



# 2026 ANNUAL MEETING

DRIVING RESEARCH TO FUEL DISCOVERY

March 27 – 31, 2026 • Charlotte, North Carolina



**Saturday, March 28, 2026**

10:00 AM - 11:00 AM

Room #: Ballroom CD

## **1 Spotlight - Synovial Fibroblasts and Inflammatory Pathways in Osteoarthritis (featuring Tristan Maerz)**

Moderators - Natalia Harasymowicz and Li Zeng

10:00 AM

Paper No. 1

### **Developing Novel Complement Inhibitors Targeting Synovial Lining Macrophages**

Siyue Tao; Ye Lei; Zhiyang Kang; Zhixuan Kang

10:10 AM

Paper No. 2

### **Dual Inhibition Of Tnf $\alpha$ And Il-1 $\beta$ Signaling Attenuates Osteoarthritis In Mouse And Non-human Primate Models**

Wenyu Fu; Xin Liu; Ronghan Liu; Jin Wo; Shuya Wang; Guodong Sun; Chuan-ju Liu

10:20 AM

Paper No. 3

### **Cationic Interleukin-1 Receptor Antagonist (catil-1ra) For Post-traumatic Osteoarthritis Pain Relief**

Hengli Zhang; Timothy L. Boyer; Helna Mary Baby; Daniel B. Hoffman; Rachel Miller; Ambika Bajpayee

**Saturday, March 28, 2026**

10:00 AM - 11:00 AM

Room #: Ballroom A w/ Zone

## **2 Spotlight - A Focus of Different Aspects of the Wrist (featuring Trey Crisco)**

Moderators - Lynn Ann Forrester and Ines Reichert

10:00 AM

Paper No. 4

### **How Does Capitate Bone Morphology Relate To Screw Toggle Characteristics?**

Conor P. Lynch; Mark A. Miller; Frederick W. Werner; Kenneth A. Mann; Megan E. Oest; Alex Rodriguez; Jodi N. Dowthwaite; Kevin M. Albanese

10:10 AM

Paper No. 5

**Patient Outcomes Following Denied Rehabilitation After Total Wrist Arthroplasty: A Retrospective Review**

Sofia Restrepo; Tantiem Nguyen; Victor T. Hung; Joseph Cutrone; Daniel Bailey; Colt Crymes; Miguel Diaz; Alfred V. Hess

10:20 AM

Paper No. 6

**Osteolysis In Hand And Wrist Surgery: Are Peek Implants At Higher Risk?**

Arinze Ekowa; Miguel Gutierrez; Majd Mzeihem; John Alvarez; Peter Chebi; Mark H. Gonzalez

**Saturday, March 28, 2026**

10:00 AM - 11:00 AM

Room #: Ballroom B w/ Zone

**3 Osteocyte and Osteoblast Regulation of Bone Homeostasis**

Moderators – Ted Gross and Liyun Wang

10:00 AM

Paper No. 7

**Cox2-independent And Cox2-dependent Effects Of Naproxen On Bone Quality, Osteocytes, And Fatigue Fracture Healing In Male And Female Mice**

Alexandra Ciuciu; Eric McLaughlin; Adriana Ciuciu; Kelly Barrientos; Trenton LaPoint; Ryan Tomlinson

10:10 AM

Paper No. 8

**A Low Dose Of Wnt-agonist Molecule Stimulates Bone Formation In Aged Mice Additively With Mechanical Loading In Strain-dependent Manner**

Chenming Wei; Aaron S. Ly; Syeda N. Lamia; Stephane Angers; Matthew Silva

10:20 AM

Paper No. 9

**Interrogating The Impact Of Sustained Sclerostin Monoclonal Antibody Treatment On In Vivo Osteocyte Mechanosensitivity**

Andi Garcia-Ortiz; Murtaza Wasi; Samantha Bratcher; Sarah Hatsell; Karl Lewis

10:30 AM

Paper No. 10

**Inhibition Of Axl Receptor Tyrosine Kinase Enhances Osteoblast Function And Bone Mass In Mice**

Mubashir Ahmad; Christoph Kölbl; Irfana Jan; Ann-Kristin Dorn; Dilay Yilmaz; Alessa Wagner; Maja Vujic Spasic; Benjamin Thilo Krüger; Sooyeon Lee; Anita Ignatius; Jan Tuckermann

10:40 AM

Paper No. 11

**CXCL2 Mediates The Bidirectional Regulation Of Bone Homeostasis By Senescent Osteocytes In Mice**

Qiangqiang Li; Zaikai Zhuang; Qing Jiang

10:50 AM

Paper No. 12

**Lactation Induced Site-specific, Irreversible Osteocyte Lacunar Enlargement In Cortical Bone Formed After Pregnancy Onset**

Xiaoyu Xu; Wonsae Lee; Srijani Datta; Alethea Liu; Liyun Wang; X. Sherry Liu

**Saturday, March 28, 2026**

10:00 AM - 11:00 AM

Room #: E219 AB

**4 Rotator Cuff and Labrum Pathology**

Moderators – Brian Feeley and Rebekah Lawrence

10:00 AM

Paper No. 13

**Subchondral Bone Loss In A Rat Rotator Cuff Tear Arthropathy Model Fails To Recover Even After 6 Months**

Takayuki Ide; Tomohiro Iuchi; Hiroki Tawaratsumida; Yusuke Masuda; Kohei Uekama; Kento Shimano; Shingo Maeda; Noboru Taniguchi

10:10 AM

Paper No. 14

**Dynamic Changes In Tendon Cell Apoptosis, Mitochondrial Damage And Autophagy During Early-to-middle Rotator Cuff Tendinopathy**

Xianding Sun; Yiwen E; Xiang-Hua Deng; Mao Nie

10:20 AM

Paper No. 15

**Modulating Immune And Progenitor Cell Responses For Enhanced Labrum Tear Repair**

Liping Tang; Feabie Mendiaz; Bhavya Vaish; Sumaiya Rifat; Le Hoang; Tam Phung Nguyen; Joseph Borrelli

10:30 AM

Paper No. 16

**Inflammatory And Overuse Tendinopathy Impair Chondrocyte Function In Shoulder Crosstalk**

Felicia Pinto; Yuna Heo; Su Chin Heo

10:40 AM

Paper No. 17

**Multiple Corticosteroid Injections Compromise Tendon Histology And Biomechanical Properties In A Murine Rotator Cuff Tendinopathy Model**

Matthew R. Covello; Krishna Pedaprolu; Yuki Suzuki; Hiroataka Iura; Sidharth Ranga; Vincent Yao; Hugo Stern; Camila Carballo; Scott Rodeo; Claire Eliasberg

10:50 AM

Paper No. 18

**Bariatric Surgery Is Associated With Surgical Failure And Inferior Outcomes After Arthroscopic Rotator Cuff Repair Compared To A Matched Cohort**

Emily N. Lau; Ting Cong; Fritz Steuer; Michael Fox; Audrey Yuen Chang; Camila Grandberg; Jonathan Hughes; Albert Lin; Bryson Lesniak

**Saturday, March 28, 2026**

10:00 AM - 11:00 AM

Room #: E219 CD

**5 Hip Fractures Across the Lifespan**

Moderators - Leila Mehraban Alvandi and Hannah Dailey

10:00 AM

Paper No. 19

**Repeatability Of A Transcatheter Arterial Embolization Approach To Induce Partial Femoral Head Ischemia In Porcine Model Of Legg-calvé-perthes Disease**

John D. Carey; Ashton A. Amman; Alexandra Armstrong; Erick O. Buko; Susan Novotny; Jennifer C. Laine; Casey Johnson; Ferenc Toth

10:10 AM

Paper No. 20

**Cystic Lesions In Femoral Head Necrosis: A Dual Role As Both Bone Repair Indicator And Collapse Risk Factor**

Fan Yang; Xiaoqiang Yang; Mincong He; Wei He

10:20 AM

Paper No. 21

**Characterization Of Subtrochanteric Bone Density In Patients With Atypical Femur Fracture**

Christiana L. Cottrell; Chiara M. Oshiro; Sujay S. Garlapati; Mahdi M. Hurreh; Sri Drishaal Kumar; Holly D. Nguyen; Alyssa C. Rosen; Dylan L. Bellissimo-Meade; Allison Y. Tang; Hansen Liu; Johnathan L. Gao; Rashad Madi; Rebecca Willcocks; Ani Ural; Bruce Kneeland; Neil Sheth; Elena Taratuta; Rui Feng; Haviva M. Goldman; Chamith S. Rajapakse

10:30 AM

Paper No. 22

**Comparison Of Lower Limb Muscle Characteristics And Bone Mineral Density Between Femoral Neck And Intertrochanteric Fractures Using Ai-based Ct Analysis**

Tomoki Asano; Keisuke Uemura; Mazen Soufi; Ryo Higuchi; Sotaro Kono; Hirokazu Mae; Tetsuro Tani; Kazuma Takashima; Masaki Takao; Yoshito Otake; Seiji Okada; Hidetoshi Hamada

10:40 AM

Paper No. 23

**Correlation Of GLP-1 Agonists With 90-day Postoperative Adverse Events Following Geriatric Hip Fracture Surgery: A Large Database Analysis**

Joshua G. Sanchez; Will M. Jiang; Julian Smith-Voudouris; Katie M. Zehner; Scott Halperin; Lee E. Rubin; Jonathan Grauer

10:50 AM

Paper No. 24

**Investigating The Effect Of Glp-1 Medications On The Outcomes Of Geriatric Patients Undergoing Hip Fracture Surgical Fixation**

Joshua Morningstar; Nicholas Bank; Bradley Lauck; Anthony Paterno; Andrew Chen

**Saturday, March 28, 2026**

11:15 AM - 12:15 PM

Room #: Ballroom CD

**6 Spotlight - From Molecules to Movement: Mechanobiology of the Skeleton (featuring Joel Boerckel)**

Moderators – Damian Genetos and Annmarie Lang

11:15 AM

Paper No. 25

**Optogenetic Control Of Skeletal Muscle Activation During Early Postnatal Growth Induces Expansion Of The Growth Plate**

Moaid Shaik; Nicole Migotsky; Lavi Coren; Nathan Chervin; Adam Abraham; Peleg Hasson; Megan Killian

11:25 AM

Paper No. 26

**Bone Response To Mechanical Loading In Osteocyte-ablated Mice**

Yumei Chen; Peter Shyu; Aida S. Wen; Giuliana Fagre-Guerriero; X Edward Guo; Ling Qin; Hong Zhou

11:35 AM

Paper No. 27

**Differential Effects Of Continuous And Intermittent Salt-inducible Kinase Inhibition On Cortical And Cancellous Bone Responses To Mechanical Loading**

Muyin Huang; F. Patrick Ross; Marc Wein; Marjolein Christine Hermance van der Meulen

**Saturday, March 28, 2026**

11:15 AM - 12:15 PM

Room #: Ballroom A w/ Zone

**7 Sex Differences in Knee Pathology**

Moderators – Deva Chan and Nele Haelterman

11:15 AM

Paper No. 28

**Elucidating The Role Of Inflammation And Hormones On Sex Differences In Acute Post-ACL Tear Outcomes**

Giselle Kaneda; Lea Zila; Julia Sheyn; Dave Huang; Lihong Huo; Natasha Trentacosta; Natasha Schimmoeller; Bert Mandelbaum; Caroline Jefferies; Wafa Tawackoli; Melodie Metzger; Dmitriy Sheyn

11:25 AM

Paper No. 29

**Sex-Specific Associations Between Moderate-to-Vigorous Physical Activity And Serum MCP-1 Linked To Knee Osteoarthritis Development Following ACL Reconstruction**

Christin Büttner; Caroline Lisee; Natália Favoreto; Alexander Creighton; Ganesh Kamath; Samantha Tayne; Jeffrey Spang; Lara Longobardi; Richard Loeser; Louise Thoma; Troy Blackburn; Brian Pietrosimone

11:35 AM

Paper No. 30

**Contribution Of Gonads & Sex Chromosomes To Early Knee & ACL Structure & Function In Four Core Genotypes Mouse Model**

Taylor Turner; Claire Bruns; Cade Chezem; Adam Carter; Simran Shergill; Roufael Hanna; Ben Loflin; Steve Schlecht

11:45 AM

Paper No. 31

**Age And Sex Influence Bone Marrow Cell Therapy Efficacy In An Aged Rodent Model Of Post-traumatic Osteoarthritis**

Jarred Kaiser; William Owusu; Suhaas Bonkur; Guanglu Liu; Nazir Khan; Hicham Drissi

11:55 AM

Paper No. 32

**Females Exhibit Excess Coupled Internal Tibial Rotation Driving High Acl Forces In Response To An Applied Valgus Moment Compared To Males: A Sex-specific Computational Modeling Study In 168 Young High-risk Athletes**

Andrew E. Pechstein; Isabella Gomez Hjerthen; David Shamritsky; Mitchell Wheatley; Mark Amirtharaj; Danyal Nawabi; Thomas Wickiewicz; Michael Parides; Andrew Pearle; Bruce Beynnon; Carl Imhauser

12:05 PM

Paper No. 33

**Sex Differences In Cell And ECM Nanomechanics And Collagen VI Distribution In Human Knee Cartilage**

Jessica F. Lynn; Shawna Lopez; Paula A. Hernandez

**Saturday, March 28, 2026**

11:15 AM - 12:15 PM

Room #: Ballroom B w/ Zone

**8 Skeletal Muscle Disease, Growth and Aging**

Moderators – Koyal Garg and Michael McClure

11:15 AM

Paper No. 34

**Time-ordered Metabolic Vs Nutritional Pathways To Sarcopenia : Longitudinal Analysis With Mfr-based Classification**

Piper Takenaka; Tsuyoshi Deguchi; Hiroshi Yamada; Koichi Masuda

11:25 AM

Paper No. 35

**In-vivo Human Gracilis Muscle Active Force-Length Measurements Suggest Unexpectedly Short Muscle Fibers**

Zheng Wang; Lomas Persad; Benjamin Binder-Markey; Ernest M. Hoffman; William J. Litchy; Alexander Y. Shin; Kenton Kaufman; Richard Lieber

11:35 AM

Paper No. 36

**Machine Learning Image Classification Of Cell State Morphologies To Understand Mechanisms In The Effects Of Salubrinal And Isrib On Aging And Differentiation**

Samiha S. Mahin; Hanzhi Zhang; Alexander Brown; Andrew Brack; Brian Feeley

11:45 AM

Paper No. 37

**Pancreatic Cancer Induces Skeletal Muscle Wasting Via Dysregulated Autophagy And Mitochondrial Dysfunction Downstream Of IGFBP-3 Activated TGF- $\beta$  Receptor Signaling**

Zachary Sechrist; Karen De Mesy-Bentley; Edward Schwarz; Calvin Cole

11:55 AM

Paper No. 38

**Optimization Of Nuclei Isolation From Human Skeletal Muscle, Infrapatellar Fat Pad, And Synovium For Multi-Omics Methods**

Severin Ruoss; Dian R. Murphy; Danny Ma; Hirofumi Bekki; Catherine M. Robertson; Andrew P. Hurvitz; Francis B. Gonzales; Bahar Shahidi; Samuel R. Ward

12:05 PM

Paper No. 39

**Elucidating The Role Of Ltbp4 In Neuromuscular Contracture Pathogenesis**

Sarah Dickman; Casey Crawford; Logan Symson; Kritton Shay-Winkler; Qingnian Goh; Roger Cornwall

