; Cameron A. Nurse; Karl E. Zelik

8:30 AM

Paper No. 125

At-Home Inquiry-Based Learning Experiments For Biomaterials Education And Outreach During COVID-19

Christopher J. Panebianco; James C. Iatridis; Jennifer R. Weiser

8:40 AM

Paper No. 126

Reimagining Conferences As Platforms To Provide Early Research Exposure And Networking To Diverse Undergraduates

Hannah M. Zlotnick; Tala Azar; Sung Yeon Kim; Sienna C. Pyle; Elisabeth A. Lemmon; Ana P. Peredo; Catherine A. Bautista; Matthew Fainor; Robert L. Mauck; John F. Drazan; Brittany L. Taylor; Joel D. Boerckel; Eileen M. Shore; Sarah E. Gullbrand

8:50 AM

Paper No. 127

How Do Orthopaedic Surgery Residency Program Websites Feature Diversity? An Analysis Of 187 United States Orthopaedic Surgery Programs

Samuel A. Cohen; Michelle Xiao; Thompson Zhuang; John Michaud; Harsh Wadhwa; Lauren Shapiro; Robin Kamal

Sunday, February 6, 2022

8:00 AM - 9:00 AM

Room 18-19

Session 25 Foot and Ankle - Kinematics and Kinetics

Moderators: Don Anderson and Koren Roach

8:00 AM

Paper No. 128

Assessment Of Calcaneal Orientation Relative To The Talus In Varus Ankle Osteoarthritis Using Weightbearing Computed Tomography

Ho Won Kang; Dae-Yoo Kim; Gil Young Park; So Hyeon Kwon; Dong-Oh Lee; Dong Yeon Lee

8:10 AM

Paper No. 129

Evaluation Of Dynamic Subtalar Joint Articulation And Morphometric Shape Following Tibiotalar Arthrodesis And Total Ankle Replacement

Rich Lisonbee; Andrew Peterson; Charles Saltzman; Andrew Anderson; Amy Lenz

8:20 AM

Paper No. 130

Impact Of Calcaneal Pitch On Quantity And Quality Of Motion At The Tibiotalar And Subtalar Joints

Paige Paulus; Tom Gale; Shumeng Yang; Jessica Brown; Maria Munsch; MaCalus Hogan; William Anderst

8:30 AM

Paper No. 131

Rupture Of The Anterior Talofibular Ligament Increases Tibiotalar Inversion And Adduction During Walking In Dynamics Simulation Of Walking

Beomsu Shin; Yoocha Son; Seungbum Koo

8:40 AM

Paper No. 132

Contact Stress-Time Over-Exposure After Tibial Pilon Fracture Correlates With 18-month Changes In 3d Joint Space Width Measured From Weight Bearing CT

Mitchell R. Carlson; Michael Willey; Julie Agel; Conor Kleweno; Zachary Olsen; Justin Haller; Thomas Higgins; J. Marsh; Don Anderson

8:50 AM

Paper No. 133

Method For Optimizing Muscle Loads To Achieve Desired Ground Reaction Forces For Robotic In Vitro Gait Simulations

Tara F. Nagle; Callan M. Gillespie; Jeremy G. Loss; Robb W. Colbrunn

Sunday, February 6, 2022

11:15 AM - 12:15 PM

Room Ballroom AB

Session 26 Spotlight - Meniscus Degradation and Repair (featuring Amy McNulty)

Moderators: Martin Englund and Suzanne Maher

11:15 AM

Paper No. 134

In-vivo Identification Of Constitutive Material Parameters Of Healthy And Osteoarthritic Lateral Menisci Based On Magnetic Resonance Imaging And Inverse Finite Element Analysis

Jonas Schwer; Fabio Galbusera; Mirco Sgroi; Martin Faschingbauer; Anita Ignatius; Lutz Duerselen; Andreas Seitz

11:25 AM

Paper No. 135

Cartilage Progenitor Cell Line Stimulates Meniscus Repair And Protects Cartilage From Degeneration, In-vivo

Salomi Desai; Jake Newberry; John Twomey-Kozak; Janine Molino; Jay Trivedi; Brett Owens; Chathuraka Jayasuriya

11:35 AM

Paper No. 136

CD44-Incorporated Bioactive Glue To Promote Healing Of Lubricin-Infiltrated Avascular Meniscus Tears

Solaiman Tarafder; Samantha L. Eyen; Ryunhyung Kim; Chang Lee

11:45 AM

Spotlight Speaker

Combining Biology and Mechanics to Enhance Meniscus Healing

Amy McNulty

Sunday, February 6, 2022

11:15 AM - 12:18 PM

Room # Ballroom C

Session 27 NIRA - Biology and Inflammation

Moderators: Tamara Alliston and Russell Fernandes

11:15 AM

Paper No. 137

Aged Callus Skeletal Stem/progenitor Cells Contain An Osteo-inflammatory Subcluster With Increased IRF-STAT

Xi Lin; Hengwei Zhang; Jiatong Liu; Chia-Lung Wu; Andrew McDavid; Brendan F. Boyce; Lianping Xing

11:24 AM

Paper No. 138

A Novel Computational Pathology Model Phenotypes Inflammatory Arthritis At The Tissue And Cellular Level

Matt Brendel; Justin Xiang; Maxwell Konnaris; Mark Fontana; Miguel Otero; Edward Schwarz; Lionel Ivashkiv; Fei Wang; Richard Bell

11:33 AM

Paper No. 139

Transient Reduction In Lipid-laden Bone Marrow Adipocytes During Pregnancy And Lactation And Full Recovery After Weaning

Wonsae Lee; Yihan Li; Shaopeng Pei; Justin Leggin; Leilei Zhong; Ling Qin; X. Sherry Liu

11:42 AM

Paper No. 140

Effect Of Glycation On Raman Spectroscopy Measurements And Fracture Toughness Of Human Cortical Bone

Mustafa Unal; Sasidhar Uppuganti; Rafay Ahmed; Jacquelyn Pennings; Thomas Willett; Daniel Dapaah; Paul Voziyan; Jeffrey Nyman

11:51 AM

Paper No. 141

Mast Cell Deficiency Abrogates Disturbed Fracture Healing In Osteoporotic Mice

Verena Fischer; Deniz Ragipoglu; Johanna Diedrich; Anne Dudeck; Konrad Schütze; Miriam Kalbitz; Florian Gebhard; Melanie Haffner-Luntzer; Anita Ignatius

12:00 PM

Paper No. 142

Nell1 Regulates Extracellular Matrix Composition And Cell Matrix Interactions In Osteosarcoma

Qizhi Qin; Mario Gomez-Salazar; Robert J. Tower; Stanley Zhu; Leslie Chang; Edward McCarthy; Carol Morris; Xinlin Zhang; Aaron James

12:09 PM

Paper No. 61

Sex Dependent Effects Of High Fat Diet On PTOA Pain And Inflammation In Adult Mice

Sanique M. South; Jessica Lumry; Taylor Conner; Trejon James; Ravi Komaravolu; Padmaja Mehta-D'souza; Carla Scanzello; Tim Griffin

Sunday, February 6, 2022

11:15 AM - 12:15 PM

Room Ballroom D

Session 28 Cartilage and Synovium - Post-Traumatic Osteoarthritis: Lessons from Murine Models

Moderators: Karen King and Rachel Miller

11:15 AM

Paper No. 143

CXCL16 Mediates Cell Type-specific Inflammatory Signaling In Post-traumatic Osteoarthritis

Lindsey Lammlin; Alexander Knights; Stephen Redding; Lucas Junginger; Phillip Rzeczycki; Olivia Ellis; Rachel Bergman; Easton Farrell; Tristan Maerz

11:25 AM

Paper No. 144

Complement Factor D/Adipsin Knockout Mice Demonstrate Disparate Pain And Structural Damage Phenotypes In Obesity-induced Post Traumatic Osteoarthritis

Kelsey H. Collins; Kristin L. Lenz; Eleanor N. Pollitt; Arin K. Oestreich; Luke E. Springer; Antonina K. Akk; Xiaobo Wu; John P. Atkinson; Christine T.N. Pham; Farshid Guilak

11:35 AM

Paper No. 145

miRNA-150 Targets GPNMB And Increases Inflammation In A Post-traumatic Osteoarthritis Model

Hope C. Ball; Assad A. Al-Adlaan; Bryson Cook; Nazar Hussein; Fayez F. Safadi

11:45 AM

Paper No. 146

Superoxide Dismutase-loaded Porous Polymersomes As Highly Efficient Antioxidant Nanoparticles For Osteoarthritis Therapy

Tao Gui; Lijun Luo; Bonirath Chhay; Jun Li; Yulong Wei; Leilei Zhong; Lutian Yao; Wei Yu; Andrew Tsourkas; Zhiliang Cheng; Ling Qin

11:55 AM

Paper No. 147

CaMKK2 Inhibition Or Deletion Suppresses IL-6-Stat3 Activation And Protects Against Osteoarthritis

Jennifer A. Shutter; Xinchun Ding; Elsa Mevel; Justin N. Williams; Brett T. Mattingly; Stephen B. Trippel; Diane Wagner; William R. Thompson; David B. Burr; Uma Sankar

12:05 PM

Paper No. 148

Gβγ-GRK2 Signaling Regulates Macrophage Polarization And Synovitis In Osteoarthritis

Vengadeshprabhu Karuppa Gounder; William Pinamont; Natalie Yoshioka; Reyad Elbarbary; Fadia Kamal

Sunday, February 6, 2022

11:15 AM - 12:15 PM

Room 24-25

Session 29 New Approaches and Insights into the Treatment of Musculoskeletal Tumors

Moderators: Matthew Allen and Francis Hornicek

11:15 AM

Paper No. 149

Methylation Mediated Silencing Of Protein Kinase C Zeta Induces Apoptosis Avoidance Through ATM/CHK2 Inactivation In Dedifferentiated Chondrosarcoma

Eiji Shimada; Yoshihiro Matsumoto; Makoto Nakagawa; Yosuke Susuki; Makoto Endo; Nokitaka Setsu; Toshifumi Fujiwara; Keiichiro Iida; Akira Nabeshima; Kenichiro Yahiro; Atsushi Kimura; Takeshi Hirose; Masaya Kanahori; Ryunosuke Oyama; Yoshinao Oda; Yasuharu Nakashima

11:25 AM

Paper No. 150

The HDAC Inhibitor Romidepsin Is A Promising Therapeutic For Metastatic Osteosarcoma

Emily E. Seiden; Patrick J. Getty; Christopher D. Collier; Ed Greenfield

11:35 AM

Paper No. 151

Comparison Between Limb Sparing Surgery And Amputation Surgery In Patients With Localized Extremity Soft Tissue Sarcoma

Masatake Matsuoka; Tomohiro Onodera; Isao Yokota; Koji Iwasaki; Ryosuke Hishimura; Yuki Suzuki; Akira Iwata; Eiji Kondo; Norimasa Iwasaki