**Saturday, March 28, 2026**

11:15 AM - 12:15 PM

Room #: E219 AB

**9 Functional Spine Biomechanics: Insights from Imaging and Motion Analysis**

Moderators - Olumid Danisa and Arin Ellingson

11:15 AM

Paper No. 40

**Imaging Anisotropic Mechanical Properties Of Lumbar Spinal Muscle Using MR Elastography**

Alexa M. Diano; Mackenzie N. Conner; Abigail E. Caridi; Olivia M. Bailey; Dawn M. Elliott; Curtis L. Johnson

11:25 AM

Paper No. 41

**The Effect Of Lumbar Decompression On Functional Transitions In Patients With Lumbar Spinal Stenosis: Clinical And Biomechanical Evidence**

Ye Shu; Prasanth Romiyo; Tyler Schmidt; Varun Puvanesarajah; Ram Haddas

11:35 AM

Paper No. 42

**Preoperative Hip Stiffness Effect On Spinopelvic Compensation Following Lumbar Fusion**

Daniel Rusu; Aidan Lindgren; William J. Karakash; Henry Avetisian; Matthew C. Gallo; Chimere O. Ezuma; Marc A. Abdou; Jeffrey C. Wang; Ram K. Alluri; Raymond J. Hah

11:45 AM

Paper No. 43

**Motion-based Phenotypes Of Healthy And Chronic Low Back Pain Individuals Using High Deflection Strain Gauges**

Matthew Hancock; Jordan Ryan; David T. Fullwood; Ulrike Mitchell; Anton E. Bowden

11:55 AM

Paper No. 44

**Spinal Movement Impairment During Gait Persists Regardless Of Speed In Patients With Chronic Low-back Pain**

Girish Viraraghavan; Pavlos Silvestros; Nicholas Harris; Erin Archibeck; Annie Ragusa; Jeannie Bailey

12:05 PM

Paper No. 45

**Mid-range Motion Is More Sensitive Than End-range Motion For Detecting Changes Over Time In Adjacent Segment Motion After Anterior Cervical Arthrodesis**

Clarissa LeVasseur; Samuel Pitcairn; Jeremy Shaw; William Donaldson; Joon Lee; William Anderst

**Saturday, March 28, 2026**

11:15 AM - 12:15 PM

Room #: E219 CD

**10 Structural Hip Deformity**

Moderators – Jessica Goetz and Casey Myers

11:15 AM

Paper No. 46

**Comparing Sex-Based Transcriptomic Differences To Patient-Matched Reported Outcomes In Femoroacetabular Impingement Syndrome**

Alex Youn; Justin Lau; Vayun Chugh; Hanzhi Zhang; Aboubacar Wague; Miguel Lizarraga; Hiroyori Fusagawa; Nesa Milan; Sanvi Sharma; Sankalp Sharma; Monica Moore; Xuhui Liu; Alan Zhang; Brian Feeley; Stephanie Wong

11:25 AM

Paper No. 47

**Age- And Sex-related Developmental Changes In Lesser Trochanteric Version And Its Relationship To Femoral Anteversion In Normal Patients**

David Liu; Mahdi Aghaalikhani; Alexandria Taylor; Young-Jo Kim; Mohammadreza Movahhedi; Ata M. Kiapour

11:35 AM

Paper No. 48

**Three-Dimensional Analysis Of Quantitative MRI Of The Secondary Ossification Center And Metaphysis In Children With Legg-Calvé-Perthes Disease**

Erick O. Buko; Susan A. Novotny; Jennifer C. Laine; Casey P. Johnson

11:45 AM

Paper No. 49

**Osteotomy-free Correction Of Acetabular Dysplasia: Proof Of Concept Of The Shale Procedure.**

Matthew A. Halanski; Brittney Kokinos; Cameron Jeffers; Tengtung Tang; Vamsikrishna Kurakalva; Wade Shrader; Tom Crenshaw; Cindy (Xiangjia) Li

11:55 AM

Paper No. 50

**Discrete Element Analysis-computed Contact Stress As Computational Biomarker For Osteoarthritis Development In The Untreated Contralateral Hip Of Individuals That Underwent Unilateral Periacetabular Osteotomy To Treat Hip Dysplasia**

Dominic JL Rivas; Jessica Goetz; Natalie A. Glass; Ashley S. Kochuyt; Michael Willey

12:05 PM

Paper No. 51

**An International Multidisciplinary Consensus On Diagnosis Of Hip Instability Using A Delphi Method**

Paul Beaulé; Motahareh Karimijashni; Ariane Parisien; Moritz Wagner; Vincent Leopold; Stéphane Poitras; Étienne Belzile; Andrew Anderson; Sasha Carsen; Kawan Rahkra; George Grammatopoulos

**Saturday, March 28, 2026**

4:00 PM - 5:00 PM

Room #: Ballroom CD

**11 Spotlight - Species Models of Tendon Disease (featuring Heidi Reesink)**

Moderators - Alayna Loiselle and Jo Anna Smeeton

4:00 PM

Paper No. 52

**Athletic Training Alters Equine Superficial Digital Flexor Tendon Interfascicular Matrix Mechanics, Elastin And Lubricin**

Sushmitha Durgam; Caitlin Moreno; Sidney Long; Garrett Hoffman; Emily McKinley; Heidi Reesink; Tanya Garcia; Susan Stover

4:10 PM

Paper No. 53

**Type III Collagen Supports Recovery Of Matrix Structure And Tissue Mechanics In Early Neonatal Tendon Healing**

Margaret K. Tamburro; Miranda K. Doro; Susan W. Volk; Lou J. Soslowsky

4:20 PM

Paper No. 54

**Synovial Fibroblasts Exacerbate Inflammation And Peritendinous Adhesions In A Human Tendon-on-a-chip**

Isabelle Linares; Sophia Thrall; James McGrath; Hani Awad

**Saturday, March 28, 2026**

4:00 PM - 5:00 PM

Room #: Ballroom A w/ Zone

**12 NIRA - Models and Imaging**

Moderators – Dennis Janssen and Dan Latt

4:00 PM

Paper No. 55

**Hip Stability After Total Hip Arthroplasty: Quantifying Capsule And Passive Muscle Contributions**

Huizhou Yang; Kathryn Colone; Brian Haas; Casey Myers; Paul Rullkoetter; Chadd Clary

4:08 PM

Paper No. 56

**CMTX-101 Treatment In A Mouse Model Of Periprosthetic Joint Infection**

Jun Oike; Brian E. Caplan; Alexis Paulina\_Jimenez-Uribe; Yanxia Cao; Sarah E. Sansom; Deborah J. Hall; Meghan M. Moran; Veronica Hall; Charles McOsker; Markus Wimmer; Adrienn Markovics; John Hamilton

4:16 PM

Paper No. 57

**Automated 3D Analysis Of Bilateral Weight-Bearing CT Data Enables Accurate Detection Of Subtle Syndesmotic Injury**

Kareem Omran; Cesar de Cesar Netto; Nacime Salomao Barbachan Mansur; Grayson Talaski; Kepler Alencar Mendes De Carvalho; Kevin Dibbern

4:24 PM

Paper No. 58

**Establishing Ovine Mscs As A Translational Model: Continuous Low-intensity Ultrasound Induces Comparable Chondroprotective Responses In Human And Ovine Mscs**

Shahid Khan; Asmita Gyawali; Satyaki Roy; Anuradha Subramanian

4:32 PM

Paper No. 59

**Short Socket Acl Reconstruction Reduces Tunnel Widening While Maintaining Graft Maturation And Comparable Clinical Outcomes: A Prospective Quantitative Mri Study**

Takuma Kaibara; Dai Sato; Shotaro Watanabe; Jillian Neuner; Brian Feeley; Thomas Link; Drew Lansdown; C. Benjamin Ma

4:40 PM

Paper No. 60

**Towards Validating A Computational Workflow For Predicting Micromotion In Total Ankle Replacements**

Sunjung Kim; Jeffrey Hoffman; Ricardo Villar; Mariana Bissoli; Jonathan T. Deland; Jensen K. Henry; Constantine A. Demetracopoulos; Jonathan D. Glenday; Brett D. Steineman

4:48 PM

Paper No. 61

**Statistical Shape And Intensity Models Of The Human Wrist**

Thor E. Andreassen; Taylor P. Trentadue; Andrew R. Thoreson; Shuai Leng; David R. Holmes III; Kristin D. Zhao

**Saturday, March 28, 2026**

4:00 PM - 5:00 PM

Room #: Ballroom B w/ Zone

**13 Meniscus Mechanobiology and Repair**

Moderators – Martin Englund and Liane Miller

4:00 PM

Paper No. 62

**Modulating Human Meniscal Cell Phenotype Via Matrix Adhesion And Stiffness**

Anika Shah; Kiley Burkey; Susana Simmonds Bohorquez; Jenny Robinson

4:10 PM

Paper No. 63

**Meniscus Tear Gapping Under Physiological Knee Loading: Considerations For Postoperative Rehabilitation**

Jonas Schwer; Matthias Sukopp; Jonathan Wohlt; Jonas Metzger; Luisa de Roy; Anita Ignatius; Thomas Kappe; Andreas Seitz

4:20 PM

Paper No. 64

**Adipokine Dysregulation Alters Meniscus Fibrochondrocyte Mechanoresponse To Microenvironmental Cues**

Meghan E. Kupratis; Darcy D. Huang; Elizabeth R. Bernstein; Robert L. Mauck

4:30 PM

Paper No. 65

**Establishment Of A Pig Model For Preclinical Evaluation Of Vitrified Meniscal Allograft Transplantation**

Ge Pan; Haiyang Ma; Kristi Helke; William M. Pullen; Harris Slone; Meenakshi Mukherji; Daniel Eldridge; Peng Chen; Dustin Mueller; Shuchun Sun; Yongren Wu; Tong Ye; Hai Yao; Shangping Wang

4:40 PM

Paper No. 66

**Systemic Administration Of HMGB1 Peptide Promotes Meniscal Healing Via Mobilization Of PDGFR $\alpha$ + Mesenchymal Cells**

Kyota Ishibashi; Takashi Shimbo; Tomomi Kitayama; Eiji Sasaki; Takahiro Tsushima; Yasuyuki Ishibashi; Katsuto Tamai

4:50 PM

Paper No. 67

**Investigating The Functionality And Modulation Of The Mechanosensitive Ion Channel Trpv4 In The Meniscus**

A'nna M. Kelly; Nikol Trajkovski; George Truskey; Amy McNulty

**Saturday, March 28, 2026**

4:00 PM - 5:00 PM

Room #: E219 AB

**14 Education and Outreach - From Patients and Physicians to Training the Next Generation of Researchers**

Moderators - Elisha Raeker-Jordan and Susanna Chubinskaya

4:00 PM

Paper No. 68

**Impact Of Preoperative Education Course Participation On Patient-Reported Outcomes After Total Joint Arthroplasty**

Jeremiah Mekonnen; Sayf Elkousy; Adam Stephan; Corey Hryc; Anay Patel

4:10 PM

Paper No. 69

**Expert Consensus On Intraoperative Wound Irrigation In Orthopedic Surgery: A Delphi Study To Optimize Antiseptic Use And Combat Biofilm And Antimicrobial Resistance**

Prodromos Ververeli; Emma A. Woodmansey; Frank Buttacavoli; Aldo Riesgo; Christopher Bibbo; Nicholas Tedesco; David Rodriguez; Eric A. Lebbly; Jonathan Danoff; Alberto V. Carli

4:20 PM

Paper No. 70

**Women Are Unequally Represented Among Clinical Trial Leadership By Orthopaedic Subspecialty**

Eric Mao; Eve Glenn; David Ryu; Brandon Chang; Dawn LaPorte; Amiethab Aiyer

4:30 PM

Paper No. 71

**Cultivating Enthusiasm In Science And Orthopaedics In Middle School Students: Survey Data And Impact From The 2025 Ors Open Door Event**

Jason C. Marvin; Jaimo Ahn; Sydney M. Caparaso; Carolyn Chlebek; Sade W. Clayton; Elena Della Bella; John F. Drazan; Rahul Gawri; Hugo Giambini; Mackenzie Hagan; Paula A. Hernandez; Chester Lowe; Amy K. Loya; Joseph Roberts; Christina Salas; Nina (Shirley) N. Tang; Ryan E. Tomlinson; Hope D. Welhaven

4:40 PM

Paper No. 72

**Sports2stem: Community-situated Approaches For Stem Outreach To Broaden Participation In University-based Stem Research For High School Students**

John F. Drazan; William King

4:50 PM

Paper No. 73

**From Birth To Practice: Geographic Migration Of U.S. Orthopaedic Surgeons Highlights Opportunities For Workforce Retention And Residency Redistribution**

Bryce E. Duffett; Anoop S. Chinthala; Samuel T. Jines; Daniel Wurtz; Christopher D. Collier

**Saturday, March 28, 2026**

4:00 PM - 5:00 PM

Room #: E219 CD

**15 Clinical Research - Health Equity**

Moderators – Joel Gagnier and Elizabeth Yanik

4:00 PM

Paper No. 74

**Quantifying The Opportunity Cost Of Treating Obese Patients In Total Joint Arthroplasty: A Relative Value Unit Analysis Of 613,918 Cases**

Suhas Parise; Durga Singh; Isabel Herzog; Matthew Sabitsky; Sagie Haziza; Zuhdi E. Abdo

4:10 PM

Paper No. 75

**Food And Water Insecurity Are Associated With Worse Pain And Mobility In Pre- And Post-TJA Patients**

Haley Cox; Emily Parker; Alejandro Rivera-Vega; Oluwafemi Gbayisomore; David Gibson; Lee Rubin; Ilda Molloy; Daniel Wiznia

4:20 PM

Paper No. 76

**Social Determinants Of Back Pain Severity In Chicago, Il**

Hanadi A. Albadi; Ashrith V. Alavilli; Matthew C. Neal; John T. Martin

4:30 PM

Paper No. 77

**Area Deprivation Index Is A Predictor Of Readmission And Increased Medical Complications And Emergency Department Utilization After Surgery For Femoral Neck Fractures**

David Dallas-Orr; Noah Lyndall; Robert Hernandez; Abby Viglione; Safdar Khan; Gillian LS Soles; Sean T. Campbell; John P. Meehan; Zachary C. Lum

4:40 PM

Paper No. 78

**Disadvantages In Social Determinants Of Health Linked To Reduced Odds Of Revealing A Specific Etiology Of Nonspecific Low Back Pain**

Om Jahagirdar; Anthony Seddio; Gwyneth Maloy; Anish Raju; Arya G. Varthi; Raj Gala; Daniel R. Rubio; Jonathan N. Grauer

4:50 PM

Paper No. 79

**The Impact Of Healthcare Disparities On Surgical Timing For Acromioclavicular And Clavicular Injuries**

Liam Wong; Nesa Milan; Sachin Umrao; Thomas Peterson; Brian Feeley

**Saturday, March 28, 2026**

5:15 PM - 6:15 PM

Room #: Ballroom CD

**16 Spotlight - Artificial Intelligence In Arthroplasty Surgery (featuring Nicolas Piuze)**

Moderators – Jennifer Nichols and Joshua Roth

5:15 PM

Paper No. 80

**Analysis Of Planned Vs. Achieved Alignment In Robotic-assisted Total Knee Arthroplasty: Impact Of Deviations On Patient-reported Outcomes**

Tyler Lockwood; Noah Lyndall; Robert Hernandez; J. B. Smith; David Dallas-Orr; Zachary C. Lum