11:45 AM

Paper No. 152

Hydroxyapatite Mediated Delivery Of Doxorubicin For Efficient Intracellular And Sustained Extracellular Drug Delivery With Improved Tumor Eradication

Yang Liu; Aftab Nadeem; Sujeesh Sebastian; Martin A. Olsson; Sun N. Wai; Emelie Styring; Jacob Engellau; Hanna Isaksson; Magnus Tägil; Lars Lidgren; Deepak Bushan Raina

11:55 AM

Paper No. 153

Pre-clinical Evaluation Of A Nanoparticle Formulaton Of Mithramycin A For Treatment Of Ewing Sarcoma

Mei Yun Lin; Dandan Guo; Eytan Galanter; Tara E. Carney; Juntao Luo; Jason A. Horton

12:05 PM

Paper No. 154

Localized Nanoparticle-mediated Delivery Of miR-29b And Systemic Doxorubicin As A Potential Combination Therapy To Suppress Osteosarcoma Growth Whilst Also Aiding In The Regeneration Of The Surrounding Damaged Bone

Fiona E. Freeman; Pere Dosta Pons; Ross Burdis; Olwyn R. Mahon; Daniel Kelly; Natalie Artzi

Sunday, February 6, 2022

11:15 AM - 12:15 PM

Room 18-19

Session 30 Tendon and Ligament - Development and Homeostasis

Moderators: Brianne Connizzo and Matthew Fisher

11:15 AM

Paper No. 155

Non-muscle Myosins Are Critical Regulators Of Skeletal And Connective Tissue Formation

Mary K. Evans; Tonia K. Tsinman; Xi Jiang; Ellie Ferguson; Lin Han; Eiki Koyoma; Robert Mauck; Nathaniel Dymant

11:25 AM

Paper No. 156

Recruitment Of Perichondrial Hoxa11-expressing Stem/progenitor Cells Into Disrupted Mouse Tendons

Guak-Kim Tan; Brian A. Pryce; Deneen M. Wellik; Ronen Schweitzer

11:35 AM

Paper No. 157

Skeletal Nerves Modulate Tendon Repair

Masnsen Cherief; Jiajia Xu; Zhao Li; Stefano Negri; Mario Gomez-Salazar; Cammy Tang; Benjamin Levi; Aaron W. James

11:45 AM

Paper No. 158

The Postnatal Entesis Is Hypoxic And Depends On HIF1 α For Fibrocartilage Development

Zachary Tata; Tessa Phillips; Connor Leek; Adam C. Abraham; Ernestina Schipani; Megan L. Killian

11:55 AM

Paper No. 159

Structure-function Evaluation Of Indirect And Direct Insertions Of The Medial Collateral Ligament

Hannah R. Childs; Timothy Jacobsen; Elias G. Tzoc-Pacheco; Nadeen O. Chahine; Helen H. Lu

12:05 PM

Paper No. 160

Collagen XII Is A Critical Regulator Of Tendon Function: Development Of A Conditional Mouse Model

Ashley K. Fung; Mei Sun; Louis J. Soslowsky; David E. Birk

Sunday, February 6, 2022

4:00 PM - 5:00 PM

Room Ballroom AB

Session 31 Spotlight - Randomized Trials to inform Clinical Practice Orthopedics (featuring Michelle Ghert)

Moderators: Ashley Levack and Christian Wright

4:00 PM

Paper No. 161

Effect Of Patient Sex And Initial Graft Tension On Knee Osteoarthritis Outcomes At 12 Years After ACL Reconstruction

Meggin Q. Costa; Gary J. Badger; Cynthia A. Chrostek; Orianna D. Carvalho; Paul D. Fadale; Michael J. Hulstyn; Holly C. Gil; Robert M. Shalvoy; Braden C. Fleming

4:10 PM

Paper No. 162

A Novel Biofeedback Intervention Can Improve And Retain Loading Symmetry During Squatting In ACLR Patients

Sara L. Arena; Alexander Peebles; Robin M. Queen

4:20 PM

Paper No. 163

Intraosseous Morphine Decreases Postoperative Pain And Pain Medication Use In Total Knee Arthroplasty: A Double Blind, Randomized, Prospective Study

Bradley S. Lambert; Stephen Incavo; Ava Brozovich; Thomas Sullivan; Austin Winger; Terry Clyburn; Francesca Taraballi; Kwan Park

4:30 PM

Spotlight Speaker

The Prophylactic Antibiotic Regimens in Tumor Surgery (PARITY) International Randomized Controlled Trial

Michelle Ghert

Sunday, February 6, 2022

4:00 PM - 5:03 PM

Room Ballroom C

Session 32 NIRA - Muscle and Joint Mechanics

Moderators: Andrew Anderson and Jillian Beverage

4:00 PM

Paper No. 164

Intraoperative Experimental Measurement And Biomechanical Prediction Of Gracilis Muscle Properties

Benjamin I. Binder-Markey; Lomas S. Persad; Alexander Y. Shin; Kenton R. Kaufman; Richard L. Lieber

4:09 PM

Paper No. 165

Three-dimensional Distance Maps Of Ankle And Syndesmotoc Joints From Weightbearing CT In Progressive Collapsing Foot Deformity: A Retrospective Case-control Study

Kevin Dibbern; Andrew Behrens; Matthieu Lalevee; Nacime Salomao Barbachan Mansur; Kepler Carvalho; Don Anderson; Cesar de Cesar Netto

4:18 PM

Paper No. 166

Changes In Hip Muscle Force Contributions During Stand-to-sit Transition Using Osseointegrated Prostheses

Brecca M. M. Gaffney; Nicholas W. Vandenberg; Hope C. Davis-Wilson; Cory L. Christiansen; Gary Schneider; Tony Johnson; Jason W. Stoneback

4:27 PM

Paper No. 167

Computational Optimization As A Preoperative Planning Guide For Periacetabular Osteotomy Improves Contact Mechanics In Patients With Hip Dysplasia

Holly D. Aitken; Aspen Miller; Dominic J.L. Rivas; Robert W. Westermann; Michael C. Willey; Jessica E. Goetz

4:36 PM

Paper No. 168

Method To Quantify Hip Joint Incongruency And Direction Of Hip Instability In Young Adult Patients With Residual Hip Deformities After Legg-calvé-perthes Disease

Martina Guidetti; Philip Malloy; Shane J. Nho; TOHRU IRIE; Alejandro A. Espinoza Orias; Simon D. Steppacher; Till Lerch

4:45 PM

Paper No. 169

Detecting Mechanical Loosening Of Total Hip Replacement Implant From Plain Radiograph Using Deep Convolutional Neural Network

Alireza Borjali; Martin Magneli; Antonia Chen; Alisha Sodhi; Kartik Varadarajan; Orhun Muratoglu

4:54 PM

Paper No. 170

Analyzing Hip Impingement Conflict Using Patient-specific 3-dimensional Ct Models For Collision Detection In Young Patients With Severe Slipped Capital Femoral Epiphysis

Till D. Lerch; Florian Schmaranzer; Simon D. Steppacher; Moritz Tannast; Klaus Siebenrock; Young Jo Kim; Daniel Maranhó; Eduardo N. Novais

Sunday, February 6, 2022

4:00 PM - 5:00 PM

Room Ballroom D

Session 33 Bone Injury and Healing

Moderators: Elizabeth Balmayor and Feini Qu

4:00 PM

Paper No. 171

Investigating En1 And Lmx1b In Dorsoventral Patterning Of The Regenerating Mouse Digit Tip

Gemma Johnson; Morgan Glasser; Julia Charles; Jeffrey Duryea; Jessica Lehoczky

4:10 PM

Paper No. 172

Single Cell RNA Sequencing Reveals Immune Cell Heterogeneity Early In The Healing Of An Established Critical-size Bone Defect In Mice

Xueping Li; Ning Zhang; Thomas Ambrosi; Elijah Ejun Huang; Huaishuang Shen; Ni Su; Hirohito Hirata; Qi Gao; Masanori Tsubosaka; Junichi Kushioka; Zhenyu Yao; Fan Yang; Charles Chan; Stuart Goodman

4:20 PM

Paper No. 173

Yap-mediated Transcriptional Regulation Of Periosteal Progenitor Activation

Madhura Nijsure; Miriam Baitner; Dakota Jones; Yasaman Moharrer; Annapurna Pranatharthi-Haran; Greg Szeto; Nathaniel Dymont; Joel Boerckel

4:30 PM

Paper No. 174

Multiphoton Microscopy-based High Resolution Imaging Of Blood Vessel Specification During Cranial Defect Repair

Kevin Schilling Jr.; Yuankun Zhai; Edward Brown; Xinping Zhang

4:40 PM

Paper No. 175

Conditional Deletion Of IL-17ra In The Periosteal Mesenchyme Impairs Femoral Fracture Repair

Joseph L. Roberts; Hicham Drissi

4:50 PM

Paper No. 176

Microrna-181a/b-1 Enhances Bone Fracture Repair, In Part, By Suppression Of Pyruvate Dehydrogenase Kinase-4

Hongjun Zheng; Jin Liu; Jennifer McKenzie; Matthew Silva; Audrey McAlinden

Sunday, February 6, 2022

4:00 PM - 5:00 PM

Room 24-25

Session 34 Resident/Fellow

Moderators: William Mihalko and Kenneth Urish

4:00 PM

Paper No. 177

Human Fibroadipogenic Progenitors Donate Mitochondria To Muscle Stem Cells And Promote Myogenesis

Michael Davies; Hannah Chi; Steven Spusta; Daniel Hu; Steven Garcia; Prashant Nuthalapati; Hubert Kim; Xuhui Liu; Brian Feeley

4:10 PM

Paper No. 178

Assessing The Influence Of Body Mass Index, Tibial Component Surface Area, And Tibial Stem Length On Survivorship And Revision Rates In Total Knee Arthroplasty

Kristen Barton; Alexandru Florea; Kevin Boldt; Matthew Teeter; Lyndsay Somerville; Brent Lanting

4:20 PM

Paper No. 179

Understanding The Bone-related Gene Expressions In Human T2D

Dian A. Teguh; Jordan L. Nustad; Julia N. Moulton; Daniel J. Brooks; Ayesha Abdeen; Douglas K. Ayres; Jacob M. Drew; Marie B. Demay; Mary L. Bouxsein

4:30 PM

Paper No. 180

Evaluation Of SS-31 As A Potential Therapeutic In The Treatment Of Tendinopathy

Xueying Zhang; Hazel H. Szeto; Meng Zhang; Ying Zhang; Edward Bowen; Janice Havasy; Daoyun Chen; Shaohua Liu; Camila B. Carballo; Xiang-Hua Deng; Scott A. Rodeo

4:40 PM

Paper No. 181

Point-of-care Markerless Motion Capture And 4D Biomechanical Assessment Improves Clinical Utility Of Dynamic Balance Testing