5:25 PM

Paper No. 81

**Machine Learning For Risk Stratification After Primary Total Knee Arthroplasty**

Jibreel Hussain; Jayalakshmi Jain; Apurva Choubey; Nezar Abunnur; Saif Khan; Yasser Farid; Mark Gonzalez

5:35 PM

Paper No. 82

**Impact Of Dynamic Alignment Cluster Preservation On Early Clinical Outcomes In Navigated Total Knee Arthroplasty Under Controlled Load**

Prudhvi Tej Chinimilli; Laurent Angibaud; Amaury Jung; Corey A. Jackson

**Saturday, March 28, 2026**

5:15 PM - 6:15 PM

Room #: Ballroom A w/ Zone

**17 Ion Channels and Steroid Pathways in Chondrocytes and Joint Degeneration**

Moderators – Lin Han and Carla Scanzello

5:15 PM

Paper No. 83

**Cartilage-specific Connexin43 Deficiency Alters Injury-induced Subchondral Bone Remodeling In A Sex-dependent Manner**

Kristyna Hargitaiova; Rebecca Irwin; Khizar Hayat; Syed S.U.H Bukhari; Alexandria M. Davis; Gianna Leon; Miguel Otero; Michelle Delco

5:25 PM

Paper No. 84

**Uncovering The Role Of Growth Hormone In Aging Associated Hip Osteoarthritis**

Anna Miller; Siqi Ren; Abhijit Sukul; Huanhuan Liu; Shouan Zhu

5:35 PM

Paper No. 85

**Piezo1-induced DNA Damage Reveals Novel Stress Response Mechanism In Chondrocytes**

Xinyi Li; Miguel Martinez Leal; Jacqueline Shine; Jaquelin Garcia Castorena; Brian Diekman; Farshid Guilak

5:45 PM

Paper No. 86

**Acid-sensing Receptor Gpr68 Mediates Inflammatory And Structural Responses To Joint Acidosis In Osteoarthritis**

Nazir M. Khan; Colette Hyde; William N. Martin; Adam Yung; Samir Chihab; Ryan Taffe; Bhakti Patel; Hicham Drissi

5:55 PM

Paper No. 87

**Kca3.1: A Key Regulatory Molecule Of Ferroptosis In Chondrocytes, It Is Crucial For Cartilage Degradation And Bone Destruction In Rheumatoid Arthritis**

Renpeng Zhou; Shufang Li; Ke Wang; Wei Hu

6:05 PM

Paper No. 88

**Estrogen, But Not Progesterone, Reduces TNF-induced Inflammation In Chondrocytes Via ER Alpha**

Ema Nunez; Meena Meiyappan; Elmira Mikaeiliagah; Paula A. Hernandez

**Saturday, March 28, 2026**

5:15 PM - 6:15 PM

Room #: Ballroom B w/ Zone

**18 NIRA - Therapeutics**

Moderators - Alejandro Almarza and Bingyun Li

5:15 PM

Paper No. 89

**Blood Flow Restriction Promotes Mitochondrial Transfer And Reduces Muscle Damage In A Duchenne Muscular Dystrophy Mouse Model.**

Hiroyori Fusagawa; Yusef Samimi; Ashley Fang; Nesa Milan; Alex Youn; Luke Sang; Ryan Sadjadi; Aboubacar Wague; Brian Feeley; Xuhui Liu

5:23 PM

Paper No. 90

**A Multi-functional Small Molecule 4PPBP Enhances Healing Of Meniscus Tears And Functional Outcomes**

Meng Feng; Angelyn Nguyen; Hyungkyun Shin; Ming Wang; Chen Zong; Sarah Ginsberg; Chenxi Nian; David Pellei; Christopher Ricupero; Chang Lee

5:31 PM

Paper No. 91

**Intra-articular Anakinra Injection Mitigates Peri-articular Bone Loss In A Murine Model Of Non-invasive Anterior Cruciate Ligament Rupture With Delayed Reconstruction**

Julia S. Retzky; Camila Carballo; Pavit Suri; Julia Keske; Ezgi Aydin; Paula Mai Phuong Trinh; Yuki Suzuki; Claire Eliasberg; Scott Rodeo

5:39 PM

Paper No. 92

**Synergistic Inhibition Of Tnfa/tnfr And C5a/c5ar1 Pathways By Two Progranulin Derivatives-Atstrin And Nc5-in Osteoarthritis Treatment**

Guiwu Huang; Wenyu Fu; Chaopeng He; Chuan-ju Liu

5:47 PM

Paper No. 93

**Delivery Of Slit3 Peptide Via A Novel Composite Bone Wound Healing Patch Improved Osseointegration And Cranial Bone Defect Repair**

Xiaojie Xing; Min Hao; Chen Jiang; Jessica Ritz; Xinping Zhang

5:55 PM

Paper No. 94

**The Protective Effect Of Microgel Cell Delivery For Intervertebral Disc Regeneration Therapy**

Namdev More; Tiffany Lee; Anoushka Prasad; Sarah Mohyeddinipour; Julia Sheyn; Giselle Kaneda; Melissa Chavez; Dean Roell; Lea Zila; Danial Khorsandi; Matthew Grol; Mehmet Dokmeci; Ali Khademhosseini; Dror Seliktar; Wafa Tawackoli; Dmitriy Sheyn

6:03 PM

Paper No. 95

**Does Early Administration Of Disease Modifying Therapy Prevent Early Onset Scoliosis In Young Children With Spinal Muscular Atrophy**

Hiroko Matsumoto; Yuri Ota; Thomas Coleman; Lennert Plasschaert; Joyce Huang; Amy Pasternak; Jason Anari; Elena Losina; Robert Graham; Basil Darras; Patrick Cahill; Brian Snyder

**Saturday, March 28, 2026**

5:15 PM - 6:15 PM

Room #: E219 AB

## **19 Arthroplasty Outcomes in Clinical Research**

Moderators - Kenton Kaufman and Kaitlyn Whitney

5:15 PM

Paper No. 96

### **Early Achievement Of A Distribution-based MCID Predicts Long-term Patient-perceived Success Following Total Knee Arthroplasty**

Kareem Omran; Colleen Wixted; Daniel Waren; Joshua Rozell; Ran Schwarzkopf

5:25 PM

Paper No. 97

### **Tight Native Lateral Flexion Gap Is A Major Intraoperative Predictor Of Manipulation Under Anesthesia: A Cross-sectional Study**

Roham Borazjani; Alexander Orsi; Danielle DeMoes; Christopher Plaskos; Sarvang Dalal; Stefan Kreuzer

5:35 PM

Paper No. 98

### **Impact Of Preoperative Depression And Antidepressant Use On Postoperative Outcomes Following Knee Arthroscopy: A Retrospective Cohort Study**

Roumina Ghamarian; Jeffrey Shi; Reed Mickelson; Robert Lindeman

5:45 PM

Paper No. 99

### **Low Uptake Of Voluntary Patient-reported Outcomes For Total Hip And Knee Arthroplasty: A Nationwide Cms Dataset Analysis**

Hana Abbas; Robert H. Ablove; Michael J. Hopson

5:55 PM

Paper No. 100

### **The Effect Of Sarcopenia On Reverse Total Shoulder Arthroplasty Outcomes: A Matched Cohort Study**

Majd Mzeihem; Roma Fe Mabanag; Ali Rteil; Jason Koh; Farid Amirouche

6:05 PM

Paper No. 101

### **The PJI-TNM Classification And Early Surgical Success In Hip And Knee Arthroplasty Infections: Retrospective Evidence From 74 Procedures**

Yohei Kumabe; Tomoaki Fukui; Tomoyuki Matsumoto; Shinya Hayashi; Keisuke Oe; Ryosuke Kuroda

**Saturday, March 28, 2026**

5:15 PM - 6:15 PM

Room #: E219 CD

## **20 Imaging Techniques for Bone and Cartilage**

Moderators – Janne Makela and Brad Nelson

5:15 PM

Paper No. 102

**3-D High-resolution Micro-ct Imaging Of Nucleus Pulposus With A New Contrast Agent In Preclinical Models Of Disc Degeneration**

Abdulkadir Nur; Madison M. Buckles; Nada H. Warda; Mohammad Yunus Ansari

5:25 PM

Paper No. 103

**Radiograph-based Radiomics Trained On MSI-MRI Evaluation Of Femoral Loosening In Patients With Total Hip Arthroplasty Improves Sensitivity Of Standard Radiographical Assessments Of Implant Integration**

Jack Consolini; Elizabeth G. Koretsky; Kevin M. Koch; Hollis G. Potter; Matthew F. Koff

5:35 PM

Paper No. 104

**In-vivo Raman Spectroscopy Can Serially Monitor Focal Cartilage Defect Progression In A Porcine Impact Model**

Erik Erslund; Michelle Delco; Jacob Giering; Javier Garcia; Tyler Michna; Bingyun Wang; Seongjue Ahn; Holly Stewart; Mark Grinstaff; Mads Bergholt; Thomas Schaer; Brian Snyder; Michael Albro

5:45 PM

Paper No. 105

**High Resolution Diffusion Tensor Imaging Can Detect Molecular And Structural Cartilage Changes After Destabilization Of The Medial Meniscus**

Nataliya Tod; Jie Chen; Benjamin Sylvanus; Zhuoheng Liu; Xinyue Han; Mingquan Lin; Fang Liu; Hong-Hsi Lee; Nian Wang

5:55 PM

Paper No. 106

**Ultradistal Ulnar Bone Density From Digital Wrist Tomosynthesis Imaging Is Effective For Screening Of Osteoporosis**

Yener N. Yeni; Ilayda C. Yeni; Daniel Oravec; Ram N. Yadav; Sudhaker D. Rao

6:05 PM

Paper No. 107

**Deep Learning-based Polarization-SHG Image For Quantitative Assessment Of Collagen I/II In Regenerative Porcine Knee**

Shu-Chun Chuang; Van-Tung Nguyen; Chun-Yu Lin; Yi-Shan Lin; Paul J Campagnola; Lin Kang; Chi-Hsiang Lien; Shean-Jen Chen; Chung-Hwan Chen

**Sunday, March 29, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom CD

**21 Spotlight - Tendon Structure and Function (featuring Stephanie Cone)**

Moderators - Brianne Connizzo and Spencer Szczesny

8:00 AM

Paper No. 108

**Paralysis Dysregulates Extracellular Matrix- And Actin Cytoskeleton-associated Genes During Tendon Development**

Ivy Vien; Aniket Jana; Paige L. Ruschke; Chia-Lung Wu; Catherine K Kuo

8:10 AM

Paper No. 109

**Static And Dynamic Tensile Strain Yield Distinct Ecm Remodeling And Signaling From Human Ligament Fibroblasts**

Kenneth Tam; Jared Ong; Mai-Ly Wilkinson; Jonathan Joseph; Rogelio Castillo; Geovanni Suarez; Keith Baar

8:20 AM

Paper No. 110

**A Novel Measurement Of Altered Achilles Subtendon Load-sharing 6-12 Months Following Rupture**

Kathryn S. Strand; Todd J. Hullfish; Maggie M. Wagner; Devyn Russo; Max Zawel; Douglas E. Schaubel; Casey Jo Humbyrd; Josh R. Baxter

**Sunday, March 29, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom A w/ Zone

**22 Spotlight - How Next-Generation Implants Can Shift Orthopaedic Practice (featuring Valentin Antoci)**

Moderators – Jessica Jennings and Ebru Oral

8:00 AM

Paper No. 111

**Extended Prophylactic Antibiotic Use Following Total Hip Arthroplasty Does Not Impact Patient-Reported Outcome Measures: Propensity-Matched Analysis**

Isaiah Freeman; Muhammad Hamza Ilyas; Hahn Kang; William Sampson; Pengwei Xiao; Carlo Mannina; Oh-Joon Kwon; Zhijun Li; Oh-Jak Kwon; Margaret Arthur; Sina Afzal; Michelle Shimizu; Young-Min Kwon

8:10 AM

Paper No. 112

**Use Of An Ex Vivo Human Bone Organ Culture Model To Compare Wound Irrigation Solutions**

Hugh Jones; Mark A. Coggins; Angus Brooks; Catherine G Ambrose; Steven Schroder; David Doherty; Kenneth Mathis; Robert Frangie; David Rodriguez

8:20 AM

Paper No. 113

**The Epigenetic Foundation Of Knee Arthrofibrosis**

Roman Thaler; Oksana Pichurin; Zachary T. Ryan; Cole E. Bothun; Mason F. Carstens; Ashley N. Payne; Mark E. Morrey; Joaquin Sanchez-Sotelo; Daniel J. Berry; Matthew P. Abdel

**Sunday, March 29, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom B w/ Zone

**23 Molecular and Cellular Mechanisms Regulating Bone Remodeling, Disease and Repair**

Moderators - Chia-Lung Wu and Chao Xie

8:00 AM

Paper No. 114

**Recombinant Human Proteoglycan 4 Prevents Pathologic Bone Formation In A Murine Model Of Spondyloarthritis**

Adrienn Markovics; Cooper Cassells; Shingo Ishihara; Jessica Lam; Caroline N. Dealy; Gregory D. Jay; Rachel E. Miller; Anne-Marie Malfait; Tannin A. Schmidt

8:10 AM

Paper No. 115

**SIRT3 Deacetylates PDHA1 To Activate Aerobic Metabolism And Promote Osteoclast Differentiation In Postmenopausal Osteoporosis**

Qiangqiang Li; Rui Peng; Baosheng Guo; Qing Jiang

8:20 AM

Paper No. 116

**Therapeutic Use Of Runx3-targeting Micro-rna To Improve Bone Fracture Healing**

David Kapfhamer; Yusuke Chiba; Nazir Khan; Joseph Roberts; Guanglu Liu; Dhara Patel; Hicham Drissi

8:30 AM

Paper No. 117

**Rapamycin Rejuvenates Skeletal Stem Cells And Restores Youthful Bone Formation**

Sophie M. Morgani; Gabrielle Pack; Raven Weng; Kevin Leclerc; Margaux Sambon; Matthew Rytel; Philipp Leucht

8:40 AM

Paper No. 118

**Cd14 Modulates Age- And Injury-induced Subchondral Bone Remodeling In Osteoarthritis (OA) Via Type I Interferon**

Lance Murphy; Kevin Burt; Kate Sharp; Baofeng Hu; Vu Nguyen; Robert Mauck; Carla Scanzello

8:50 AM

Paper No. 119

**Quantitative PET-MR Imaging Of Bone Remodeling And Muscle Composition Across Age, Sex, And BMI**

Ananya Goyal; Francesca Belibi; Yael Vainberg; Rachel Shalit; McKenzie White; Anthony Gatti; Feliks Kogan

**Sunday, March 29, 2026**

8:00 AM - 9:00 AM

Room #: E219 AB

## **24 Clinical Research Methods**

Moderators - Yen-Sheng Lin

8:00 AM

Paper No. 120

### **Distance Weighted Matching In The Quantification Of Excess Morbidity In External Hemipelvectomy And Hip Disarticulation**

Kole Joachim; Amanda Perrotta; Adrian Lin; Sumin Jeong; Brandon Gettleman; Christopher Hamad; Michael Fice; Lauren E. Wessel; Nicholas Bernthal; Alexander Christ

8:10 AM

Paper No. 121

### **Validation Of Single-camera Pose Estimation For Orthopaedic Motion Analysis**

Aniket Pratapneni; Ryan Halvorson; Pavlos Silvestros; Nicholas Harris; Jeannie F. Bailey

8:20 AM

Paper No. 122

### **Utilizing Deep Learning To Automatically Measure Radiographic Parameters For Individuals With Distal Radius Fractures**

Omar Shareef; Hailey Huddleston; Seong Jang; Duretti Fufa

8:30 AM

Paper No. 123

### **Expiration Of Machine Learning Predictive Models In Healthcare**

Aadi Ajmire; Ghazal Shabestanipour; Hamid Ghaednia; Joseph Schwab

8:40 AM

Paper No. 124

### **Building An Automated Orthopedic Trauma Registry With NLP: A Pediatric And Young Adult Emergency Department Study**

Nazgol Tavabi; Ophelie Z Lavoie-Gagne; Caitlin Mahoney; Kristin Livingston; Ata M. Kiapour

8:50 AM

Paper No. 125

### **One-year Mortality Following Hip Fracture Surgery: Development And External Validation Of A Clinical Prediction Tool**

R Kyle Martin; Bryant Oliphant; Raymond Finzel; Brooke Patterson; Tyler Loftus; Die Hu; Christopher Tignanelli

**Sunday, March 29, 2026**

8:00 AM - 9:00 AM

Room #: E219 CD

## **25 Injury and Healing Studies in Clinical Research**

Moderators – Jaimo Ahn and Christos Mousoulis

8:00 AM

Paper No. 126

**Factors And Patient-reported Outcome Measures Associated With Stress Fracture After Periacetabular Osteotomy**

Olivia M. Jochl; Zachary A. Trotzky; Giulia Beltrame; Brian Muffly; Ernest L. Sink

8:10 AM

Paper No. 127

**Associations Between Obesity And Rotator Cuff Tears, And The Mediating Role Of Inflammation: Findings From The Uk Biobank And Clinical Cohort**

Rong Zhao; Yibin Liu; Jingyao Wang; Remila Aimaiti; Limin Mou; Xing Li; Xinyi Lin; Rui Fang; Wen Zhao; Jinjin Ma

8:20 AM

Paper No. 128

**Imaging Mass Cytometry Reveals a Dynamic Synovial Cellular Landscape in Canine Cruciate Ligament Disease**

Lola L. Uliano; Kevin G. Burt; Elisabeth A. Lemmon; Janai Augustin; Carla R. Scanzello; Sarah E. Gullbrand; Kimberly Agnello; Robert Mauck

8:30 AM

Paper No. 129

**Non-tobacco Nicotine Dependence Is Associated With Worse Outcomes After Humeral Shaft Operative Fixation**

Niki J. Rodgers; Samuel Florentino; Logan Good; Alexander N. Berk; Joshua K. Napora

8:40 AM

Paper No. 130

**Differential Roles Of Inflammatory Mediators In Organ Dysfunction After Osseous Vs. Non-osseous Injury**

Sambodh Sinha; Hamed Moheimani; Greg Gaski; Katherine Frey; Simon Tallwin; Upendra Kar; Timothy Billiar; Todd McKinley

8:50 AM

Paper No. 131

**Serial Thrombelastography Identifies Distinct Pathophysiologic Responses Based On Fracture Type**

Prism Schneider; Golpira Elmi Assadzadeh; Casandra Tan; Ahmed Negm; Souvik Maiti; Jessica Duong; Paul Cattle; Andrew Dodd; Paul Duffy; Herman Johal; Robert Korley

**Sunday, March 29, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom CD

**26 Spotlight - Biomechanics and Predictive Modeling of Skeletal Tissue Health (featuring Stefaan Verbruggen)**

Moderators – Hani Awad and Samantha Weaver

9:15 AM

Paper No. 132

**A Novel Joint-on-a-chip Platform Integrated With A Multi-scale Vascular Network And Mechanical Loading Units**

Ting Li; Ming Wang; Hunjin Jeong; Alexandria Lo; Chen Zong; Chang. H. Lee

9:25 AM

Paper No. 133

**Low Senescent Burdens Rewire Osteocyte-ECM Micromechanics In 3D Co-culture**

Hossein Shaygani; Maryam Tilton

9:35 AM

Paper No. 134

**Aberrant BMP And Mechanosignaling Remodel Chromatin To Drive Heterotopic Ossification In FOP**

Ellen Y. Zhang; Douglas W. Roberts; Sang Hyun Lee; Bat-Ider Tumenbayar; Jaeun Jung; Loreilys Mejías Rivera; Inkyung Jung; Robert L. Mauck; Eileen M. Shore; Su Chin Heo

**Sunday, March 29, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom A w/ Zone

**27 A Focus on Translational Research**

Moderators – Miguel Diaz and Bo Gao

9:15 AM

Paper No. 135

**Effects Of Hydroxybisphosphonate-conjugated Sitafloracin On Fracture Healing And Skeletal Growth In Mice**

Hannah Wang; Sashank Lekkala; Youliang Ren; Allie Jia Hui Tay; Jeffrey D. Neighbors; Frank Ebetino; Shuting Sun; Noah Michael Joseph; Edward Schwarz; Chao Xie

9:25 AM

Paper No. 136

**Bioactive Calcium Sulfate/hydroxyapatite Augmentation With Systemic Zoledronic Acid For Pedicle Screw Fixation In An Osteoporotic Minipig Model**

Jan Teja Oberländer; Xinggui Tian; Alexander C. Disch; Klaus-Dieter Schaser; Peter Lee; Jishizhan Chen; Liu Jingwen; Lars Lidgren; Magnus Tagil; Deepak Raina; Stefan Zwingerberger

9:35 AM

Paper No. 137

**Plugging The Medullary Canal To Reduce Bony Overgrowth, Heterotopic Ossification, and Stump Pain Following Amputation**

Dustin Williams; Richard T. Epperson; Grace Porter; Emily Porter; Ryan Farnsworth; David Rothberg; Raymond Olsen; Aaron Olsen; Brooke Kawaguchi; Paul Pasquina; John Shero; Brad Isaacson

9:45 AM

Paper No. 138

**Raman Spectroscopic Needle Probe Provides Real-time Biomarkers Of Temporomandibular Joint Cartilage Composition Predictive Of Tissue Function**

Jacob J. Giering; Erik E. Erslund; Javier Garcia; Henry Brisebois; Thomas P. Schaer; Daniel E. Perez; David J. Chang; Mark W. Grinstaff; Mads S. Bergholt; Brian D. Snyder; Michael B. Albro

9:55 AM

Paper No. 139

**Sirt1-piezo1 Signaling As A Therapeutic Target For Bone Formation And Fracture Healing**

Donghao Gan; Francis Lee; Guozhi Xiao

10:05 AM

Paper No. 140

**Real-world Outcomes Of Platelet-rich Plasma Versus Corticosteroid Injections Across Common Tendinopathies, Bursitis, And Knee Osteoarthritis: A Propensity-matched Trinetx Study**

Aamir Shahzad; Syed Faisal Ali; Aoun Zaib Khan; Ahmed Sajid; Pregash Ellapparadja; Shaikh Muhammad Daniyal

**Sunday, March 29, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom B w/ Zone

**28 NIRA - Arthritis and Sequelae**

Moderators – Heidi Reesink and Jennifer Woodell-May

9:15 AM

Paper No. 141

**From Antioxidant To Blood Conservation: Ascorbic Acid Lowers Hidden Blood Loss And Enhances Recovery After Total Hip Arthroplasty**

Alireza Mirahmadi; Jad Lawand; Kaveh Momenzadeh; Ara Nazarian

9:23 AM

Paper No. 142

**Role Of ACC1 In Rewiring Chondrocytes Metabolism During Obesity And Injury Associated Osteoarthritis**

Anupama Binoy; Shadi Moradi; Huanhuan Liu; Abhijit Sukul; Siqi Ren; Anna Miller; Shouan Zhu

9:31 AM

Paper No. 143

**TurboID Proximity Labelling Confirms The Role Of Fat-joint Crosstalk In Osteoarthritis And Aging**

Hope D. Welhaven; Tiffany TK Pham; Bethany Andoko; Anna Pi; Richard F. Loeser; Tamara A. Alliston; Emily L. Goldberg; Kelsey H. Collins

9:39 AM

Paper No. 144

**Impaired Chondrogenesis Within Female Rat Osteochondral Defects Is Associated With Elevated Wnt, Pro-inflammatory Signaling**

Luke Childress; Landon B. Gattrell; Intawat Nookaew; Ryan M. Porter

9:47 AM

Paper No. 145

**Partial Releases Of The Pcl In Total Knee Arthroplasty Reduce Excessive Rollback During Passive Flexion Without Compromising Gait Kinematics And Implant Fixation**

Remy Winter; Peter K. Sculco; Jonathan M. Vigdorichik; Cynthia A. Kahlenberg; David J. Mayman; Eytan M. Debbi; Joseph D. Lipman; Timothy M. Wright; Fernando J. Quevedo Gonzalez

9:55 AM

Paper No. 146

**Joint Injury Generates Damage Associated Molecular Patterns That Activate Synovial Fibroblasts Towards A Fibrotic Phenotype**

Liane Miller; Rachel Flaugh; Brett Croen; Elizabeth Bernstein; Meghan Kupratis; Brendan Stoeckl; Anna Rapp; Eric Schweppe; Darcy Huang; Carla Scanzello; Robert Mauck

10:03 AM

Paper No. 147

**Unraveling The Synovial Contribution To Ankle Osteoarthritis And Pain**

Shotaro Kamijo; Ruiling Xu; MaCalus Hogan; Hang Lin

**Sunday, March 29, 2026**

9:15 AM - 10:25 AM

Room #: E219 AB

**29 Hip and Knee Arthroplasty - Kinematics and Computational Modeling**

Moderators - Roham Borazjani and Emily Hampp

9:15 AM

Paper No. 148

**Does Theia3d Update Improve The Agreement In Hip Joint Kinematics Between Markerless And Marker-bed Motion Capture?**

Camilla Antognini; Luisa Cedin; Christopher Knowlton; Philip Malloy; Markus Wimmer

9:25 AM

Paper No. 149

**Relationship Between Midflexion Knee Laxity, Isokinetic Strength, And Patient-reported Outcome Measures At 3-months After Cruciate-retaining Total Knee Arthroplasty**

David Shamritsky; Swaneet Jha; Julianna Villella; Claude Regis; Timothy Wright; Michael Parides; Stephen Lyman; Debi Jones; Cynthia Kahlenberg; Eytan Debbi; William Long; Geoffrey Westrich; David Mayman; Peter Sculco; Brian Chalmers; Carl Imhauser

9:35 AM

Paper No. 150

**Improved Polyethylene And Design Enhances Wear Performance In Hinged TKA**

Nathan Reeder; Lauren A. Ferris; Taylor Whitaker; Elizabeth Hippensteel

9:45 AM

Paper No. 151

**Surgeon Ergonomics During Total Knee Arthroplasty**

Cameron A. Dahman; Casey A. Myers; Jacqueline E. Lamb; Jason M. Jennings; Chadd W. Clary

9:55 AM

Paper No. 152

**Modelling Total Knee Replacement Polyethelene Wear In Silico: Model Verification And Validation**

Jack L. Yang; Markus A. Wimmer; Hannah J. Lundberg; Steven P. Mell

10:05 AM

Paper No. 153

**Dynamic Ct Of Patellofemoral And Tibiofemoral Kinematics Before And After Total Knee Arthroplasty: A Pilot Study**

Dennis Janssen; Miriam Boot; Sebastiaan van de Groes; Esther Tanck

10:15 AM

Paper No. 153A

**Functional Alignment Enhances Medial Pivot Motion Compared To Mechanical Alignment In Medial Pivot Total Knee Arthroplasty**

Takashi Kobayashi; Kenichi Kono; Tomofumi Kage; Tomoharu Yamazaki; Ryota Yamagami; Ryo Murakami; Takahiro Arakawa; Tomoki Murakami; Sora Koiwa; Kohei Kawaguchi; Shuji Taketomi; Hiroshi Inui; Tetsuya Tomita; Sakae Tanaka

**Sunday, March 29, 2026**

9:15 AM - 10:25 AM

Room #: E219 CD

**30 Scoliosis and Degenerative Spine Conditions: Predicting and Improving Outcomes**

Moderators - Nancy Hadley-Miller and Ganesh Swamy

9:15 AM

Paper No. 154

**Outcome Prediction After Anterior Cervical Discectomy And Fusion With Machine Learning**

Nezar Abunnur; Jayalakshmi Jain; Jibreel Hussain; Apurva Choubey; Steven Mardjetko

9:25 AM

Paper No. 155

**Spinal Alignment Device Enables Detection Of Sagittal Curvature Changes In A Mouse Disc Degeneration Model**

Michelle S. Villagran; Neharika Bhadouria; Amanda Kopelman; Kaljang Sherpa; Philip Nasser; Yunsoo Lee; Woojin M. Han; James C. Iatridis

9:35 AM

Paper No. 156

**Increased Collagen Accumulation And Enrichment Of Tgfb Pathways In The Mouse Caudal Intervertebral Disc Following Growth Rod Instrumentation**

Lucas Budd; Olanrewaju Akande; Rachana Vaidya; Christian Gonzalez; Simon Tang; Blake Montgomery

9:45 AM

Paper No. 157

**Socioeconomic And Geographic Barriers To Postoperative Follow-up In Adolescent Idiopathic Scoliosis**

Nazgol Tavabi; Timothy Williamson; Sydeny Lee; Shanika De Silva; Grant D. Hogue; Ata M. Kiapour

9:55 AM

Paper No. 158

**Stratifying Progression Risk In Congenital Scoliosis: A Multicenter Decision Tree And Regression-based Predictive Model**

Mihir Sharma; Alexander Bhatt; Jason D. Brenner; Ashlyn Callan; Priya Singh; Edina Gjonbalaj; Pediatric Spine Study Group; Jacob Schulz; Leila Mehraban Alvandi; Jaime Gomez

10:05 AM

Paper No. 159

**Glucagon-Like Peptide-1 Receptor Agonists And Postoperative Outcomes Following Laminectomy In Patients With Type 2 Diabetes: A Retrospective Cohort Study**

Ankit Choudhury; Jacob Kodra; Harshavardhan Bollepalli; Carter White; John Paul (JP) Wanner

10:15 AM

Paper No. 159A

**Effect Of A1c Levels On 30-day Complications After Elective Anterior Cervical Discectomy And Fusion**

Levi M. Travis; Darden W. Kimbrough; Aneesh V. Samineni; William A. Marmor; Danny Lee; Justin Trapania; Frank Mota; Emmanuel N. Menga

**Sunday, March 29, 2026**

4:15 PM - 5:15 PM

Room #: Ballroom CD

**31 Spotlight - CRISPR Driven Strategies in Biomaterials and Regenerative Tissue Repair (featuring Tomas Gonzalez-Fernandez)**

Moderators - Derek Dashti and Brian Diekman

4:15 PM

Paper No. 160

**CRISPR Regulation Of Noggin For Growth-factor-free Vertebral Endplate Tissue Engineering**

Matthew Fainor; Hunter Levis; Alexandra J. Baranyai; Robert Bowles; Sarah Gullbrand

4:25 PM

Paper No. 161

**Crispr-functionalized 3d Printed Biomaterials For Spatiotemporal Gene Editing In Cartilage Repair**

Joshua P. Graham; Chiebuka Okpara; Abolfazl Moghaddam; Lesley Chow; Tomas Gonzalez-Fernandez