Ryan T. Halvorson; Francine Castillo; Fayyaz Ahamed; Karim Khattab; Aaron Scheffler; Robert Matthew; Jeffrey Lotz; Brian Feeley; Jeannie F. Bailey

4:50 PM

Paper No. 182

Dynamic Changes In Intervertebral Lumbar Spine Kinematics During Gait May Explain Improvement In Back Pain In Hip-spine Syndrome

Stephen Chen; Clarissa LeVasseur; Christopher Como; Brandon Couch; Spencer Talentino; Brian Klatt; Michael O'Malley; William Donaldson; Joon Lee; William Anderst; Jeremy Shaw

Sunday, February 6, 2022

4:00 PM - 5:00 PM

Room 18-19

Session 35 Hip and Knee Arthroplasty - Complications, Wear and Infections

Moderators: Marcel Betsch and Zeynep Seref-Ferlengez

4:00 PM

Paper No. 183

Development And Validation Of A Novel Non-osteoarthritic Mouse Model Of Knee Arthrofibrosis

Louis Dagneaux; Afton Limberg; Aaron Owen; Jacob Bettencourt; Amel Dudakovic; Banu Bayram; Andre van Wijnen; Daniel Berry; Joaquin Sanchez-Sotelo; Mark Morrey; Matthew Abdel

4:10 PM

Paper No. 184

Leptin Receptor Expressing Cells Accumulate And Divert To A Fibrogenic Phenotype In Mouse And Human Peri-implant Fibrotic Tissue

Vincentius J. Suhardi; Juan D. Lopez; Di Qin; Fei Shu; Emile-Victor Kuyl; Anastasia Oktarina; Catherine Fan; Alexander Alexandrov; Nathaniel Manrique; Matthew B. Greenblatt; Lionel B. Ivashkiv; Mathias P.G. Bostrom; Xu Yang

4:20 PM

Paper No. 185

Bacterial DNA Screening To Characterize Surgical Site Infection Risk In Orthopaedic Patients

Preston Wolfe; Brian D. Campfield; Brett D. Crist; James A. Keeney; Matthew J. Smith; James L. Cook

4:30 PM

Paper No. 186

Increased Failure After Irrigation And Debridement Alone Compared With Irrigation And Debridement With Modular Components Exchange For Acute Periprosthetic Joint Infection

Anirudh Buddhiraju; Christian Klemm; Daniel A. Marchwiany; Ingwon Yeo; Yasamin Habibi; Murad Subih; Ehab El Touny; Jillian C. Burns; John G. Esposito; Young-Min Kwon

4:40 PM

Paper No. 187

Cell Response And Survivability Of Implants Under Inflammatory And Infectious Chemical Environment

Kai-yuan Cheng; Puranjan Gupta; Deeptha Gokul; Divya Bijukumar; Mostafa Alhamad; Joseph Garry; Mathew T. Mathew

4:50 PM

Paper No. 188

Intra-articular Celecoxib Improves Knee Extension Both With And Without An Associated Surgical Release In A Rabbit Model Of Arthrofibrosis

Will Trousdale; Afton Limberg; Nicolas Reina; Christopher Salib; Daniel Berry; Mark Morrey; Joaquin Sanchez-Sotelo; Andre van Wijnen; Matthew Abdel

Monday, February 7, 2022

8:00 AM - 9:00 AM

Room Ballroom AB

Session 36 Spotlight - Tendon Matrix Biology (featuring Jess Snedeker)

Moderators: David Butler and Jason Shearn

8:00 AM

Paper No. 189

Mechano-epigenetic Regulation Of Tendon Extracellular Matrix Homeostasis Through YAP/TAZ

Nathaniel Dymont; Dakota Jones; Ryan Daniels; Xi Jiang; Mary Evans; Edward Bonnevie; Madhura Nijsure; Joel Boerckel; Robert Mauck

8:10 AM

Paper No. 190

The Formation Of Disulfide HMGB1 (dsHMGB1) In Tendon Matrix Mediates Tendinopathy Development Due To Mechanical Overloading

Jianying Zhang; Roshawn Brown; MaCalus Hogan; Kentaro Onishi; James H-C. Wang

8:20 AM

Paper No. 191

Ca²⁺ Signaling Mediated By Cav1.2 Voltage-gated Ca²⁺ Channel Regulates Tendon Formation

Brandon Dexter; Antonion Korcari; Scott Rodeo; Mark Buckley; Alayna Loiselle; Geoffrey S. Pitt; Chike Cao

8:30 AM

Spotlight Speaker

The Role of Mechanics in Tendon Biology: A Few Landmarks and a Rough Map

Jess Snedeker

Monday, February 7, 2022

8:00 AM - 9:00 AM

Room Ballroom C

Session 37 Bone Structure, Function and Mechanics

Moderators: Sophie Gilbert and Mitchell Schaffler

8:00 AM

Paper No. 192

A Longitudinal Study On The Geometrical, Structural And Material Properties Of Bone During Long-term Type-2 Diabetes Using A Zucker Diabetic Fatty (ZDF) Rat

Genna E. Monahan; Jessica Schiavi-Tritz; Ted J. Vaughan

8:10 AM

Paper No. 193

Perilacunar Bone Modulus Variation Is Distinct Between Bone-Forming And Non-Bone-Forming Osteocytes

Caleb Rux; Ghazal Vahidi; Amir Darabi; Lewis Cox; Chelsea Heveran

8:20 AM

Paper No. 194

Multi-scale Cortical Bone Phenotypes From Female And Male Mice Vary Across Eight Inbred Strains

Nicole Migotsky; Sumar Kumar; Matthew J. Silva

8:30 AM

Paper No. 195

Hypophosphatemia-related Alterations In Structure And Material Properties Of Fam20C Mouse Long Bones

Sabrina E. Kosnik; Joan E. LLabre; Xiaofang Wang; Deepak Vashishth

8:40 AM

Paper No. 196

Cholinergic Signaling Impacts Osteocyte Mechanotransduction

Macy Castaneda; Mariam Obajj; Karl Lewis

8:50 AM

Paper No. 197

Matrix-bound Water As A Determinant Of Fatigue Life In Trabecular Bone

Adrian J. Alepuz; Peter C. Shen; Sasidhar Uppuganti; Jeffry Nyman

Monday, February 7, 2022

8:00 AM - 9:00 AM

Room Ballroom D

Session 38 Knee Injury

Moderators: Lindsey Lepley and Sandra Schultz

8:00 AM

Paper No. 198

Mechanical Loading Effects On OA Progression Following ACL Injury And Reconstruction In A Murine Model: Radiographic Assessment Of Synovial Fibroblast Activity

Camila B. Carballo; Claire Eliasberg; Tony Chen; James Kelly; Janice Havasy; Alexander Piacentini; Yulei Liu; Purva Singh; Wataru Morita; Sarah Caughey; Edward Fung; Miguel Otero; John Babich; Scott Rodeo

8:10 AM

Paper No. 199

Effect Of Repeated Injections Of Intra-Articular Nerve Growth Factor In The Naïve Murine Knee Joint

Alia M. Obeidat; Shingo Ishihara; Lai Wang; Rachel E. Miller; Anne-Marie Malfait

8:20 AM

Paper No. 200

Exercise During Late Murine Adolescence Results In A Stronger Anterior Cruciate Ligament

Taeyong Ahn; Danielle N. Ochocki; Ben Loflin; Kaitlyn A. Colglazier; Stephen H. Schlecht

8:30 AM

Paper No. 201

ACL Injury Impacts Long-Term Knee Function And Meniscus Remodeling In A Skeletally Immature Porcine Model

Danielle Howe; Jacob D. Thompson; Andre Bautista; Lauren V. Schnabel; Brian G. Pietrosimone; Jeffrey T. Spang; Matthew B. Fisher

8:40 AM

Paper No. 202

Evaluation Of ACL Reconstruction Using A Bone-acl-bone Complex Allograft In A Rabbit Model

Yulei Liu; Janice Havasy; Xiang-Hua Deng; Samuel Green; Daoyun Chen; Alexander Piacentini; Tania Pannellini; Sarah Caughey; Scott A. Rodeo

8:50 AM

Paper No. 203

Local And Systemic Comparison Of Senescent Profiles In Acute Knee Injury

Kaitie E. Whitney; Heidi Kloser; Robert Waltz; Charles Huard; Chelsea Bahney; Matthew Provencher; Jonathan Godin; Johnny Huard

Monday, February 7, 2022

8:00 AM - 9:00 AM

Room 24-25

Session 39 Shoulder and Elbow – Arthroplasty

Moderators: Jonathan Glenday and Alexander Greene

8:00 AM

Paper No. 204

Retroversion Affects Scapular Plane Abduction Kinematics After Reverse Shoulder Arthroplasty

Gillian Kane; Clarissa LeVasseur; Ajinkya Raj; Jonathan Hughes; Alexandra Gabrielli; Maria Munsch; William Anderst; Albert Lin

8:10 AM

Paper No. 205

Diagnosis Specific Thresholds For MCID, PASS And SCB After Anatomic And Reverse Total Shoulder Arthroplasty

Christopher Colasanti; Ryan Simovitch; Josie A. Elwell; Christopher Roche

8:20 AM

Paper No. 206

A Comparison Of The Fixation Stability Of Augmented Implant And Bone Graft-based Reverse Shoulder Arthroplasty Techniques To Treat Patients With Glenoid Erosion

Asees Kaur; Carson Studders; David Saliken; Joshua W. Giles

8:30 AM

Paper No. 207

The Impact Of Radiocapitellar Interposition Arthroplasty On Ulnohumeral Joint Biomechanics

Austin H. Carroll; Roman Ashmyan; Melissa Wright; Anand Murthi

8:40 AM

Paper No. 208

Evaluation Of Maximum Principal, Von Mises And Shear Stresses In Response To Varying Implant Lengths In Proximal Humeral Replacement After Tumour Excision: A Three-dimensional Finite Element Study

Pivatidevi Pareatumbbee; Andy Yew; Siaw Meng Chou; Joyce Suang Bee Koh; Suraya Zainul-Abidin; Tet Sen Howe; Mann Hong Tan

8:50 AM

Paper No. 209

Effect Of Long Head Of Biceps Transfer On Anterior Translation In A Shoulder With 15% Glenoid Bone Loss

Amirhossein Jahandar; Sridhar Pinnamaneni; Lawrence Gulotta; David Dines; Russell Warren; Joshua Dines; Samuel Taylor; Andreas Kontaxis

Monday, February 7, 2022

8:00 AM - 9:00 AM

Room 18-19

Session 40 Infection

Moderators: Fintan Moriarty and Lauren Priddy

8:00 AM

Paper No. 210

Synovial Lactate And Inflammation Accumulated In A Murine Model Of Septic Arthritis Caused By Methicillin-resistant Staphylococcus Aureus (MRSA) Infection