4:35 PM

Paper No. 162

**CRISPR Epigenome Editing Abolishes Osteoarthritic Cartilage Induced Neuron Sensitization**

Joshua Stover; Robert Bowles; Alejandro Almarza

**Sunday, March 29, 2026**

4:15 PM - 5:15 PM

Room #: Ballroom A w/ Zone

**32 The Role of Synovium in the Development of Osteoarthritis**

Moderators - Jarred Kaiser and Laurie Goodrich

4:15 PM

Paper No. 163

**Synovial Fluid Delays Delamination Wear In Immature Bovine Cartilage Under Pure Cyclical Compressive Loading**

Haoyu Zhang; Serdar Kaltalioglu; Juliette Audric; Clark Hung; Gerard Ateshian

4:25 PM

Paper No. 164

**Serum Anti-microbial IgG Analysis Reveals Differential Host Immune Responses In OA Patients Compared To Healthy Controls**

Princeton B. Niblack; Cindy Brawner; Padmaja Mehta-D'souza; Matlock Jeffries

4:35 PM

Paper No. 165

**Efferocytosis By Synovial Fibroblasts In PTOA Is Mediated By The Axl Receptor**

Helen Tran; Luke Stasikelis; Jared Sharnowski; Arya Gandhi; Lindsey Lammlin; Alexander Knights; Tristan Maerz

4:45 PM

Paper No. 166

**The Wnt Of Change: Fracture-induced Synovial Pathways In Post-traumatic Ankle Osteoarthritis**

Julia Matthias; Sara Buckley; Michael David; Samuel Stark; Nicholas Austin; Mike Zuscik; Kenneth Hunt

4:55 PM

Paper No. 167

**A Single Instance Of Joint Overloading Results In Persistent Changes To The Synovial Cell Landscape**

Kevin Burt; Vu Nguyen; Yasaman Moharrer; Joel Boerckel; Robert Mauck; Carla R. Scanzello

5:05 PM

Paper No. 168

**The Fate Of Embryonically-derived Synovial Lining Macrophages During Development And Injury-induced OA Progression**

Ujjyani Ghosh; Baifeng Yu; Nikola Jaworska; Isabella Goh; Nurlatifa Zahra Mohd Fuad; Natalia Harasymowicz

**Sunday, March 29, 2026**

4:15 PM - 5:15 PM

Room #: Ballroom B w/ Zone

**33 Advances in Knee Mechanics: Modeling, Morphology, and Joint Loading**

Moderators - Ilse Jonkers and Reza Pourmodheji

4:15 PM

Paper No. 169

**Development And Evaluation Of Open-source, Multibody Models Of The Menisci To Enhance Musculoskeletal Modeling Of The Knee**

Sarah Edwards; Matthew Blomquist; Joshua Roth

4:25 PM

Paper No. 170

**Elucidation Of The Meniscus-bone Healing Process Investigated With Pull-out Repair Model For Medial Meniscus Posterior Root Tear In Rats**

Toyohiro Katsumata; Yusuke Nakagawa; Masaki Amemiya; Mai Katakura; Ryohei Takada; Tomomasa Nakamura; Kunikazu Tsuji; Ichiro Sekiya; Hideyuki Koga

4:35 PM

Paper No. 171

**The Effect Of Posterior Tibial Slope On Tibiofemoral Joint Biomechanics: An In-vitro Analysis**

Kalle Chastain; Alexander White; Hayden Baker; Sean Letendre; Suzanne Maher; Anil Ranawat

4:45 PM

Paper No. 172

**The Influence Of Obesity And Frontal Plane Alignment On Tibiofemoral Compartmental Loading**

Ryan C. Knowles; Sean E. Higinbotham; Kevin B. Shelburne; Chadd W. Clary; Casey A. Myers

4:55 PM

Paper No. 173

**3d Anatomic Variations Associated With TT-TG And PTLTR In Patellofemoral Instability Patients - A Statistical Shape Modeling Study**

Adam B. Yanke; Divesh Sachdev; Cade Smelley; Edouard Augustin; Kofi Acheampong; Nicholas Lemme; Catherine Yuh

5:05 PM

Paper No. 174

**Analysis Of Healthy Knee Kinematic Phenotypes Through K-means Clustering**

Dennis Janssen; Erin Teule; Sebastiaan van de Groes; Gerjon Hannink; Nico Verdonschot

**Sunday, March 29, 2026**

4:15 PM - 5:15 PM

Room #: E219 AB

**34 NIRA - Development and Repair**

Moderators – Mandi Lopez and Jeffry Nyman

4:15 PM

Paper No. 175

**Inducible Global Ablation Of Thrombospondin-2 Enhances Murine Fracture Bone Formation**

Amit Chougule; Christina Capobianco; Revati Ignaczak; Marc Arsever; Vishagan Karthikeyan; Matthew Solar; Luke Schroeder; Yashhvardhan Rajjput; Alexis Donneys; Kurt Hankenson; Tristan Maerz; Andrea Alford

4:23 PM

Paper No. 176

**Cortical- And Trabecular-specific Metabolomic Profiles Reflect Bone Loss During Weight Loss With Semaglutide Treatment**

Carolyn Chlebek; Sophia A. Silvia; Benjamin Aaronson; Samantha N. Costa; Avery Welfley; Belle Anselmo; Ryan Neilson; Victoria E. DeMambro; Ron K. June; Clifford J. Rosen

4:31 PM

Paper No. 177

**Human Apolipoprotein E4 Drives Disrupted Osteocyte Function And Bone Fragility**

Charles A. Schurman; Gurcharan Kaur; Serra Kaya; Joanna Bons; Carlos Galicia Aguirre; Qi Liu; Christina D. King; Kenneth A. Wilson; Harrison L. Baker; Saul Villeda; Lisa M. Ellerby; Birgit Schilling; Tamara Alliston

4:39 PM

Paper No. 178

**Macrophage YAP/TAZ Signaling Mediates Mechanoregulation Of Bone Fracture Repair**

Georgios Kotsaris; Ana-Sofia Mongil; Madhura Nijsure; Annemarie Lang; Elizabeth Bernstein; Nathaniel Dymont; Robert Mauck; Joel Boerckel

4:47 PM

Paper No. 179

**Spatial Transcriptomics Reveals Regulators Of Mouse Joint Development**

Ji-Hye Yea; Sharon Onggo; Suhani Dewagan; Kaiwen Chen; Kaily Young; Patrick Cahan

4:55 PM

Paper No. 180

**Grk2 Is A Novel Major Regulator Of Chondrocyte Differentiation During Postnatal Skeletal Development**

Tarek Haj Shehadeh; Natalie Yoshioka; Vengadeshprabhu Karuppagounder; William Pinamont; Gina Deiter; Reyad Elbarbary; Maurizio Pacifici; Fadia Kamal

5:03 PM

Paper No. 181

**Distinct Neutrophil Populations Support Regenerative Healing In Neonatal Mice**

Timothy Jacobsen; Timothy Hoang; James Hong; Levon Rodriguez; Irina Heggli; James Iatridis

**Sunday, March 29, 2026**

4:15 PM - 5:15 PM

Room #: E219 CD

**35 Resident and Fellow Research**

Moderators – Kenneth Taylor and Donna Pacicca

4:15 PM

Paper No. 182

**Topical Metformin Therapy Mitigates Scar Formation After Achilles Tendon Injury**

Liyang Chen; Vasyly Pastukh; Jianying Zhang; James Wang

4:25 PM

Paper No. 183

**Discovery Of Telocytes Integrated Into Mast Cells Adjacent To Joint-draining Lymphatic Vessels And Their Potential Role In Synovial Lymphatic System**

Andriy Kobryn; Yue Peng; H. Mark Kenney; Karen De Mesy-Bentley; Lianping Xing; Benjamin D. Korman; Christopher Ritchlin; Edward Schwarz

4:35 PM

Paper No. 184

**Osseointegration Potential Of Mg-based Implants: A Novel Bio-mechanical Comparison Of ZrO<sub>2</sub> To PIGA And Titanium Screws In A Preclinical Ovine Model**

Omer Suljevic; Weigl Valentin; Christopher Stahle; Uwe Yacine Schwarze; Ilona Mertelseder; Romy Linda Marek; Ristanovic Dragan; Iva Brcic; Patrick Lukas Holweg; Fernando Warchomicka; Annelie Martina Weinberg; Sommer Gerhard; Nicole Gabriele Sommer

4:45 PM

Paper No. 185

**Chronic Suppression Of A Multidrug-resistant Pseudomonas Aeruginosa In Prosthetic Joint Infection Using Personalized Bacteriophage Treatment**

Samuelson Osifo; Adrian Santana; Rekha Arya; Nadine Sadaka; Jewelia Rempuszewski; Dongzhu Ma; Beth Knapick; Dana Parker; Vaughn Cooper; Andrew Frear; Daria Van Tyne; Neel B. Shah; James Doub; Umit Akbey; Joseph Fackler; Subhendu Basu; Arkadiy Garber; Kenneth Urish

4:55 PM

Paper No. 186

**Functional Alignment Parameters In Total Hip Arthroplasty: A Comparative Analysis Of Seated And Standing Polar Axis Angles Across Anterior, Posterior, And Star Surgical Approaches**

Jonggu Shin; Daniel Driscoll; Alex Anatone; Peter Sculco

5:05 PM

Paper No. 187

**Controlling Anterior Tibial Translation: In Vivo Evidence For Anterior Closing-Wedge Osteotomy In Revision ACL Reconstruction**

Kohei Kamada; Tom Gale; Koji Nukuto; Anja Wackerle; Mahmut Enes Kayaalp; William Anderst; Volker Musahl; Jonathan D. Hughes

**Monday, March 30, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom CD

**36 Spotlight - Multidisciplinary Approaches for Complex Bone Defect Repair (featuring Katherine Hixon)**

Moderators - Treena Arinzeh and Augustine Saiz

8:00 AM

Paper No. 188

**SB939 Inhibits Coacervate-BMP2 Mediated Bone Regeneration In Aged Mice Using Critical Size Calvarial Bone Defect Model**

Xueqin Gao; Matthieu Huard; Nathaniel Wright; Britney Force; Zuokui Xiao; Laura Chubb; Yadong Wang; Johnny Huard

8:10 AM

Paper No. 189

**Controlled Delivery Of Activin A Via Hydrogels Promotes Bone Regeneration**

Qi He; Qiushi Liang; Christina Mundy; Joel Boerckel; Jaimo Ahn; Maurizio Pacifici; Zhiliang Cheng; Ling Qin

8:20 AM

Paper No. 190

**Custom Three-dimensional Printed Bone Grafts For Mandibulofacial Reconstruction Integrate Into Native Bone And Strengthen In A Miniature Swine Model**

Mandi J. Lopez; Mariano Carossino; Aiyanna McGowan

**Monday, March 30, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom A w/ Zone

**37 NIRA - Disc, Meniscus and Tendon**

Moderators – Dawn Elliott and Christopher Little

8:00 AM

Paper No. 191

**Mechanoresponsive Ecm-remodeling Program Drives Fibrotic Tendon Healing In A Rat Model**

Ahmet E. Pazarceviren; Mino Bastani; Lea Zila; Julia Sheyn; Wafa Tawackoli; Mia Orr; Akshat Katoch; Dmitriy Sheyn

8:08 AM

Paper No. 192

**Integrated Single Cell And Spatial Transcriptomics Analysis Reveals Distinct Senescent Cell Phenotypes That Regulate Musculoskeletal Fibrosis**

Alexandra N. Rindone; Sushma Nagaraj; Kavita Krishnan; Joscelyn C. Mejías; Anna Cho; Anna Ruta; Frank Haoning Yu; Christopher Cherry; Elana J. Fertig; Jennifer H. Elisseeff

8:16 AM

Paper No. 193

**Tendon Pathology Following Menopause Induction In An Aged Murine Model**

Ben E. Peterson; Gabrielle Gilmer; Fabrisia Ambrosio; Jenna Galloway

8:24 AM

Paper No. 194

**Emergent Cell Subpopulations And Time-evolving Biophysical Cues In The Developing Porcine Meniscus**

Meghan E. Kupratis; Jiaqi Xiang; Kevin G. Burt; Yuqi Zhang; Bryan Kwok; Sara F. Tufa; Douglas R. Keene; Nathaniel A. Dymant; Lin Han; Eiki Koyama; Robert L. Mauck

8:32 AM

Paper No. 195

**Systemic Monocyte Depletion Attenuates Injury-Induced Intervertebral Disc Degeneration**

Mark (Min Kyu) Kim; Nadeen Chahine

8:40 AM

Paper No. 196

**Factors Influencing The Relationship Between T1p MRI And T2-weighted MRI Biomarkers Of Disc Degeneration**

Noah Bonnheim; Ananya Rupanagunta; Zachary Brumm; Julia Barylak; Xiaojie Guo; Misung Han; Thomas Link; Aaron Fields

8:48 AM

Paper No. 197

**Hedgehog Signaling Promotes Meniscus Growth And Accelerates Meniscus Repair After Injury**

Yiyang Xu; Yanhua Lan; Huan Wang; Hanli Guo; Qiushi Liang; Varad Bhangui; Robert Mauck; Ling Qin

**Monday, March 30, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom B w/ Zone

**38 Mechanisms and Novel Interventions in Knee Osteoarthritis**

Moderators - Maria Isabel Menendez Montes and Carl Imhauser

8:00 AM

Paper No. 198

**The Role Of The CD44 Receptor In Post-Traumatic And Age-Related Osteoarthritis**

Trinity A. Kronk; Asaad Al-Adlaan; Alexander Powell; Zachary Oatley; Abdelrahman Boghdady; Hakem Altawil; Anas Bakdali; Gabrielle T. Robinson; Layth Khawaja; Emily Arellano; Michael DiSabato; Sharon Usip; Hope Ball; Fayez Safadi

8:10 AM

Paper No. 199

**Heterochronic Gut Microbiome Transplantation Augments The Risk Of Osteoarthritis In Mice**

Nicholas Hanebutt; Montana Barrett; Gabriella Dyson; Aleksander Szymczak; Cindy Miranda Brawner; Elias Cherian; Pratibha Dube; Austin Lopez; Padmaja Mehta-D'souza; Matlock Jeffries

8:20 AM

Paper No. 200

**RNA sequencing identifies increased immune system activation in the infrapatellar fat pad in women with hypertension and knee osteoarthritis**

Folly M. Patterson; Priya Kulkarni; Glyn Palmer; Michael Strinden; Robert Dalton; Janak Gaire; Hernan Prieto; Robert Caudle; Yenisel Cruz-Almeida; Kyle Allen

8:30 AM

Paper No. 201

**SPLA<sub>2</sub> Inhibitor-loaded Nanoparticles For The Treatment Of Spontaneous Osteoarthritis In Guinea Pigs**

Qiushi Liang; Yijun Dai; Qi He; Courtney Nuss; Jeremy Eekhoff; Tingfang Sun; Jiahao Liang; Varad Bhangui; Zhiliang Cheng; Ling Qin

8:40 AM

Paper No. 202

**Balancing Pain Relief and Cartilage Health: Differential Effects of Triamcinolone Acetonide, Lidocaine, and Bupivacaine on Human Articular Cartilage**

Annie Porter; Naod Asres; Julie Nguyen; Ying Peng; Chloe Kappen; Rachel Perry; Steven DiStefano; Michael Axe; X. Lucas Lu

8:50 AM

Paper No. 203

**Surfactant-stripped Micellar Delivery Of A Sirt6 Activator Targets Senescence In Post-traumatic Osteoarthritis**

Zachary Varrenti; Yiting Song; Jacqueline Shine; Mingqian He; Jayishnu Roy; Brian Diekman; Jonathan Lovell; Ramkumar T. Annamalai