Francis Lee; hyuk-kwon kwon; Kristin Yu; Sean Cahill; Kareme Alder; Christopher M. Dussik; Jungho Back; Irvin Oh

8:10 AM

Paper No. 211

Immune Response To Persistent Staphylococcus Aureus Periprosthetic Joint Infection (PJI) In A Mouse Tibial Implant Model

Upneet Sokhi; Yunwei Xia; Branden Sosa; Kathleen Turajane; Sita Nirupama Nishtala; Tania Pannellini; Mathias Bostrom; Alberto V. Carli; Xu Yang; Lionel B. Ivashkiv

8:20 AM

Paper No. 212

Osteosynthesis-associated Infection In Osteoporotic Fractures Causes More Severe Infection And Further Delays Healing

Jie Li; Yik Lok Chung; Shui Yee Leung; Simon Chow; Margaret IP; Wing-Hoi Cheung; Ronald Man Yeung Wong

8:30 AM

Paper No. 213

Poly(methyl Methacrylate) Bone Cement As A Carrier For A Broad-spectrum Antimicrobial Peptide

Grahmm A. Funk; Kara A. Hageman; Amanda J. Varner; Kyle W. Boone; Nilan JB Kamathewatta; Candan C. Tamerler; Terence E. Mccliff

8:40 AM

Paper No. 214

PLG0206, An Engineered Antimicrobial Peptide, Has Potent Activity Against Biofilm And Results In Disease Free Survival In A Rabbit Model Of Staphylococcus Aureus Periprosthetic Joint Infection

Kimberly M. Brothers; Jonathan B. Mandell; Masashi Taguchi; Dana M. Parker; Peter G. Alexander; Despina Dobbins; David Huang B. Huang; Nicholas Pachuda; Kenneth L. Urish

8:50 AM

Paper No. 215

Effect Of Wound Irrigation Solutions On Uninfected Host Tissue In A Murine Model

Dexter Powel; Brendan Comer; Paula Dietz; Bin Wu; Therese Bou-Akl; Weiping Ren; David Markel

Monday, February 7, 2022

11:15 AM - 12:15 PM

Room Ballroom AB

**Session 41 Spotlight - Growth Factors for Cartilage Preservation, Repair and Engineering
(featuring Stephen Trippel)**

Moderators: Xue Ma and Brian Walczak

11:15 AM

Paper No. 216

**Hydrophobic And Not Electrostatic Interactions Are Dominant Cause Of Competitive Binding Of
Cationic Carriers In Synovial Fluid**

Armin Vedadghavami; Tengfei He; Chenzhen Zhang; Ambika Bajpayee

11:25 AM

Paper No. 217

A Bio-inspired Latent TGF- β Conjugated Hyaluronan Scaffold For Cartilage Tissue Engineering

Tianbai Wang; Andrew Martin; Zhonghao Dai; Yue Liu; Joanne E. Murphy-Ullrich; Mark W. Grinstaff;
Michael B. Albro

11:35 AM

Paper No. 218

A Synthetic Chronogenetic Gene Therapy Circuit For Programmed Temporal Drug Delivery For Arthritis

Lara Pferdehirt; Anna Damato; Kristin Lenz; Qing-Jun Meng; Erik D. Herzog; Farshid Guilak

11:45 AM

Spotlight Speaker

Growth Factor Interactions for Articular Cartilage Repair

Stephen Trippel

Monday, February 7, 2022

11:15 AM - 12:15 PM

Room Ballroom C

Session 42 Knee Osteoarthritis

Moderators: Corinne Henak and Kenton Kaufman

11:15 AM

Paper No. 219

Near-infrared Spectroscopy Can Differentiate Normal From Osteoarthritic Human Cartilage

Awuniji Linus; Petri Tanska; Ervin Nippolainen; Janne T A. Mäkelä; Juha Toyras; Rami K. Korhonen; Isaac O. Afara; Mika E. Mononen

11:25 AM

Paper No. 220

Effects Of Idiopathic Knee Valgus Malalignment On Gait Parameters Including Muscle Activation During Walking In Symptomatic & Asymptomatic Children

Lisa Hertrich; Sara Kimberly Byrnes; Harald Böhm; Felix Stief; Jana Holder; Frank Layher; Christof Hurschler; Eike Jakobowitz

11:35 AM

Paper No. 221

Associating Patellofemoral Joint Geometries With Osteoarthritis Using Deep Learning And MRI

Nikan Namiri; Alejandro Morales Martinez; Francesco Caliva; Valentina Pedoia; Drew Lansdown

11:45 AM

Paper No. 222

Is Persistent Loading Symmetry After ACL Reconstruction The Key To Maintaining Long Term Cartilage Health?

Jack R. Williams; Kelsey Neal; Abdulmajeed Alfayyadh; Jacob J. Capin; Ashutosh Khandha; Kurt Manal; Lynn Snyder-Mackler; Thomas S. Buchanan

11:55 AM

Paper No. 223

Raman Arthroscopic Needle Probe For Assessment Of Neocartilage Composition

Dev R. Mehrotra; Juncheng Zhang; Tianbai Wang; Erik Ersland; Mark W. Grinstaff; Brian D. Snyder; Mads S. Bergholt; Michael B. Albro

12:05 PM

Paper No. 224

Identifying Genetic Risk Factors For End-stage Osteoarthritis Following Anterior Cruciate Ligament Reconstruction: A Genome Wide Association Study (GWAS) Utilizing The UK Biobank

Paul Inclan; Robert Brophy; Nancy Saccone; Yinjiao Ma; Elizabeth Yanik

Monday, February 7, 2022

11:15 AM - 12:15 PM

Room Ballroom D

Session 43 Factors Affecting Tendon Healing

Moderators: Joohyun Lim and Dianne Little

11:15 AM

Paper No. 225

Hedgehog Signaling Directs Cell Differentiation And Improves Enthesis Healing By A Cell-autonomous Mechanism

Fei Fang; Stavros Thomopoulos

11:25 AM

Paper No. 226

Defining The Time-dependent Requirement For Scleraxis-lineage Cells During Tendon Healing

Antonion Korcari; Alayna Loiselle

11:35 AM

Paper No. 227

Pirfenidone Improves Adult Tendon Healing Via Complex Interactions With TGF β Signaling

Angela Montero; Deepak Kaji; Alexander Lachmann; Avi Ma'ayan; Alice Huang

11:45 AM

Paper No. 228

The Injury Response Of Aged Tendons After Induced Knockdown Of Decorin And Biglycan During The Proliferative And Remodeling Phases Of Healing

Christelle Darrieutort-Laffite; Ashley Fung; Stephanie Weiss; Courtney Nuss; David Birk; Lou Soslowsky

11:55 AM

Paper No. 229

Embryonic Tendon Exhibits Stage-specific Healing Responses To Injury In A Novel Explant Model

Phong K. Nguyen; Catherine K. Kuo

12:05 PM

Paper No. 230

Hedgehog Pathway Stimulation Improves Zonal Tendon-To-Bone Integration

Timur B. Kamalidinov; Keitaro Fujino; Xi Jiang; Sinaia Keith Lang; Mary Kate Evans; Miltiadis H. Zgonis; Andrew F. Kuntz; Nathaniel A. Dymant

Monday, February 7, 2022

11:15 AM - 12:15 PM

Room 24-25

Session 44 A Focus on Translational Research

Moderators: Eric Ledet and Jennifer Woodell-May

11:15 AM

Paper No. 231

Using Machine Learning To Predict Internal Rotation After Anatomic And Reverse Total Shoulder Arthroplasty

Vikas Kumar; Bradley Schoch; Christine Allen; Steven Overman; Ankur Teredesai; William Aibinder; Moby Parsons; Jonathan Watling; Jiawei Kevin Ko; Bruno Gobbato; Thomas Throckmorton; Howard Routman; Christopher Roche

11:25 AM

Paper No. 232

Digoxin Targets Low Density Lipoprotein Receptor-related Protein 4 And Protects Against Osteoarthritis

Kaidi Wang; Xiang Ding; Chuanju Liu

11:35 AM

Paper No. 233

A Randomized Trial Of Calcitriol To Prevent Bone Loss In The First Year Of Kidney Transplantation

Zexi Wang; Sanchita Agarwal; Thomas Nickolas; Xiangdong Edward Guo

11:45 AM

Paper No. 234

Novel Inflammation-preserving Treatment Promoting Lumbar Disc Herniation Resorption In Symptomatic Patients: A Prospective Multi-imaging And Clinical Outcomes Study

Hanne Albert; Arash Sayari; J. Nicholas Barajas; Garrett Harada; Mike Nolte; Dino Samartzis; Alexander Tkachev

11:55 AM

Paper No. 235

Gene Therapy For Osteoarthritis: Progress Report From A Phase I Clinical Trial (NCT02790723)

Jacob Sellon; Jay Smith; Rodolfo De la Vega; Stephen Wisniewski; Mary Jurisson; Scrabeck Tyson; Julie Block; Candee Mills; Michael Coenen; Gresin Hawse; Temilola Abdul; Annahita Keravala; Thomas Chalberg; Paul Robbins; Steven Ghivizzani; Christopher Evans

12:05 PM

Paper No. 236

Accuracy Of Novel Accelerometer-based Navigation For Total Hip Arthroplasty In Supine Position

Masahiro Hasegawa; Shine Tone; Yohei Naito; Sansui Matsunami; Hiroki Wakabayashi; Akihiro Sudo

Monday, February 7, 2022

11:15 AM - 12:15 PM

Room Room 18-19

Session 45 Skeletal Muscle - Mechanisms of Physiology and Pathology

Moderators: Mary Barbe and Woojin Han

11:15 AM

Paper No. 237

Leptin Drives The Regulation Of Muscle Mass And Strength By Adipose Tissue

Kelsey Collins; Chang Gui; Erica Ely; Kristin Lenz; Charles A. Harris; Farshid Guilak; Gretchen Meyer

11:25 AM

Paper No. 238

A Unique Estrogen-Sensitive Fibroblast Population Drives Muscle Fibrosis

Tanvi Potluri; Matthew J. Taylor; Jonah J. Stulberg; Hong Zhao; Serdar E. Bulun; Richard L. Lieber

11:35 AM

Paper No. 239

Treating Secondary Denervation By Targeting ErbB2 After Volumetric Muscle Loss Injury

Sarah M. Greising; Jacob R. Sorensen; Daniel B. Hoffman; Thomas J. Lillquist; Benjamin T. Corona

11:45 AM

Paper No. 240

Single Cell Transcriptomics Characterizes Human Fibroadipogenic Progenitor Cell Differentiation

Steven Garcia; Michael Davies; Hannah Chi; Hubert Kim; Thomas Vail; Xuhui Liu; Brian Feeley

11:55 AM

Paper No. 241

Muscle Stem Cell Abundance, Proliferation In Contractured And Non-contractured Muscles In Children With Cerebral Palsy

Ryan Kahn; Timothy Krater; Jill Larson; Neeraj Patel; Vineeta Swaroop; Sudarshan Dayanidhi

12:05 PM

Paper No. 242

Myofiber Switching And Fibrosis Of The Articularis Genu Relative To Osteoarthritic Knee Disuse

Jose A. Cruz Ayala; Mary C. Gatterer; Luis Marrero; Vinod Dasa

Monday, February 7, 2022

3:15 PM - 4:15 PM

Room Ballroom AB

Session 46 Spotlight - Bone Fracture Healing (featuring Chelsea Bahney)

Moderators: Melissa Kacena and Joseph Roberts

3:15 PM

Paper No. 243

Critical Role Of IGF1/CXCR4 Signaling In Regulating HIF1 α And HIF2 α Expression In Fracture Repair

Alessandra Esposito; Brittany Wilson; Michael Kluppel; Sai Rama Krishna Meka; Vidyani Suryadevara; Pranav K. Mishra; Katrien Corbeels; Anna Spagnoli

3:25 PM

Paper No. 244

Delayed Treatment Of Il-4 Overexpressing MSCs During The Chronic Inflammatory Phase Enhances Bone Healing In Long Bone Critical-size Defects

Ning Zhang; Masaya Ueno; Danial Barati; Huaishuang Shen; Elijah Ejun Huang; Hirohito Hirata; Qi Gao; Xueping Li; Masanori Tsubosaka; Junichi Kushioka; Zhenyu Yao; Fan Yang; Stuart B. Goodman

3:35 PM

Paper No. 245

Molecular Signatures Distinguish Callus Senescent Cells From Inflammatory Cells

Jiatong Liu; Xi Lin; andrew Mcdavid; Hengwei Zhang; Lianping Xing; Brendan Boyce

3:45 PM

Spotlight Speaker

Transforming Fracture Healing: Engineering Accelerated Endochondral Repair

Chelsea Bahney

Monday, February 7, 2022

3:15 PM - 4:15 PM

Room Ballroom C

Session 47 Cartilage and Synovium - Joint Tissues

Moderators: Kelsey Collins and Matthew Stewart

3:15 PM

Paper No. 246

Regulation Of M1/M2 Macrophage Balance In The Synovium And Its Relationship To Synovitis In A Murine Proteoglycan-4 Gene-trap Model

Marwa Qadri; Gregory Jay; Ling Zhang; Jennifer Totonchy; Khaled Elsaid

3:25 PM

Paper No. 247

Single-cell RNA Sequencing Of The Synovium Reveals Distinct Joint Phenotypes In Aging-, Injury-, Or Obesity-induced Models Of Osteoarthritis

Natalia S. Harasymowicz; Neda Rashidi; Kristin Lenz; Gwendalyn Krekeler; Ruhang Tang; Kathleen Dobbs; Farshid Guilak

3:35 PM

Paper No. 248

Mechanosensing As A Therapeutic Target In Synovial Fibrosis To Restore Lubricating Function

Edward Bonnevie; Carla Scanzello; Robert Mauck

3:45 PM

Paper No. 249

Generation Of Innervated Tissue Chip To Study Joint Pain

Meagan Makarczyk; Jamie Moy; Zhong (Alan) Li; Michael Gold; Hang Lin

3:55 PM

Paper No. 250

G Protein-coupled Inwardly-rectifying Potassium Channels (GIRKs) Regulate Cartilage Homeostasis

Samantha R. Weaver; Earnest L. Taylor; Jennifer J. Westendorf

4:05 PM

Paper No. 251

Synovial Single Cell Profiling Reveals A Functional Fibroblast Hierarchy In Post-traumatic Osteoarthritis

Alexander Knights; Olivia Ellis; Rhea Bhakhri; Easton Farrell; Lucas Junginger; Kurt Hankenson; Chia-Lung Wu; Tristan Maerz

Monday, February 7, 2022

3:15 PM - 4:15 PM

Room Ballroom D

Session 48 Hip and Knee Arthroplasty - Clinical Outcomes

Moderators: Joshua Roth and Sophia Sangiorgio

3:15 PM

Paper No. 252

Accurate Recreation Of Native Tibial Medial Centre Of Rotation Following TKA Surgery Leads To Improved Patient Outcomes

Ishaan Jagota; Jonathan Baré; Andrew Shimmin; Joshua Twiggs

3:25 PM

Paper No. 253

Is Intraoperative Dexamethasone Associate With Increased Rates Of Periprosthetic Joint Infections?

Jennifer Wang; Amit Piple; Glenda Marshall; Emily Mills; Jay Lieberman; Alexander Christ; Nathanael Heckmann

3:35 PM

Paper No. 254

Diffusion-Weighted MRI Of Total Hip Arthroplasty For Classification Of Synovial Reactions

Madeleine A. Gao; Ek T. Tan; John P. Neri; Alissa J. Burge; Hollis G. Potter; Kevin M. Koch; Matthew F. Koff

3:45 PM

Paper No. 255

Intra-operative X-ray Improves Component Positioning During Posterior Approach Total Hip Arthroplasty In Experienced Arthroplasty Surgeons

Evan D. Nigh; Guy D. Paiement; Brad L. Penenberg; Andrew Spitzer; Kevin Rezzadeh; Caleb Durst; Sean S. Rajaei

3:55 PM

Paper No. 256

Postoperative Satisfaction And Outcomes For Telehealth Patients Versus Non-telehealth Patients

Johanna Mackenzie; Zachary Eisenbies; George M. Babikian; Adam J. Rana; Callahan Sturgeon

4:05 PM

Paper No. 257

A Retrospective Quality Improvement Study Comparing As-needed And Tapering Protocols For Total Opioid Administration After Total Knee Arthroplasty And Total Hip Arthroplasty

Vasil V. Kukushliev; Christopher M. Kurylo; Stephen D. Ortmann; Katherine A. Sherman; Maxwell Hershey; Robert A. Scheidt; Karl B. Scheidt

Monday, February 7, 2022

3:15 PM - 4:15 PM

Room 24-25

Session 49 Foot and Ankle - Imaging and Modeling

Moderators: Daniel Latt and Robin Queen

3:15 PM

Paper No. 258

Joint Coverage Analysis Of The Subtalar And Talonavicular Joints In Progressive Collapsing Foot Deformity

Kassidy Knutson; Andrew C. Peterson; Nicola Krähenbühl; Rich J. Lisonbee; Alexej Barg; Charles L. Saltzman; Amy L. Lenz

3:25 PM

Paper No. 259

Three-dimensional Coverage Maps In The Assessment Of Chopart Subluxation In Progressive Collapsing Foot Deformity: A Weight-bearing Ct Case-control Study

Kevin Dibbern; Andrew Behrens; Matthieu Lalevee; Kepler Carvalho; Nacime Salomao Barbachan Mansur; Cesar de Cesar Netto

3:35 PM

Paper No. 260

Manual And Visual Clinical Assessment Of Foot Type And Posture Correlate Weakly With Radiographic Assessment

Steve Bayer; Clarissa LeVasseur; Maria Munsch; Stephen Chen; Christopher Murawski; Conor Murphy; Dukens Labaze; Alexandra Gabrielli; Gillian Kane; William Anderst; MaCalus Hogan

3:45 PM

Paper No. 261

Implications Of Distal Fibula Anatomy For Ankle Fracture Fixation: An Imaging Study

Philip Noble; Kamen Kutzarov; Ethan W. Sij; Sabir K. Ismaily; Michael P. Ebaugh; Michael C. Greaser

3:55 PM

Paper No. 262

The Impact Of Posterior Malleolar Fixation On Syndesmotic Stability

Ingrid K. Stake; Anna Bryniarski; Alex W. Brady; Grant J. Dornan; Brad Fossum; Thomas Haytmanek Jr.; Thomas Clanton

4:05 PM

Paper No. 263

Malalignment Of Total Ankle Replacement Increases Contact Pressure And Shear Stress On The Bone-implant Interface.

Sanne van Hoogstraten; Joris P. Hermus; Arjan Loenen; Jacobus J. Arts; Bert Van Rietbergen

Monday, February 7, 2022

3:15 PM - 4:15 PM

Room 18-19

Session 50 Intervertebral Disc - Treatment and Therapeutics

Moderators: Dmitriy Sheyn and Simon Tang

3:15 PM

Paper No. 264

Evaluation Of Synergistic Effect Of Senolytic Combination Treatment For Intervertebral Disc Degeneration

Matthew Mannarino; Oliver Wu Martinez; Seunghwan Lee; Hosni Cherif; Magali Millecamps; Jean A. Ouellet; Laura Stone; Lisbet Haglund

3:25 PM

Paper No. 265

Phlppinhibition Mediates Anti-inflammatory And Anti-catabolic Effects In The Nucleus Pulposus Of Degenerated Ivds

Changli Zhang; Katherine Joseph; Shayan Parvini; Svenja Illien-Junger

3:35 PM

Paper No. 266

Raloxifene Stimulates Estrogen Signaling To Protect Against Age- And Sex-related Intervertebral Disc Degeneration In Mice

Neharika Bhadouria; Remy Walk; Omar El Jordi; Alycia Berman; Simon Tang; David McKinzie; Joseph Wallace; Nilsson Holguin

3:45 PM

Paper No. 267

Vertebral Transplantation Of Mesenchymal Stromal Cells For Intervertebral Disc Repair Outperforms Intradiscal Injection In A Rat Tail Disc Degeneration Model: A Preliminary Study

Jordy Schol; Takayuki Warita; Kosuke Sako; Sibylle Grad; Mauro Alini; Daisuke Sakai; Masahiko Watanabe

3:55 PM

Paper No. 268

FX201, A Novel Gene Therapy Treatment Approach For Low Back Pain Resulting From Intervertebral Disc Degeneration.