**Monday, March 30, 2026**

8:00 AM - 9:00 AM

Room #: E219 AB

**39 Shoulder Arthroplasty**

Moderators - Hugo Giambini and Heath Henninger

8:00 AM

Paper No. 204

**Patient, Implant, And Surgical Factors That Impact Stem Fixation In Total Shoulder Arthroplasty**

Jeff Bischoff; Ghislain Maquer; Christine Mueri; Lukas Connolly; Adam Henderson; Olivier Verborgt; Philippe Favre

8:10 AM

Paper No. 205

**Personalized Risk Stratification For Total Shoulder Arthroplasty With Machine Learning**

Jibreel Hussain; Jayalakshmi Jain; Nezar Abunnur; Apurva Choubey; Benjamin A. Goldberg

8:20 AM

Paper No. 206

**Patient-specific Contact Mechanics For Anatomic And Reverse Shoulder Arthroplasty Using Finite Element Modeling**

Brendan M. Curran; Kevin B. Shelburne; Chadd W. Clary; Casey A. Myers

8:30 AM

Paper No. 207

**Post-operative Complications In Patients With Atrial Fibrillation After Primary Total Shoulder Arthroplasty: A 1:1 Propensity Matched Cohort Analysis**

Nishanth Muthusamy; Adrien Canary; Liam J. Edwards-Gaherty; Kenny Ling; Edward D. Wang

8:40 AM

Paper No. 208

**Effect Of Reverse Total Shoulder Arthroplasty Lateralization On The Torque Generated By The Deltoid And Rotator Cuff Muscles**

Jonathan D. Glenday; Lawrence V. Gulotta; Christopher M. Brusalis; Michael Fu; David M. Dines; Samuel A. Taylor; Russell F. Warren; Andreas Kontaxis

8:50 AM

Paper No. 209

**Coracoclavicular Functional Distance During Shoulder Elevation Movements In Reconstructed Acromioclavicular Joints Versus Non-Operative Treatment**

Jason M. Konrath; Sydney Wheaton; Alonso Figueroa; James Gregory; Payam Zandiyeh

**Monday, March 30, 2026**

8:00 AM - 9:00 AM

Room #: E219 CD

**40 Ankle Pathology and Mechanics**

Moderators – William Ledoux and Min Gyu Kyung

8:00 AM

Paper No. 210

**Obesity Impairs Physical Function With Minimal Impact On Ankle Mechanics In End-stage Arthritis**

Sara Arena; Robin Queen

8:10 AM

Paper No. 211

**Impact Of Total Ankle Replacement Tibial Implant Choice On Time-zero Micromotion**

Jeffrey Hoffman; Jensen Henry; Ricardo Villar; Kira Lu; Sungjung Kim; Constantine Demetracopoulos; Brett Steineman

8:20 AM

Paper No. 212

**Morphological Similarities Between Chronic Ankle Instability And Cavus Foot Type Identified Using Weightbearing Computed Tomography And Statistical Shape Modeling**

Elana Renae Lapins; Alayna Fendler; Scott LaTulip; Devon Nixon; Amy Lenz

8:30 AM

Paper No. 213

**Compensatory Gait Strategies In Medial Ankle Osteoarthritis**

Jahyung Kim; Min Gyu Kyung; Dong Yeon Lee

8:40 AM

Paper No. 214

**Smartphone-based Gait Metrics Demonstrate Effects Of Treatment Delay Following Ankle Fracture**

Leila Hollis; Kate Spitzley; Michael Hahn; Blake Dowdle; Brandon G. Wilkinson; Nicholas Strasser; Tessa Kirkpatrick; Cindy Headlee; Ellie DeLoretto; Erin Owen; Daniel C. Fitzpatrick

8:50 AM

Paper No. 215

**An Automated Registration Framework For Reducing Alignment Error In Syndesmotic Instability Detection Using Bilateral Weight-bearing CT**

Kareem Omran; Cesar de Cesar Netto; Nacime Salomao Barbachan Mansur; Grayson Talaski; Kepler Alencar Mendes De Carvalho; Kevin Dibbern

**Monday, March 30, 2026**

10:45 AM - 11:45 AM

Room #: Ballroom CD

**41 Spotlight - Spine Pathobiology: From Signaling Pathways to Cell-Based Therapies (featuring Gianluca Vadala)**

Moderators – Sade Clayton and Svenja Illien-Junger

10:45 AM

Paper No. 216

**Immunomodulatory Effects Of NFAT1 On The Vertebral Bone Marrow And Intervertebral Disc Following Vertebral Endplate Microfracture Injury In Mice**

Dalin Wang; Mingcai Zhang; Patrick George; Ryan Ranzau; Richard Hastings; Brandon Carlson; Jinxi Wang

10:55 AM

Paper No. 217

**Accelerated Ovarian Failure Model Of Menopause Increases Low Back Pain Associated Behavior In Mice**

Rebecca M. Irwin; Lianne Trigiani; Laura Berkowitz; Nozomi Nishimura; Chris B. Schaffer

11:05 AM

Paper No. 218

**Application Of An Electric Current In The Developing Chicken Embryo Induces Spinal Deformity**

Carly Ciociola; Jacob V. Jordan; Giuseppe Orlando; Andrea Ketschek; Gianluca Gallo; Jason Anari; Brian Snyder; Thomas Schaer; Patrick Cahill

**Monday, March 30, 2026**

10:45 AM - 11:45 AM

Room #: Ballroom A w/ Zone

**42 Mechanistic Insights into Bone Healing**

Moderators – Katherine Hixon and Karl Lewis

10:45 AM

Paper No. 219

**Thrombospondin Signaling Links Interfragmentary Strain To Fibroblast Activation In Nonunion**

Matthew D. Patrick; Jaimo Ahn; Kurt Hankenson; Ramkumar T. Annamalai

10:55 AM

Paper No. 220

**Mast Cell-derived IL-6 Is A Critical Mediator Of Posttraumatic Inflammation And Compromised Fracture Healing**

Verena Fischer; Dorothea Gebauer; Jana Bleher; Sandra Dieterich; Deniz Ragipoglu; Melanie Haffner-Luntzer; Anne Dudeck; Anita Ignatius

11:05 AM

Paper No. 221

**Temporal Notch Disruption Uncouples Maturation From Trans-differentiation In Normal Fracture Healing**

Fatma Betul Kabadas; Konrad Lautenschlager; Jacob Noorily; Andrew Coon; Madison Buckles; Emma Wessels; Christina Capobianco; Alexis Donneys; Ivo Kalajzic; Kurt Hankenson

11:15 AM

Paper No. 222

**Targeting Gata6 To Enhance Periosteal Stem Cell-mediated Repair In Bone Fractures**

Eric C. Lin; Yiwei Dong; Patrick Barros Tiburcio; Christopher M. Domes; Wan-Ju Li

11:25 AM

Paper No. 223

**Using The Plasma Proteome To Define The Temporal Progression Of Normal And Nonunion Human Humerus Fracture Healing**

Nazanin Nafisi; Serkalem Demissie; Avani Vaishnav; Ryan Kim; Jason Lowe; Robert O'Toole; David Weiss; Paul Matuszewski; George Hanson; Joseph Patterson; Roman Natoli; Suna Chung; Renan Castillo; Paul Tornaetta III; Louis Gerstenfeld

11:35 AM

Paper No. 224

**14-3-3ε As An Intracellular Mediator Of PGRN/TNFR2 Signaling In Promoting Bone Fracture Healing**

Chaopeng He; Yonggang Li; Wenyu Fu; Guiwu Huang; Jingwei Bi; Ryan MacLeod; Chuan-ju Liu

**Monday, March 30, 2026**

10:45 AM - 11:45 AM

Room #: Ballroom B w/ Zone

**43 New Perspectives on OA Treatment**

Moderators – Ming Pei and Ryan Porter

10:45 AM

Paper No. 225

**Novel Transcriptional Roles Of Matrix Metalloproteinase-13 In Osteoarthritis: More Than A Cartilage-degrading Enzyme**

Ruiling Xu; Yuesong Yin; Hang Lin

10:55 AM

Paper No. 226

**Depletion Of Prg4-expressing Cells In Adult Mice Enhances Synovial Ossification And Does Not Protect From Cartilage Degeneration Following Surgically Induced Post-traumatic Osteoarthritis.**

Danielle Rux; Krisztina Buzas; Sarah Catheline; Maurizio Pacifici

11:05 AM

Paper No. 227

**Intercellular Communication Among In Situ Chondrocytes Through Purinergic Receptors**

Ying Peng; Chloe Kappen; Annie Porter; Michael Axe; X. Lucas Lu

11:15 AM

Paper No. 228

**Lacritin From Tears Restores Chondrocyte Homeostasis And Protects Against Osteoarthritis Progression**

Li (Jasmine) Xiao; Yi Zhang; Sophia Li; Katelyn Kim; Katie Cheng; Brock Manley; Yuan Xing; Li Jin; Xudong (Joshua) Li

11:25 AM

Paper No. 229

**Regulation Of Cartilage Matrix Stability Via Decorin Molecular Interactions With Collagen II And Aggrecan**

Thomas Li; Gabriela Canziani; Biao Han; Neil Patel; X. Lucas Lu; David Birk; Renato V. Iozzo; Irwin M. Chaiken; Robert L. Mauck; Lin Han

11:35 AM

Paper No. 230

**Self-amplifying Rna Of Non-cartilage-permeating Tgf- $\beta$  Inhibitors As A Targeted Arthrofibrosis Treatment**

Bor-Lin Huang; Satviki Singh; Sedat Dogru; Thomas Schaer; Brian Snyder; Matthew Layne; Mark Grinstaff; Michael Albro

**Monday, March 30, 2026**

10:45 AM - 11:45 AM

Room #: E219 AB

**44 Complications in Arthroplasty**

Moderators - Mary Bayers-Thering and Zachary Lum

10:45 AM

Paper No. 231

**Evaluating The Influence Of Prior DAIR On Two-Stage Exchange Arthroplasty Outcomes In Hematogenous Total Knee Arthroplasty PJI: A Retrospective Cohort Study**

Christian Cisneros; Michael Shannon; Samuelson Osifo; Victoria Wong; Andrew Frear; Andrew Gordon; Akeem Williams; Noel Carlos; Jamie Heimroth; Pedro L. Baldoni; Yan Ma; Kenneth Urish

10:55 AM

Paper No. 232

**Risk Stratification After Revision Total Knee Arthroplasty Through Machine Learning-Based Modeling**

Jayalakshmi Jain; Jibreel Hussain; Nezar Abunnur; Apurva Choubey; Esa Syed; Malyika Hussain; Yasser Farid; Mark Gonzalez

11:05 AM

Paper No. 233

**Influence Of Extended Antibiotic Use On Patient-reported Outcomes Following Total Knee Arthroplasty**

Hahn Kang; Carlo Mannina; Muhammad Hamza Ilyas; Oh-Joon Kwon; Isaiah Freeman; Oh-Jak Kwon; William Sampson; Michelle Shimizu; Sina Afzal; Zhijun Li; Pengwei Xiao; Margaret Arthur; Young-Min Kwon

11:15 AM

Paper No. 234

**Sympathetic Nerve-driven Cd200-cd200r1 Interactions Between Macrophages And Endothelial Cells In Sustained Prosthetic Joint Infection**

Yang Xing; Puyi Sheng

11:25 AM

Paper No. 235

**Bone Mineral Density Correlates To Risk Of Bone Failure Under TKA Tibial Implants**

Clarisse Zigan; Peter Sculco; Cynthia Kahlenberg; Joseph Lipman; Timothy Wright; David Mayman; Eytan Debbi; Fernando Quevedo Gonzalez; Jonathan Vigdorichik

11:35 AM

Paper No. 236

**Do Patient And Implant Factors Influence Wear In Unicompartmental Knee Arthroplasty? A Retrieval Study**

Carolina S. Haboba Nebel; Ajay S. Potluri; Aditya S. Yadav; Anne Debenedetti; Spencer Schulte; Jennifer L. Wright; Deborah Hall; Robin Pourzal; Craig Della Valle

**Monday, March 30, 2026**

10:45 AM - 11:45 AM

Room #: E219 CD

**45 Surgical Intervention Studies**

Moderators – Sarah Floyd and Meir Marmor

10:45 AM

Paper No. 237

**Pre-operative Use Of Glp-1 Agonists Does Not Increase The Odds Of Aspiration Following Femur Fracture Repair In Adults**

Alexander Yunke; Michael Phelps; Zachary Tamweber; Ellen Lutnick

10:55 AM

Paper No. 238

**Transfemoral Bone-anchored Limb Use Improves Osteoarthritic Musculoskeletal Biomarkers After 12-months: A Quantitative Magnetic Resonance Imaging Study**

Brecca Gaffney; Mitchell A. Ekdahl; Julio Carballido-Gamio; Cory L. Christiansen; Jason W. Stoneback

11:05 AM

Paper No. 239

**Examining Distal Interlocking Screw Loosening In Femoral Intramedullary Nails**

Sarah J. Wegman; Hashim Shaikh; James Brodell; Thomas Rodenhouse; Noah Joseph

11:15 AM

Paper No. 240

**The Acceptability Of The Upper Extremity Life Impact Measure- Youth (ue Lim-y) Among Children With Upper Extremity Impairment And Pediatric Hand Specialist Clinicians**

Jenny M. Dorich; Emily S. Ho; Kaitlynn N. Jackson; Roger Cornwall

11:25 AM

Paper No. 241

**Comparative Clinical Outcomes Of Locking Versus Dynamic Compression Plates For Radius And Ulna Fractures: A Meta-analysis**

Ali Rteil; Majd Mzeihem; Brendon Wang; Alexander Crespo; Mark Gonzalez; Farid Amirouche

11:35 AM

Paper No. 242

**Structural Integrity Of Rotator Cuff Repair Affects Shoulder Strength But Not Range Of Motion Or Patient-reported Outcomes At One Year: A Prospective Causal Inference Study**

Sambit Sahoo; Bong-Jae Jun; Andrew Baker; Cathy Shemo; Yuxuan Jin; Jason Ho; Vahid Entezari; Mark Schickendantz; Lutul Farrow; Alfred Serna; Joshua Polster; Carl Winalski; Peter Imrey; Eric Ricchetti; Joseph P. Iannotti; Kathleen Derwin

**Monday, March 30, 2026**

3:30 PM - 4:30 PM

Room #: Ballroom CD

**46 Multi-Organ Crosstalk Across the Musculoskeletal System**

Moderators - Carolyn Chlebek and Tristan Maerz

3:30 PM

Paper No. 243

**Joint Macrophages Are Critical For Synovium And Intra-articular Fat Pad Homeostasis And OA Development**

Qiushi Liang; Qi He; Yijun Dai; Yiyang Xu; Jiahao Liang; Varad Bhangui; Zhiliang Cheng; Ling Qin

3:40 PM

Paper No. 244

**Adipose-derived Complement Factors Drive Knee Pain With Sham And Knee Injury In Aged Male Mice**

Bethany A. Andoko; Anna Pi; Reyna E. Villa; Hope D. Welhaven; Emily L. Goldberg; Kelsey H. Collins

3:50 PM

Paper No. 245

**Synovium-cartilage Crosstalk In Facet Joint Osteoarthritis And Correlations With Adjacent Disc Degeneration**

Janai A. Augustin; Kevin G. Burt; Matthew Fainor; Brianna Orozco; Sung Yeon Kim; Carla Scanzello; Sarah Gullbrand

4:00 PM

Paper No. 246

**Scrna-seq Analysis Identifies Prosaposin (psap) Signaling Between Intervertebral Disc, Dorsal Root Ganglion, Spinal Cord, And Inflammatory Cells In A Rat In-vivo Chronic Discogenic Pain Model**