Joseph Snuggs; Rebecca K. Senter; Joshua P. Whitt; Christine L. Le Maitre

4:05 PM

Paper No. 269

Validation Of Fluidically Isolated In Vitro Platform For Assessing Nociceptor Phenotype

Sydney M. Caparaso; Adan R. Redwine; Fei San Lee; Rebecca A. Wachs

Monday, February 7, 2022

4:30 PM - 5:30 PM

Room Ballroom AB

Session 51 Spotlight - Racial, Ethnic, and Income-based Disparities in the Use of Joint Replacements (featuring Caroline Thirukumaran)

Moderators: Sally LiArno and Giovanni Solitro

4:30 PM

Paper No. 270

Higher Pre-operative Kellgren & Lawrence Grade Is Associated With Improved Patient Reported Outcomes Following Primary Tka

Yoav Zvi; Shoran Tamura; Jonathan Rubin; Zeynep Seref-Ferlengez; Eli Kamara

4:40 PM

Paper No. 271

Combination Of Preoperative Proms Phenotype (Pain, Function And Mental Health) Predicts Outcome After Total Knee Arthroplasty

Nicolas Piuizzi; Melissa Orr; Alison K. Klika; Robert M. Molloy; Carlos Higuera-Rueda; Wael K. Barsoum

4:50 PM

Paper No. 272

Is Tranexamic Acid Associated With Increased Rates Of Prothrombotic Complications Following Total Hip And Knee Arthroplasty: A Population-wide Analysis

Amit Piple; Taseen Haque; Cory Mayfield; Gabriel Bouz; Lucas Mayer; Daniel Oakes; Jay Lieberman; Alexander Christ; Nathanael Heckmann

5:00 PM

Spotlight Speaker

Two Decades since the Unequal Treatment report: The State of Racial/Ethnic and Income-based Disparities in the Use of Joint Replacements

Caroline Thirukumaran

Monday, February 7, 2022

4:30 PM - 5:30 PM

Room Ballroom C

Session 52 Cartilage and Synovium - Mitochondria and Metabolism

Moderators: Brian Johnstone and Hang Lin

4:30 PM

Paper No. 273

Terminal Uridylyltransferase 7 Regulates Mitochondrial Dynamics And Oxidative Stress By Controlling The Expression Of Dynamin Related Protein 1

Mohammad Y. Ansari; Kimberly Novak; Tariq M. Haqqi

4:40 PM

Paper No. 274

Mesenchymal Stromal Cell- And Plasma-derived Extracellular Vesicles Contain Mitochondria

Brenna R. Pugliese; Matthew A. Thomas; Megan J. Fahey; Mark A. Antonyak; Michelle L. Delco

4:50 PM

Paper No. 275

Carbonic Anhydrase 2 Is Required For Maintaining Chondrocyte Metabolic Homeostasis

Mingming Yan; Lei Cai; Xin Duan; Regis J. O'Keefe; Muhammad Farooq Rai

5:00 PM

Paper No. 276

Metabolic Reprogramming In Chondrocytes To Promote Mitochondrial Respiration Reduces Downstream Features Of Osteoarthritis

Yoshifumi Ohashi; Nobunori Takahashi; Kenya Terabe; Saho Tsuchiya; Toshihisa Kojima; Warren Knudson; Cheryl Knudson; Shiro Imagama

5:10 PM

Paper No. 277

Characterization Of Metabolomic Profiles Of Encapsulated Chondrocytes Exposed To Short-term Simulated Microgravity: A Pilot Study

Alyssa K. Hahn; Eden Houske; Annika Bergstrom; Matthew Glimm; Ethan Viles; Gwendolyn Cooper; Priyanka Brahmachary; Hope Welhaven; Ron June

5:20 PM

Paper No. 278

Development And Characterization Of Osteoarthritic Subchondral Bone Metabolic Clusters

Umer Mallick; Aaron M. Stoker; Emily V. Leary; Ashwin Garlapaty; Connie Luk; Hayley Ockerhausen; Matthew Gao; Bree Baker; Chantelle C. Bozynski; Jinpu Li; James A. Keeney; James L. Cook

Monday, February 7, 2022

4:30 PM - 5:30 PM

Room Ballroom D

Session 53 Biomaterials - Bone Repair and Regeneration

Moderators: Fiona Freeman and Stuart Goodman

4:30 PM

Paper No. 279

Submicron Needle-shaped Surface Topography Instructs Osteoinductive Bone Formation Via Macrophage Polarization And Osteoclastogenesis

Mingzheng Li; Dan Li; Yucan Jiang; Yeming Li; Hongmei Zhang; Ping Ji; Joost de Bruijn; Huipin Yuan

4:40 PM

Paper No. 280

Newly Formulated Calcium Phosphate And Collagen Composite Demonstrates In Vivo Bioactivity And A Balance Of Bone Healing And Ceramic Resorption In A Critical-sized Ovine Femoral Corticocancellous Defect Model.

Jeffrey M. Toth; Timothy Guthrie; Tyler Fairwood; Gretchen S. Selders; Ian R. Dunkley; Jeffrey M. Badura

4:50 PM

Paper No. 281

Potential For Local Delivery Of Resveratrol Via A Multifunctional Nanofiber Scaffold To Mitigate The Anti-osteogenic Effects Of Cigarette Toxins Via The Aryl Hydrocarbon Receptor Pathway

Alexander Linton; Nicholas Lanzetta; Andrew Furman; Danielle S. Chun; Mark Plantz; Mark McClendon; Chawon Yun; Jonathan Yamaguchi; Sophia Jeong; Amanda Dombrowski; Joseph Weiner; Michael Schallmo; Ralph Cook; Stuart Stock; Samuel Stupp; Wellington Hsu; Erin Hsu

5:00 PM

Paper No. 282

Collagen-nanohydroxyapatite Scaffold-mediated Inhibition Of MicroRNA-182-5p And MicroRNA-200b-3p For The Healing Of Large Volume Bone Defects

Lara S. Costard; Joanna Sadowska; Rachael N. Power; Gang Cheng; Caroline M. Curtin; Fergal J. O'Brien

5:10 PM

Paper No. 283

Engineering Pre-vascularized Bone Tissue From Human Mesenchymal Stem Cells Through Simulating Endochondral Ossification - In Vitro And In Vivo Studies

Xiurui Zhang; Zixuan Lin; Hang Lin

5:20 PM

Paper No. 284

Glucose Enhances Transplanted Mesenchymal Stromal Cells Survival And Functions Pertinent To Angiogenesis

Guotian Luo; Cyprien Denoed; Nathanael Larochette; Pauline Wosinski; Esther Potier; Hervé Petite

Monday, February 7, 2022

4:25 PM - 5:43 PM

Room 24-25

Session 54 Late Breaking Podium

Moderators: Louis Gerstenfeld and Floor Lambers

4:25 PM

Paper No. 2088

Lamellae-like Organisation Of Collagen Is Deposited By Human Osteogenic MSCs On Aligned Nano-fibres

Alice J. Hann; Gifty Tetteh; Nicola H. Green; Frederik Claeysens; Gwendolen C. Reilly

4:31 PM

Paper No. 2089

A Murine Model Of Combined Type 1 Diabetes And Chronic Kidney Disease Exhibits A Unique Biochemical And Skeletal Phenotype Compared To Either Individual Disease

John Damrath; Corinne Metzger; Matthew Allen; Joseph Wallace

4:37 PM

Paper No. 2090

Wnt1 Is A Promising Target To Boost Bone Formation During Fracture Healing

Melanie Haffner-Luntzer; Deniz Ragipoglu; Mubashir Ahmad; Lena Steppe; Astrid Liedert; Timur Yorgan; Thorsten Schinke; Anita Ignatius

4:43 PM

Paper No. 2091

Bioenergetic Programs Of Cancellous And Cortical Bone Are Distinct And Differ With Age And Mechanical Loading

Carolyn Chlebek; Tyler J. McNeill; Muyin Huang; Marjolein C. H. van der Meulen

4:49 PM

Paper No. 2092

Femoral Neck Bone Microarchitecture Is Altered In Older Adults With Long-duration Type 1 Diabetes

Shannon R. Emerzian; Fjola Johannesdottir; Daniel J. Brooks; Michael Bruce; I-Hsien Wu; John Gauthier; Regina Tham; Marc Gregory Yu; Hetal S. Shah; George L. King; Elaine W. Yu; Mary L. Boussein

4:55 PM

Paper No. 2093

Spatial Transcriptomics Reveal Unique Molecular Fingerprints Of Chondrogenesis During Embryonic Limb Development

Gulzada Kulzhanova; Victoria Hansen; Helen Shammass; John M. Reuter; Chia-Lung Wu

5:01 PM

Paper No. 2094

Running Mechanics 12 Months After An ACL Reconstruction More Related To 6 Month Quadriceps Rate Of Torque Development Than Quadriceps Peak Torque

Brian Noehren; Kelsey Reeves; Meredith Owen; Caitlin Conley; Nick Heebner; Darren Johnson; Christian Lattermann; Cale Jacobs; Austin Stone

5:07 PM

Paper No. 2095

Effect Of Denosumab On Osteolytic Lesion Transcriptome And Proteome Activity After Total Hip Arthroplasty: A Role For Osteoclast Fission Into Osteomorphs In Man?

Conor Gormley; Mark J. Dunning; Mandy J. Peffers; Christine von Toerne; Stefanie Hauck; J Mark Wilkinson

5:13 PM

Paper No. 2096

Tibial Pilon Fracture Severity Correlates With 3D Joint Space Width Narrowing From Weight Bearing CT

Hannah Smith; Michael Willey; Julie Agel; Conor Kleweno; Zachary Olsen; Justin Haller; J. Lawrence Marsh; Don D. Anderson

5:19 PM

Paper No. 2097

Specimen-Specific Finite Element Hip Capsule Representation

Ahilan Anantha Krishnan; Luke Storer; Casey Myers; Paul Rullkoetter; Chadd Clary

5:25 PM

Paper No. 2098

The Influence Of Running On Femoroacetabular Joint Mechanics As Quantified By Decreases In Bone-to-Bone Distance

Lauren N. Heckelman; Avery L. Kratzer; Charles E. Spritzer; Brian J. Soher; Brian D. Lewis; Louis E. DeFrate

5:31 PM

Paper No. 2099

Differential Transcript Expression In Compensatory Limbs Following Destabilization Of The Medial Meniscus Or Sham Surgery In Male And Female Mice

Ariel Timkovich; Lindsey Burton; Kelly S. Santangelo

5:37 PM

Paper No. 2100

Four-dimensional Computed Tomography Scanning Allows For The Visualization And Measurement Of Glenohumeral Joint Arthrokinematics

Baraa Daher; Emily Lalone; George S. Athwal

Monday, February 7, 2022

4:30 PM - 5:30 PM

Room 18-19

Session 55 Knee Imaging and Reconstruction

Moderators: Brad Nelson and Stephen Schlecht

4:30 PM

Paper No. 285

Increased Vascularity Might Peak At 3 To 6 Months Postoperatively On The Reconstructed Anterior Cruciate Ligament Assessed With Superb Microvascular Imaging (SMI)

Satoshi Takeuchi; Benjamin B. Rothrauff; Ryo Kanto; Kevin J. Byrne; Nicholas P. Drain; Freddie H. Fu; Kentaro Onishi

4:40 PM

Paper No. 286

Elevated Patellofemoral And Tibiofemoral Cartilage T1ρ Relaxation Times Following An Initial Patellar Dislocation

John J. Elias; Mei Li; Mingrui Yang; Richard Lartey; John Murray; Lutul D. Farrow; Carl Winalski; Xiaojuan Li

4:50 PM

Paper No. 287

Greater Loading Of ACLR Limbs Relative To The Contralateral Limb Are Associated With Interlimb MRI T2 Differences 2 Years Following ACL Reconstruction

Ashley A. Williams; Gordhan B. Mahtani; Sachi Bansal; Constance R. Chu

5:00 PM

Paper No. 288

Acute Prolonged Vibration Of The Hamstrings Reduces Tibiofemoral Compressive Forces Following Anterior Cruciate Ligament Reconstruction

Timothy Lowe; Mohsen Alighanbari; Lisa Griffin; Neil Dong

5:10 PM

Paper No. 289

Synovial Fluid Interleukin-6, But Not Type 2 Collagen Breakdown, Positively Correlates With Pain After Anterior Cruciate Ligament Injury And Reconstruction

Breanna Sullivan; Austin Stone; Caitlin Conley; Emily Hunt; Christian Lattermann; Cale Jacobs

5:20 PM

Paper No. 290

Unloading The ACL After Increasing The Posterior Tibial Slope May Predispose To ACL Fiber Degeneration And Injury

Philipp W. Winkler; Gian Andrea Lucidi; Calvin K. Chan; Nyaluma N. Wagala; Sene Polamalu; Volker Musahl; Richard E. Debski

Tuesday, February 8, 2022

8:00 AM - 9:00 AM

Room Ballroom AB

Session 56 Bone Treatment and Therapeutics

Moderators: Katherine Hixon and Ling Qin

8:00 AM

Paper No. 291

Risks Of Skeletal Complications Increase After One Year Administration Of High Dose Bisphosphonate In Multiple Myeloma Patients

Ji Hoon Bahk; Hyung Chul Park; Woo-Lam Jo; Soon-Yong Kwon; Youngwook Lim

8:10 AM

Paper No. 292

Association Of Femoral Neck Strength With Bone Mineral Density And Geometry Changes Following Exercise

Dermot O'Rourke; Belinda B. Beck; Amy T. Harding; Steven L. Watson; Peter Pivonka; Saulo Martelli

8:20 AM

Paper No. 293

Inhibition Of HIF-2 α Signaling In LepR-expressing Skeletal Progenitors Prevents Radiation-induced Bone Loss: Novel Therapeutic Insights For Bone Radioprotection

Wendi Guo; Kassandra Spiller; Carolina Garcia; Tara Fujimoto; Dena Johnson; Abigail Delahoussaye; Cullen Taniguchi; Colleen Wu

8:30 AM

Paper No. 294

Targeting Notch2 Signalling To Overcome Methotrexate Chemotherapy-induced Bone And Bone Vasculature Damage In Rats

Yaser Peymanfar; Yu-Wen Su; Cory Xian

8:40 AM

Paper No. 295

Conditional Deletion Of CaMKK2 From Osteocytes Enhances Secretion Of Calpastatin To Modulate Osteoclasts And Regulate Bone Remodeling In A Sex-dependent Manner

Justin N. Williams; Mavis Irwin; Noyonika Mukherjee; Anuradha V. Kambrath; Nicholas Clough; Adam Warrick; Mizuho Kittaka; Yasuyoshi Ueki; Teresita Bellido; Emma Doud; Amber Mosley; Lilian Plotkin; William R. Thompson; Lynda Bonewald; Uma Sankar

8:50 AM

Paper No. 296

Local Administration Of Bone Morphogenetic Protein 2 Using A Hydrogel Carrier For A Homogeneous Repair Of Legg Calve Perthes Disease

Chi Ma; Yinshi Ren; Min Sung Park; Felipe Monte; Graham Andre; David Edwards; Olumide Aruwajoye; Harry Kim

Tuesday, February 8, 2022

8:00 AM - 9:00 AM

Room Ballroom C

Session 57 Cartilage and Synovium Mechanics and Mechanobiology

Moderators: Michael Albro and Jarred Kaiser

8:00 AM

Paper No. 297

Molecular Engineering Of Chondrocyte Mechanotransduction Via Biomimetic Proteoglycans

Elizabeth R. Kahle; Biao Han; Annie Porter; Prashant Chandrasekaran; Evan Phillips; Katsiaryna Prudnikova; X. Lucas Lu; Michele Marcolongo; Lin Han

8:10 AM

Paper No. 298

SIRT1 Deactivation Is Involved In Cartilage Injury Response To Traumatic Overload

Sonali Karnik; Hessam Noori-Dokht; Amin Joukar; Stephen Trippel; Uma Sankar; Diane Wagner

8:20 AM

Paper No. 299

Loss Of Thrombospondin-2 Alters Synovial Inflammation, Cartilage Integrity, And Bone Composition

Lucas Junginger; Alexander Knights; Lindsey Lammlin; Sunghun Cheong; Sam Goldman; Andrea Alford; Kurt Hankenson; Tristan Maerz

8:30 AM

Paper No. 300

Reduction Of Pro-inflammatory Cytokine Activity Results In Proteoglycan Content Recovery In A Computational Model Of Injured Articular Cartilage Implementing Cytokines And Reactive Oxygen Species

Joonas P. Kosonen; Atte S. Eskelinen; Gustavo A. Orozco; Don D. Anderson; Alan J. Grodzinsky; Petri Tanska; Rami K. Korhonen

8:40 AM

Paper No. 301

Surgical Reattachment Of The Anterior Horn Slows OA Progression In A Large Animal Injury Model

Brendan Stoeckl; Kyle Meadows; Edward Bonnevie; John Peloquin; Adriana Barba; Klaus Hopster; Sonia Bansal; David Steinberg; Thomas Schaer; Miltiadis Zgonis; Dawn Elliott; Robert Mauck

8:50 AM

Paper No. 302

The Detrimental Effect Of Modestly Elevated Contact Pressures On Tribological Rehydration In Articular Cartilage

Shamimur Rahman Akanda; Meghan Kupratis; David L. Burris; Christopher Price

Tuesday, February 8, 2022

8:00 AM - 9:00 AM

Room Ballroom D

Session 58 Shoulder and Elbow - Biology and Biologics

Moderators: Hugo Giambini and David Spenciner

8:00 AM

Paper No. 303

Transcriptional Time Course After Rotator Cuff Repair In Rabbit

Laura S. Vasquez-Bolanos; Michael Gibbons; Severin Ruoss; Isabella T. Wu; Mario A. Vargas-Vila; Mary C. Esparza; Donald C. Fithian; John G. Lane; Anhuman Singh; Chanond A. Nasamran; Kathleen M. Fisch; Samuel R. Ward

8:10 AM

Paper No. 304

Effect Of Advanced Glycation End-products (AGEs) On Rotator Cuff Fragility Based On Stamp Classification.

Issei Shinohara; Yutaka Mifune; Atsuyuki Inui; Hanako Nishimoto; Shintaro Mukohara; Tomoya Yoshikawa; Tatsuo Kato; Takahiro Furukawa; Ryosuke Kuroda

8:20 AM

Paper No. 305

Nanofiber Scaffold For Integrative Rotator Cuff Repair In An Ovine Model

Jessica Z. Liu; Jon-Michael Caldwell; Katie Reuther; Hannah R. Childs; Romare Antrobus; Philip Brudnicki; James Johnson; Benjamin Gadowski; Holly Stewart; Stephen Doty; Jeremiah Easley; William N. Levine; Helen Lu

8:30 AM

Paper No. 306

Do Pre-operative Corticosteroid Injections Increase The Rate Of Re-ruptures And Infections In Primary Arthroscopic Rotator Cuff Repair?

Kevin Plancher; Bhavana Gunda; Grace Plassche; Grace Plassche; Karen Briggs; Stephanie Petterson

8:40 AM

Paper No. 307

T Cells/IL-17a Axis Drives Inflammation And Fibrosis In Frozen Shoulder

Moeed Akbar; Lindsay Crowe; Michael McLean; Lucy MacDonald; Kristyn Carter; Iain McInnes; Neal Millar

8:50 AM

Paper No. 308

Frozen Shoulder Patient Tissues Show Enrichment For CD48+IL1 α + Macrophages

Hamez Gacaferi; Michael Ng; Andrew J. Carr; Stephanie G. Dakin

Tuesday, February 8, 2022

8:00 AM - 9:00 AM

Room 24-25

Session 59 Hand and Wrist

Moderators: Roger Cornwall and Zong-Ming Li

8:00 AM

Paper No. 309

Decreased CMC Arthrokinematics And Articular Surface Overlap With Thumb Osteoarthritis Progression

Trey Crisco; Amy Morton; Douglas Moore; Arnold-Peter Weiss; Amy Ladd

8:10 AM

Paper No. 310

Thumb Carpometacarpal Joint Laxity In Pre- And Post-menopausal Women

Kendra Coleman; Vivian Li; Hui Zhang; C. Kent Kwoh; Zong-Ming Li

8:20 AM

Paper No. 311

Deep Learning Estimation Of The Median Nerve Volume Using Ultrasound Imaging In The Cadaver Extremity

Tomoyuki Kuroiwa; Jaidip Jagtap; Julia Starlinger; Zeynettin Akkus; Bradley Erickson; Peter Amadio

8:30 AM

Paper No. 312

Tendon Force And Range Of Motion Changes After In Vitro Total Wrist Replacement

Gaurav G. Mookerjee; Frederick W. Werner; Walter H. Short

8:40 AM

Paper No. 313

Modulation Of Nerve Regeneration After Median Nerve Transection And Repair: Weekly Versus Biweekly Electrical Stimulation

Lindsay R. Kosinski; Christopher J. Lama; Elliott Rebello; Jonathan Ge; Neill Y. Li; Sami H. Tuffaha; Julia A. Katarincic; Joseph A. Gil

8:50 AM

Paper No. 314

Analysis Of Disease-associated SNPs And Inflammatory Mechanisms In Dupuytren's Contracture

Hiroaki Kida; Yuichiro Matsui; Ikuko Takahashi; Masaaki Murakami; Norimasa Iwasaki

Tuesday, February 8, 2022

8:00 AM - 9:00 AM

Room 18-19

Session 60 Hip and Knee Arthroplasty - Computational and Biomechanical Analysis

Moderators: Steven Mell and Markus Wimmer

8:00 AM

Paper No. 315

Design Comparison Of Implants For Revision Total Knee Arthroplasty: A Finite Element Analysis

Simone Stocco; Navid Soltanihafshejani; Dennis Janssen

8:10 AM

Paper No. 316

Impact Of Periprosthetic Femoral Fracture Fixation Plating On Local Stiffness, Load Transfer And Bone Strains

Xiang Chen; Thor E. Andreassen; Casey Myers; Chadd Clary; Dana Coombs; Ryan DeWall; Bryan Fritz; Daniel Bracey; Vishal Hedge; Paul Rullkoetter

8:20 AM

Paper No. 317

Evaluating TKA Implant And Soft-tissue Interaction Using Multi-patient Forward Dynamics Modeling Approach

Amitkumar M. Mane; Mick J. Rock; Luke J. Aram; Mark A. Heldreth; Richard D. Komistek; Stephen E. White

8:30 AM

Paper No. 318

Biomechanical Comparison Of Posterior Stabilized And Midlevel Constrained Total Knee Arthroplasty

Erin Berube; Cynthia Kahlenberg; William Xiang; Joseph Manzi; Brian Chalmers; David Mayman; Geoffrey Westrich; Michael Cross; Timothy Wright; Peter Sculco; Carl Imhauser

8:40 AM

Paper No. 319

Internal Femoral Rotation & Anterior Pelvic Tilt In The Flexed Seated Position: Co-incidence And Functional Consequences

Max Hardwick-Morris; Kunaal Kacker; Joshua Twiggs

8:50 AM

Paper No. 320

Which Femoral Neck For A Dual Mobility Cup? A Biomechanical Evaluation

Julien Wegrzyn; Jason Longaray; Rafael Baez; Lizeth Herrera

Tuesday, February 8, 2022

12:15 PM - 1:15 PM

Room Ballroom AB

Session 61 Biomaterials - Implant Materials

Moderators: Jeremy Gilbert and Robin Pourzal

12:15 PM

Paper No. 321

Never-irradiated Polyethylene: Is In Vivo Oxidation A Concern?