Jonathan J. Huang; Alon Lai; Timothy Hoang; Denise Iliff; Jennifer Gansau; Levon Rodriguez; Timothy Jacobsen; Nadine Schrode; Andrew Hecht; James Iatridis

4:10 PM

Paper No. 247

**Unbiased Heart Rate Variability Profiling Reveals Three Stress Phenotypes In Late-stage Osteoarthritis**

Zsuzsa Jenei-Lanzl; Rebecca Sohn; Tina Assar; Frank Zaucke; Georg Pongratz

4:20 PM

Paper No. 248

**CD14 Deficiency In Mice Protects Against Age-associated Mobility Loss, Pain, And Multi-joint Degeneration**

Kevin G. Burt; Vu Nguyen; Anna Rapp; Lance Murphy; Robert Mauck; Carla Scanzello

**Monday, March 30, 2026**

3:30 PM - 4:30 PM

Room #: Ballroom A w/ Zone

**47 Hip and Knee Arthroplasty - Implant Fixation and Materials**

Moderators - Mark Gonzalez and Songyun Liu

3:30 PM

Paper No. 249

**How Much Did Large-Diameter Metal-On-Metal Total Hip Replacements Actually Wear?**

Bianca Romay; Jennifer L. Wright; Deborah Hall; David Schroeder; Douglas Van Citters; Joshua Jacobs; Robin Pourzal

3:40 PM

Paper No. 250

**Assessing Independent Associations Between Radiographic Thigh Muscle Measurements And One-Year Mortality After Hip Fracture Surgery**

Robin Hu; Duco Laane; Robert K. Wagner; Thirushan Wignakumar; Marco T. Di Stefano; Fatmanur Aydin; Annemarie van Rossum du Chattel; Marcos R. González; Matthew Mariyampillai; Kihyun Kwon; Jacob Mandell; Detlef van der Velde; Michael J. Weaver

3:50 PM

Paper No. 251

**Worse Fixation Of Cemented Patellar Components On Magnetic Resonance Imaging Is Associated With Increased Patellar Component Surface Damage**

Sara E. Sacher; Richard Hwang; Aarti A. Shenoy; Hollis G. Potter; Timothy Wright; Douglas Padgett

4:00 PM

Paper No. 252

**Fatigue, Yield And Rotational Resistance Of A Novel Secondary Fixation For The Femoral Head**

Gabi Schwartz; Loren Latta; Abeer Al-Barghouthi; Francesco Travascio

4:10 PM

Paper No. 253

**Synovial Fluid Electrochemical Properties Are Altered After Total Knee Arthroplasty**

William Mihalko; Bailey Bond; Michael Kurtz; Steven Kurtz; Christopher Holland; James Guyton; John Crockarell

4:20 PM

Paper No. 254

**Biomechanical Analysis Of The Femoral Neck System (fns) For Femoral Neck Fracture (fnf) Fixation**

Wei Zeng; Mengyin Xu; Yuewei Lin

**Monday, March 30, 2026**

3:30 PM - 4:30 PM

Room #: Ballroom B w/ Zone

**48 Muscle Injury and Regeneration**

Moderators - Sarah Greising and Hongshuai Li

3:30 PM

Paper No. 255

**Investigating The Role Of Cx43 In FAP-Mediated Mitochondrial Transfer For Muscle Regeneration After Ischemia-Reperfusion Injury**

Luke Sang; Cristhian Montenegro; Justin Lau; Megan Le; Matthew Allen; Ryan Sadjadi; Miguel Lizarraga; Nesa Milan; Hiroyori Fusagawa; Yusef Samimi; Hannah Chi; Xuhui Liu; Brian T. Feeley; Michael Davies

3:40 PM

Paper No. 256

**Smad4 Signaling Underlies Neuromuscular Contractures: A Target For Localized Drug Eluting Hydrogel Therapy**

Elaine A. Nagahara; Peter T. Shyu; X Edward Guo; Alice Huang; Varun Arvind

3:50 PM

Paper No. 257

**Immunomodulatory Effects Of Fk506-loaded Biosponges In A Rat Volumetric Muscle Loss Model**

Jamshid Tadiwala; Abigail Mallo; Priya Modi; Nishitha Mekala; Koyal Garg

4:00 PM

Paper No. 258

**WNT7A MRNA Lipid Nanoparticles Promote Muscle Hypertrophy And Reduce Fatty Infiltration**

Larion Martin Santiago; Kasoorelope Oguntuyo; Britney Chin-Young; Damien Laudier; Zhixin Yu; Pedro Henrique Alves da Silva; Angelo Amabile; Fei Fang; Woojin Han

4:10 PM

Paper No. 259

**Identification Of Genes Central To Skeletal Muscle Elongation**

Logan K. Symson; Bruna Collodetti de Souza; Geethika Velaga; Kritton Shay-Winkler; Qingnian Goh; Roger Cornwall

4:20 PM

Paper No. 260

**Evaluating Persistent Abnormal Neuromuscular Junction Function Following Chronic Volumetric Muscle Loss In Middle-aged Mice**

Shaquielle Dias; Eszter Mihaly; Neha Chellu; Eileen Su; Wang Annabelle; Xuan Li Liu; Dominic Davis; Chris Ward; Warren Grayson

**Monday, March 30, 2026**

3:30 PM - 4:40 PM

Room #: E219 AB

**49 Late Breaking Podium**

Moderators - Adetola Adesida and Qing-Qing Qui

3:30 PM

Paper No. 2034

**Ultrasound-driven Regulation Of Catalysis-immunity Via An In Situ-doped Sonocatalyst Coating For Infectious Bone Defect Repair**

Shuoyuan Li; Duan Wang; Zhou Zongke

3:40 PM

Paper No. 2035

**Intra-articular Injection Of A Fibroblast Activation Protein Inhibitor Mitigates Synovial Pathology In A Large Animal Model Of PTOA**

Elizabeth R. Bernstein; Brett Croen; Brendan Stoeckl; Emily Cook; Lorie Laforest; Robert Mauck; Liane Miller

3:50 PM

Paper No. 2036

**Elastin Collagen Nanovesicles - A Novel Platform For Collagen Targeting And Controlled Drug Delivery**

Ann Thomas; Elaine Kachala; Shashika Gammanchiralage; Kristi Kiick; Christopher Price

4:00 PM

Paper No. 2037

**Dynamic Mechanical Loading Enhances The Regenerative Potency Of Meniscus Cell-derived Extracellular Vesicles**

Catherine Cheung; Zizhao Li; Sung-Han Jo; Se-Hwan Lee; Jina Ko; Su Chin Heo

4:10 PM

Paper No. 2038

**Stiffness-dependent Phenotypic Shifts In Meniscus Cells: A Fetal Pig Model For Regenerative Engineering**

Yuqi Zhang; Meghan Kupratis; Georgios Kotsaris; Darcy Huang; Emily Sharp; Nathaniel Dymant; Lin Han; Robert Mauck

4:20 PM

Paper No. 2039

**From Heart To Shoulder: In Vitro And Ex Vivo Therapeutic Evaluation Of Recombinant Periostin In The Rotator Cuff Overuse Tendinopathy Model Via Novel Cell And Tendon Strex Bioreactors**

Weizhe Zhang; Yongxin Mai; Ichiro Tsukamoto; Yiwen Zhao; Cheng-Yu Yin; Omar Selim; Lawrence Berglund; Chunfeng Zhao

4:30 PM

Paper No. 2040

**Tlr2/4 Inhibitors Rescue The Osteonecrotic Bone Induced Activation Of Inflammasome In Macrophages**

Zhuo Deng; Chau Nguyen; Yan Liu; Takuya Usami; Reuel Cornelia; Saumya Bhagat; Sarah Madero; Chi Ma; Gabriel Mbalaviele; Yinshi Ren; Chao Xing; Harry Kim

**Monday, March 30, 2026**

3:30 PM - 4:30 PM

Room #: E219 CD

**50 Three-Dimensional Analysis and Achilles Tendon Rupture**

Moderators - Soheil Ashkani-Esfahani and Howard Hillstrom

3:30 PM

Paper No. 261

**Asymmetry In The Presentation Of Cavovarus Foot Deformity Associated With Charcot-Marie-Tooth Disease**

Melissa R. Requist; Andrew C. Peterson; Bopha L. Chrea; Amy L. Lenz

3:40 PM

Paper No. 262

**Biomechanical Evaluation Of Various Stitch Techniques For Mid-substance Achilles Rupture Repairs**

Eric Cohen; John Raso; Conrad Stoy; D. Trey Remaley; Miguel A. Diaz

3:50 PM

Paper No. 263

**Three-dimensional Foot Shape And Plantar Pressure Scanning In A Large Physically Active Cohort**

Michelle Meyers; Elana Lapins; Amy Lenz; Josh Baxter

4:00 PM

Paper No. 264

**3D Foot And Ankle Radiographic Measurements Toolbox**

Andrew Peterson; Elana Lapins; Melissa Requist; Karen Kruger; Amy Lenz

4:10 PM

Paper No. 265

**Diabetes And Surgical Repair Impact Early Dorsiflexion Recovery After Achilles Tendon Rupture**

Chad Elliott; Alvin Ouseph; Alexander Abraham; Jerry S. Grimes

4:20 PM

Paper No. 266

**Morphological Changes Of The Subtalar Joint In Pediatric Flatfoot Via Statistical Shape Modeling**

Nick Slavik; Renae Lapins; Nathan Nichols; Amanda T. Whitaker; Joseph J. Krzak; Amy L. Lenz; Karen M. Kruger

**Tuesday, March 31, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom CD

## **51 Tendon Development and Injury**

Moderators - Hiroshi Asahara and Anne Gingery

8:00 AM

Paper No. 267

### **Transcriptomic Analysis Of Late Tendon Development In Normal And Paralyzed Chick Embryos**

Maria L. Canonicco Castro; Maxwell Konnaris; Ben Peterson; Spencer Szczesny

8:10 AM

Paper No. 268

### **Transcriptomic Responses To Cyclic Loading Reveal Overload-driven Networks In Early Tendon Degeneration**

Yuna Heo; Ellen Zhang; Yongho Bae; Su Chin Heo

8:20 AM

Paper No. 269

### **Partial Epigenetic Reprogramming Rescues Aged Tendon Healing**

Neeta Adhikari; Lauren Benoodt; Clara Sensini; Anne Nichols; Alayna E. Loiselle

8:30 AM

Paper No. 270

### **Investigation Of Gamma Delta T Cells And The JAK/STAT Signaling Pathway In Tendon Healing**

Ella R. McGovern; Giulia Crosio; Alice Huang

8:40 AM

Paper No. 271

### **Spatial Transcriptomics Reveal Unique Molecular Signatures Of The Developing Achilles Tendon**

Grey F. Hallstrom; Xi Jiang; Nathaniel Dymont

8:50 AM

Paper No. 272

### **Fine Tuning Of Senescent Microenvironment By Sympathetic Outflow Orchestrates Tendon Repair**

Xiaonan Liu; Peilin Zhang; Wenhao Lu; Shen Liu

## **Tuesday, March 31, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom A w/ Zone

## **52 Sexual Dimorphisms and Hormones in OA and Joint Tissues**

Moderators – Rachel Miller and Arin Oestreich

8:00 AM

Paper No. 273

**Sexual Dimorphism Of Treatment Response To The Low-dose Semaglutide In The Mice Osteoarthritis Model**

Mingde Cao; Xueyou Zhang; Run Huang; Kevin Jin; Patrick Shu-Hang Yung; Michael Tim-Yun Ong

8:10 AM

Paper No. 274

**Evaluation Of Sex-Related Differences In Uptake And Chondroprotection Of ROS Scavenging Manganese Dioxide Nanoparticles**

Jessica L. Aldrich; Gengfu Dong; Arjun Panicker; Jennifer Russell; Robert Ovalle Jr.; Kyle Allen; Terence Ryan; Blanka Sharma

8:20 AM

Paper No. 275

**Sex-specific MicroRNA Profiling Reveals Distinct Mechanisms For Onset And Progression Of Aging-associated Osteoarthritis In A Transgenic Mouse Model**

Yajun Liu; Jing Ding; Qian Chen

8:30 AM

Paper No. 276

**Differential Burden Of Senescence In Synovial Fibroblasts Of Females And Males At Total Joint Replacement**

Garrett A. Sessions; Lauryn Bailey; Richard F. Loeser; Sam C. Wolff; Jeremy E. Purvis; Brian O. Diekman

8:40 AM

Paper No. 277

**Obesity And Trauma Significantly Impact Synovial Immune Cell Landscape In Oa Patients**

Isabella Goh; Ujjyani Ghosh; Baifeng Yu; Nikola Jaworska; Nurlatifa Zahra Mohd Fuad; Shivakumar Rayavara Veerabhadraiah; Mick Juryne; Josh Daryoush; Justin Haller; Natalia Harasymowicz

8:50 AM

Paper No. 278

**Peak Estradiol Concentrations Increase Collagen Degradation By Female, But Not Male, Meniscal Cells**

Andrea M. Frankel; Jennifer L. Puetzer

**Tuesday, March 31, 2026**

8:00 AM - 9:00 AM

Room #: Ballroom B w/ Zone

**53 Clinical Outcomes in Arthroplasty**

Moderators - Ichiro Tsukamoto

8:00 AM

Paper No. 279

**Does Method Of Fixation And Use Of Robotic Assistance Influence Patient Outcomes In Total Knee Arthroplasty?**

Mandeep S. Chhokar; Hania Shahzad; John P. Meehan; Mauro Giordani; Adam J. Taylor; Zachary C. Lum

8:10 AM

Paper No. 280

**Withdrawn**

8:20 AM

Paper No. 281

**Do Customized Implants Yield Superior Clinical And Functional Outcomes Compared To Off-The-shelf Implants In Primary Total Knee Arthroplasty? A Propensity-matched Analysis**

Carlo Mannina; William Sampson; Michelle Shimizu; Hahn Kang; Margaret Arthur; Oh-Joon Kwon; Zhijun Li; Oh-Jak Kwon; Sina Afzal; Isaiah Freeman; Muhammad Hamza Ilyas; Pengwei Xiao; Young-Min Kwon

8:30 AM

Paper No. 282

**Total Knee Arthroplasty In A Transplant Population Achieves Similar Outcomes To A Matched Non-transplanted Population: A Retrospective Cohort Study**

Timothy S. Brown; Reece M. Rosenthal; Thomas C. Sullivan; Justin O. Aflatooni; Terry A. Clyburn; Stephen J. Incavo; Kwan J. Park

8:40 AM

Paper No. 283

**A Joint Effort: Community-level Social Determinants Of Health May Be More Important Than Race In The Machine Learning Prediction Of Adverse Outcomes After Total Knee Arthroplasty**

Chloe Heiting; Yi Yiyuan; Susan M. Goodman; Peter Sculco; Fei Wang; Rich Caruana; Peter Cram; Said Ibrahim; Bella Mehta

8:50 AM

Paper No. 284

**Prediction Of Postoperative Risk Following Primary Total Hip Arthroplasty Using Machine Learning Models**

Jayalakshmi Jain; Jibreel Hussain; Nezar Abunnur; Apurva Choubey; Esa Syed; Malyika Hussain; Yasser Farid; Mark Gonzalez