Barbara H. Currier; John H. Currier; Kori C. Jevsevar; Douglas Van Citters

12:25 PM

Paper No. 322

Corrosion Of CoCrMo In Simulated Modular Taper Crevice Solutions Containing Co (II) Ions

Hwaran Lee; Jeremy L. Gilbert

12:35 PM

Paper No. 323

Quantitative Proteomic Analysis Of CoCrMo Wear Nanoparticles Induced Macrophage Population (M_{CA})

Vaishnavi Beena Valsan; Divya Bijukumar; Mathew T Mathew; Guoxing Zheng; Ryan D Bomgarden; Mark Barba; Deborah J. Hall; Robin Pourzal; Samuel Morgan Pope

12:45 PM

Paper No. 324

In Vitro Effects Of Macrophages On CoCr Alloy With And Without Electrocautery Damage

Kirsten C. Miller; Matthew Holloway; Brian Morrow; Richard A. Smith; William M. Mihalko

12:55 PM

Paper No. 325

A Novel Open Reduction Internal Fixation (ORIF) Model To Assess Osseointegration In Diabetic Lewis Rats

Alexandra Arteaga; Claudia Biguetti; Javier La Fontaine; Danieli Rodrigues

1:05 PM

Paper No. 326

Completely Implanted, Unjointed Foot-ankle Endoprosthetic Limb In A Rabbit Model

Dustin L. Crouch; Patrick T. Hall; Caleb Stubbs; Caroline Billings; Bryce Burton; Cheryl B. Greenacre; Stacy M. Stephenson; David E. Anderson

Tuesday, February 8, 2022

12:15 PM - 1:15 PM

Room Ballroom C

Session 62 Imaging - Translational and Clinical Imaging

Moderators: Marianne Black and Ashley Williams

12:15 PM

Paper No. 327

Surgical Outcome Prediction Using A Four-dimensional Planning Simulation System With Finite Element Analysis Incorporating Pre-bent Rods In Adolescent Idiopathic Scoliosis

Tachi Hiroyuki; Koji Kato; Yuichihiro Abe; Terufumi Kokabu; Katsuhisa Yamada; Norimasa Iwasaki; Hideki Sudo

12:25 PM

Paper No. 328

Large-scale Analysis Of Meniscus Morphology As Risk Factor To Incidence Of Osteoarthritis

Kenneth T. Gao; Emily Xie; Francesco Caliva; Claudia Iriondo; Richard Souza; Sharmila Majumdar; Valentina Pedoia

12:35 PM

Paper No. 329

Evaluation Of Juvenile Osteochondritis Dissecans (JOCD) Of The Knee With Diffusion MRI At 3T - Comparison Between Different Disease Stages And Treatment Plans

Stefan Zbyn; Abdul Wahed Kajabi; Cyrus M. Nourae; Kai D. Ludwig; Casey P. Johnson; Marc A. Tompkins; Bradley J. Nelson; Steen Moeller; Shelly Murette; Gregory J. Metzger; Cathy S. Carlson; Jutta M. Ellermann

12:45 PM

Paper No. 330

Local Relative Surface Orientation Angle As A Biomarker For Cartilage Degeneration In Preclinical Animal Model

Sami Kauppinen; Gonçalo Barreto; David Fercher; Tuomas Frondelius; Giulia Morgese; Edmondo Benetti; Simo Saarakkala; Marcy Zenobi-Wong; Mikko Finnila

12:55 PM

Paper No. 331

Deep Learning Automated Segmentation Of Bone From Magnetic Resonance Images: Application To The Measurement Of Cartilage Strain From Loading

Sophia Y. Kim-Wang; Hattie C. Cutcliffe; Amber T. Collins; Bryan S. Crook; Chinmay Paranjape; Kyung-Min Roh; Charles Spritzer; Louis E. DeFrate

1:05 PM

Paper No. 332

Effect Of Personalized Cartilage Thickness In Atlas-based Computational Models For Predicting Progression Of Knee Osteoarthritis: Data From The Osteoarthritis Initiative

Moustafa A. Hamada

Tuesday, February 8, 2022

12:15 PM - 1:15 PM

Room Ballroom D

Session 63 Hip - Injury, Diagnostics and Treatment

Moderators: Kharma Foucher and Erin Mannen

12:15 PM

Paper No. 333

Evaluation Of Bone Marrow Aspirate Concentrate Application For Full-Thickness Acetabular Chondral Flaps

Michael P. Kucharik; Paul F. Abraham; Mark R. Nazal; Nathan H. Varady; Christopher T. Eberlin; Wendy M. Meek; Sara A. Naessig; Scott D. Martin

12:25 PM

Paper No. 334

Evaluation Of Serum And Urine Biomarkers For Developmental Dysplasia Of The Hip Prior To Onset Of Secondary Osteoarthritis

Preston Wolfe; Aaron M. Stoker; Emily V. Leary; Brett D. Crist; James L. Cook

12:35 PM

Paper No. 335 **Moved to Session 15 Hip – Dysplasia**

Does Bone Turnover Explain High Bone Density In Femoroacetabular Impingement? An Analysis Of PET And CT Imaging

Andrew D. Speirs; Gerd Melkus; Kawan Rakhra; Paul Beaulé

12:45 PM

Paper No. 336

Association Between Inflammation Activation In Hip Synovium And Development Of Synovitis And Bone Loss In Rapidly Destructive Coxopathy (RDC)

Shunichi Yokota; Tomohiro Shimizu; Taku Ebata; Gen Matsumae; Hend Alhasan; Daisuke Takahashi; Tsuyoshi Asano; Alaa Terkawi; Norimasa Iwasaki

12:55 PM

Paper No. 337

Ex Vivo Study Of Detergent Assisted Interosseous Bone Wash Treatment Of Osteonecrosis

Graham Andre; Vishal Gokani; Mo Singhal; Chi Ma; Harry Kim

1:05 PM

Paper No. 338

Three-dimensional Analysis Of Age And Sex Differences In Femoral Head Asphericity In Normal Asymptomatic Hips

Charles Mitchell; Robert Parisien; Mahad Hassan; Young-Jo Kim; Ata Kiapour

Tuesday, February 8, 2022

12:15 PM - 1:15 PM

Room 24-25

Session 64 Skeletal Muscle - Engineering and Therapeutics

Moderators: Richards Lieber and Xuhui Liu

12:15 PM

Paper No. 339

Wnt7a-releasing Hydrogel Inhibits Adipogenesis Of Skeletal Muscle Fibro-adipogenic Progenitors

Chengcheng Fu; Woojin M. Han

12:25 PM

Paper No. 340

Myoblast Mechanical Stimulus Indicates Methods For Improved Exosome Isolation And Products For Musculoskeletal Therapies

Michael Mullen; Katherine Williams; Tom LaRocca; Johnny Huard; Chelsea Bahney; Nicole Ehrhart

12:35 PM

Paper No. 341

Age-dependent Responses Of Regenerating Skeletal Muscle To Cyclic Mechanical Loading

Stephanie McNamara; Bo Ri Seo; Jonathan Alvarez; Conor Walsh; David Mooney

12:45 PM

Paper No. 342

Inhibition Of NF-Kappa Beta Signaling Does Not Prevent Tenotomy-Induced Muscle Atrophy

Gretchen Meyer; Stavros Thomopoulos

12:55 PM

Paper No. 343

Overexpression Of PRDM16 Improves Muscle Function After Rotator Cuff Tears

He Zhang; Agustin Diaz; Mengyao Liu; Yajing Hu; Hubert Kim; Brian T. Feeley; Xuhui Liu

1:05 PM

Paper No. 344

A Regenerative Rehabilitation Approach Of Voluntary Wheel Running And G-protein Coupled Receptor Agonist Positively Modifies Oxidative Capacity Of The Remaining Muscle After VML Injury

Jennifer McFaline-Figueroa; Albino G. Schifino; Edward T. Hunda; Elizabeth A. Winders; Sarah Greising; Jarrod A. Call

Tuesday, February 8, 2022

12:15 PM - 1:15 PM

Room 18-19

Session 65 Clinical Research - Genome Wide Studies and Metabolomics

Moderators: Charles Farber and Jessica Lehoczky

12:15 PM

Paper No. 345

Genomic Analyses Of Healthy Pediatric Bone And Cartilage Identifies Novel Cellular Heterogeneity And Implicates Distinct Dysplasia Subtype Treatment Targets

Donna Pacicca; Bruce Aronow; Deanne Taylor; Tammy Brown; Jeffrey Johnston; Daniel Louiselle; Adam Walter; Margaret Gibson; Tomi Pastinen; Emily Farrow

12:25 PM

Paper No. 346

Genome-wide Association Study Of End-stage Hip Osteoarthritis Treated With Total Hip Arthroplasty

Tony S. Shen; Scott Kulm; Mark Langhans; David Kolin; Mathias Bostrom; Olivier Elemento

12:35 PM

Paper No. 347

Synovial Fluid Proteomics Reveals Periostin As A Biomarker For ACL Injury In Humans And Dogs

Sydney J. Womack; Camila Carbello; Scott A. Rodeo; Heidi L. Reesink

12:45 PM

Paper No. 348

The Relationship Between Intra-articular Fracture Severity And The Synovial Joint Inflammatory Response

Diane Fink; Hannah Smith; Cale Jacobs; Zachary Olsen; Justin Haller; Don Anderson

12:55 PM

Paper No. 349

Serum And Urine Biomarkers For Predicting Outcomes After Osteochondral Allograft Transplantation Surgery

Aaron M. Stoker; Emily V. Leary; Kylee Rucinski; Jack R. Baumann; James P. Stannard; James L. Cook

1:05 PM

Paper No. 350

MRI-based Radiomic Analysis Of Soft Tissue Reactions Near Total Hip Arthroplasty

Kevin M. Koch; Robin Ausman; Hollis Potter; Matthew Koff