**Tuesday, March 31, 2026**

8:00 AM - 9:00 AM

Room #: E219 AB

**54 Intervertebral Disc - Degeneration and Pain**

Moderators - Isma Liza Mohd Isa and Dmitriy Sheyn

8:00 AM

Paper No. 285

**A Microfluidic 3d Disc-neuron Platform For Investigating Discogenic Pain And Therapeutic Modulation**

Yuan Xing; Li (Jasmine) Xiao; Li Jin; Xudong (Joshua) Li

8:10 AM

Paper No. 286

**Combined Anti-tnf $\alpha$  And Anti-depressant Treatments Have Additive Effects Alleviating Pain In Male And Female Rats In A Chronic In-vivo Discogenic Pain Model**

Denise C. Iliff; Harsev Singh; Irina Heggli; Jonathan J. Huang; Venetia Zachariou; Andrew C. Hecht; Damien M. Laudier; James C. Iatridis; Alon Lai

8:20 AM

Paper No. 287

**Testosterone Therapy, Friend Or Foe For The Aging Spine**

Jeffrey L. Hutchinson; Ermina Hadzic; Shelby Oke; Diana Quinonez; Matthew Grol; Andrew Leung; Cheryle A. Seguin

8:30 AM

Paper No. 288

**Serpina1a Is A Novel Age-related Mediator Of Myeloid Cell Recruitment In Intervertebral Disc Injury**

Joana I. Almeida; Tori Kroon; Martin Umali; Jazz Munitz; Philip Nasser; Jonathan Huang; Amelia Franchin; Michelle Gelbs; Abraham Teunissen; Nilsson Holguin

8:40 AM

Paper No. 289

**Intervertebral Disc Degeneration Correlates With Neuroinflammation In A Translational Large Animal Model**

Janai A. Augustin; Kevin G. Burt; Caitlin Barrett; Harvey Smith; Robert Mauck; Thomas P. Schaer; Sarah Gullbrand

8:50 AM

Paper No. 290

**Transcriptional And Functional Changes In Dorsal Root Ganglion Neurons From Male And Female Mice With Injury Induced Discogenic Back Pain**

Yuzhang Liu; Kelly Serna Vasco; Maria Rincon Benavides; Mary Heimann; Khady Diop; Fangli Zhao; Candice Askwith; Tatiana Cuellar Gaviria; Natalia Higueta-Castro; Devina Purmessur (Walter)

**Tuesday, March 31, 2026**

8:00 AM - 9:00 AM

Room #: E219 CD

**55 Infection - Biomarkers and Outcomes/Treatment and Therapeutics**

Moderators – John Hamilton and Lauren Priddy

8:00 AM

Paper No. 291

**Reduced Reinfection Rate With Intraosseous Vancomycin Administration At Reimplantation In Two-stage Revision Total Knee Arthroplasty**

Kwan J. Park; Jennifer W. Liu; Colin A. McNamara; Thomas C. Sullivan; Austin E. Winger; Timothy S. Brown; Terry A. Clyburn; Stephen J. Incavo

8:10 AM

Paper No. 292

**Distinct Host Metabolic Signatures As Biomarker Candidates In *S. Aureus* Versus *S. Epidermidis* Fracture-related Infections**

Claudia Siverino; Theresa Schiemer; Jingzhi Fan; Nikola G. Matusevica; Jan Puetzler; Andrej Trampuz; Kristaps G. Klavins; Thomas Fintan Moriarty

8:20 AM

Paper No. 293

**Metabolic Reprogramming Of Synovial Macrophages As A Therapeutic Target In *Mrsa* Septic Arthritis**

Donghao Gan; Hyuk-Kwon Kwon; Will Jiang; Francis Lee

8:30 AM

Paper No. 294

**Diabetes Accelerate Bone Loss, Implant Failure, And Infection Persistence In Periprosthetic Joint Infection**

Yingfang Fan; Baiqi Pan; Fawaz Ben Malick; Keita Fujino; Philip Ezekiel Tan; Yiwei Yan; Orhun Muratoglu; Ebru Oral

8:40 AM

Paper No. 295

**Fibroadiipogenic Progenitors Possess Endogenous Antimicrobial Properties In An Age-Dependent Fashion**

Alex Youn; Aboubacar Wague; Kevin Liu; Vayun Chugh; Justin Lau; Hanzhi Zhang; Nesa Milan; Sankalp Sharma; Leila Hennessy; Sanvi Sharma; Mia Schraith; Monica Moore; Dustin Snapper; Kazuhito Morioka; Xuhui Liu; Brian Feeley; Chelsea Bahney

8:50 AM

Paper No. 296

**Elucidating The Role Of *S. Aureus* Proteases In Fibrin Ring Degradation During Sitafloxacin Eradication Of Staphylococcal Abscess Communities**

Levy A. Sominsky; Karen L. De Mesy-Bentley; Gowri Muthukrishnan; Chao Xie; Edward M. Schwarz

**Tuesday, March 31, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom CD

**56 Therapeutic Approaches for Osteoarthritis**

Moderators - Tanvir Faisal and Dominik Haudenschild

9:15 AM

Paper No. 297

**Senescent Bone Marrow Adipocytes Drives Subchondral Alterations In Metabolic Syndrome-associated Osteoarthritis**

Kangping Song; Jiekang Wang; Ke Shen; Xu Cao; Mei Wan

9:25 AM

Paper No. 298

**Vagus Nerve Stimulation Suppresses Local And Systemic Inflammation And Alleviates The Post-traumatic Osteoarthritis Pain In Young And Old Mice**

Shivmurat Yadav; Lysie Morris; Gabby Dyson; Montana Barrett; Pratibha Dube; Nicholas Hanebutt; Cindy Brawner; Stavros Stavrakis; Matlock A. Jeffries; Timothy M. Griffin; Mary Beth Humphrey

9:35 AM

Paper No. 299

**Decoupling Glucocorticoid Benefit From Cartilage/nucleus Pulposus Toxicity Via Tau-cxcl12 Axis**

Zhongze Yuan; Zonghao Li; Xiaohong Kong; Wenyu Fu; Chuan-ju Liu

9:45 AM

Paper No. 300

**Cartilage Protection With A Tissue-penetrating Hydrogel Depends On Meniscus Rehealing In A Rat Mmt Model**

Hanna Solomon; Samir Chihab; Lauren Foster; Maddie Hasson; Colleen Oliver; Jarred Kaiser; Hicham Drissi; Richard Danilkowicz; Thanh Doan; Jay M. Patel

9:55 AM

Paper No. 301

**The Effect Of Low- And Moderate-intensity Exercise On Post-traumatic Osteoarthritis Progression After Acl Rupture In Mice**

Yu-Yang Lin; I-Shin Ju; Sophie Orr; Benjamin Osipov; Cassandra Lee; Gabriela Loots; Blaine Christiansen

10:05 AM

Paper No. 302

**Collagen-derived Macropeptides Rapidly Penetrate Articular Cartilage And Associate With Extracellular Collagen**

Aiyana G. Fortin; Salman O. Matan; Spencer M. Witt; Kelly E. Buddin; Carl R. Flannery; Lawrence J. Bonassar

**Tuesday, March 31, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom A w/ Zone

**57 Novel Biomaterials for Hard and Soft Tissue Repair and Clinical Applications**

Moderators – Chi Ma and Abiraman Srinivasan

9:15 AM

Paper No. 303

**A Novel Rat Model Of Caudal Spine Metastasis Demonstrates Therapeutic Efficacy Of An Anticancer Pmma Bone Cement**

Ateeque Siddique; Saber G. Darband; Michael H. Weber; Lisbet Haglund; Derek Rosenzweig

9:25 AM

Paper No. 304

**Hyaluronan-coated Aligned Collagen Hydrogel Stabilizes Intervertebral Discs Via Fibrotic Remodeling Of The Annulus Fibrosus**

Akash Yadav; Ankush Dewle; Gyanoday Tripathi; Hemant Kumar; Akshay Srivastava

9:35 AM

Paper No. 305

**Topical Hyaluronic Acid-metformin Conjugate Hydrogel Enhances Healing Of Cold-induced Skin Injury In Rats**

Vasyl Pastukh; Jianying Zhang; Liyang Chen; Celina Zhao; James Wang

9:45 AM

Paper No. 306

**Surface Treatment Of 3D Printed Porous Ti6Al4v Implants By Ultraviolet Photofunctionalization For Improved Osseointegration**

Chuan Yin

9:55 AM

Paper No. 307

**Toxicity Risk Associated With Hip Implants On Obese Population: Cobalt Ions On Systemic Adipocyte Function**

Katherine Elbert; Rukshini Venkatesan Bharathi; Mareeswari Paramasivan; Abeer Mohamed; Mark Barba; Mathew Mathew

10:05 AM

Paper No. 308

**Long-term Outcome And Survivorship Of Porous Tantalum Acetabulum Components In Complex Primary And Revision Total Hip Arthroplasty: A Ten To Twenty Year**

Lawrence CM Lau; Alex Wong; Hongjian Hu; Thomas Leung; Michelle Luk; Lewis Chan; Amy Cheung; Henry Fu; Peter Chiu

**Tuesday, March 31, 2026**

9:15 AM - 10:15 AM

Room #: Ballroom B w/ Zone

**58 Clinical Research in Spine**

Moderators – Morgan Giers and Lisbet Haglund

9:15 AM

Paper No. 309

**Chronic Low Back Pain Is Associated With Accelerated Epigenetic Aging**

Noah Bonnheim; Pedro Baldoni; Harsha Nagar; Gina McKernan; Anton Bowden; Jeffrey Lotz; Aaron Fields; Gwendolyn Sowa; Nam Vo

9:25 AM

Paper No. 310

Moved to 159A – Sunday at 10:15 AM

9:35 AM

Paper No. 311

**Polygenic Risk Score For Prediction Of Ossification Of The Posterior Longitudinal Ligament**

Yoshinao Koike; Masahiko Takahata; Shiro Ikegawa; Chikashi Terao; Tsutomu Endo; Norimasa Iwasaki

9:45 AM

Paper No. 312

**Magnetic Resonance Imaging And Patient Reported Outcome Comparisons Between Individuals With Chronic Low Back Pain And Asymptomatic Controls**

Jordan Ryan; Matthew Hancock; David T. Fullwood; Ulrike H. Mitchell; Anton Bowden

9:55 AM

Paper No. 313

**Anterior Cervical Discectomy And Fusion Versus Cervical Disc Arthroplasty For Cervical Degenerative Disc Disease: Alarming Rates Of Bias**

Joshua Davood; Henry Avetisian; Daniel Rusu; Marco Napolitano; Joshua Khorsandi; Apurva Prasad; Joseph Borna; Joseph Noorvash; Nicole Kahen; Aidan Lindgren; William J. Karakash; Ram K. Alluri

10:05 AM

Paper No. 314

**Distinct Pain Distributions Among Patients With Chronic Low Back Pain Are Associated With Differences In Physical Function And Movement Quality: A Cross-sectional Study Of Pain Maps And Biomechanics**

Aidan J. Foley; Girish Viraraghavan; Elisabetta de Rinaldis; Jonathan Varcados; Erin Archibeck; Karim Khattab; Shahabeddin Yazdanpanah; Jeffrey Lotz; Andrew Bishara; Jeannie Bailey

**Tuesday, March 31, 2026**

9:15 AM - 10:15 AM

Room #: E219 AB

**59 Tumors - Crosstalk in Cancer**

Moderators - Camille Sullivan and Stefaan Verbruggen

9:15 AM

Paper No. 315

**Metastatic Bone Disease Is Associated With Muscle Loss And Reduced Survival In Kidney Cancer**

Jon-Luc Poirier; Samuel T. Jines; Libbie M. Silverman; Anuradha V. Kambrath; Daniel Wurtz; Teresa A. Zimmers; Christopher D. Collier

9:25 AM

Paper No. 316

**Ikk-16 Inhibits Primary Tumor Growth And Metastatic Progression In Chondrosarcoma Via Nf-κB Pathway Suppression**

Aron Mebrahtu; Ariana Matarangas; Alexander Colón; Ava Strohmeyer; Nicholas Guardino; Kevin Betsch; Eijiro Shimada; Jason Somarelli; Benjamin Alman; Julia Visgauss

9:35 AM

Paper No. 317

**Immunotherapy Of Chondrosarcoma With Nanopiece Delivery Of Antisense Oligonucleotide Against MiR-181a Targeting Tumor Macrophage**

Yan Xiang M. Shao; Veer Rege; Amol Rathore; Jing Ding; Jesse L. Hart; Yajun Liu; Richard Terek; Qian Chen

9:45 AM

Paper No. 318

**Cold Atmospheric Plasma As A Local Therapy For Breast Cancer Bone Metastases: Evidence From 3d Bioprinted Models And SRG Rat Xenografts**

Laura Bouret; Ateeque Siddique; Jean-Baptiste Billeau; Michael Weber; Stephan Reuter; Derek Rosenzweig

9:55 AM

Paper No. 319

**Mechanisms Of Radiation-Induced Musculoskeletal Tissue Fibrosis And Neuromuscular Dysfunction**

Alex G. Lambi; Brendan Hilliard; Frank Liu Chen; Lewis Bright-Rowe; Ryan Tomlinson; Mary Barbe

10:05 AM

Paper No. 320

**The Role Of TGF- $\beta$  In Radiation-Induced Pain Driven By Osteoclast-Neuron Crosstalk**

Jeffrey A. Foster; Sun H. Park; Joseph Moore; Kaitlyn E. Reno; Alicia Costa-Terryll; Jeffrey S. Willey

**Tuesday, March 31, 2026**

9:15 AM - 10:15 AM

Room #: E219 CD

**60 Intervertebral Disc - Regenerative Strategies and Mechanics**

Moderators - Makarand Risbud and Simo Tang

9:15 AM

Paper No. 321

**Directed Differentiation Of Human Ipscs Into Notochordal-like Cells And Mapping Acid-tolerance Programs In Nucleus Pulposus Cells**

Tynhinane Hamidouche; Dean Roell; Yuanzhang Tang; Karthik Parnika; Julia Sheyn; Dmitriy Sheyn

9:25 AM

Paper No. 322

**Examining The Role Of CCR2 In Persistent Intervertebral Disc Inflammation**

Madeleine D. Gordon; Mark (Min Kyu) Kim; Daniella V. Davia; Nadeen Chahine

9:35 AM

Paper No. 323

**Improved Long-term Efficiency Of Rnai Using Cationized Gelatin Nanospheres: Raptor Knockdown Targeting Selective Mtorc1 Inhibition As A New Prevention Strategy For Intervertebral Disc Degeneration**

Yoshiaki Hiranaka; Takashi Yurube; Taichi Washisaka; Naotoshi Kumagai; Yoshiki Takeoka; Yutaro Kanda; Kohei Kuroshima; Masahiko Furuya; Daisuke Nakagawa; Kunihiko Miyazaki; Kenichiro Kakutani; Ryosuke Kuroda; Yasuhiko Tabata

9:45 AM

Paper No. 324

**Activation Of Hedgehog Signaling Reverses Intervertebral Disc Degeneration And Associated Pain And Sensitization In Adult Mice**

Ravij Mehta; Kathleen Vincent; Jacqueline Bundock; Andrew P. Hallmark; Danilo Antonio Correa Pinto Junior; Todd J. Albert; Chitra L. Dahia

9:55 AM

Paper No. 325

**Impact Of Degeneration On Diurnal Viscoelasticity Of Human Intervertebral Discs: Implications For Osmotic Kinetics**

Jordin T. Marshall; Zachary Osborn-King; Devina Purmessur (Walter); Benjamin Walter

10:05 AM

Paper No. 326

**In Vivo Quantification Of Disc Mechanics In An Asymptomatic Aging Population Using MRI**

Harrah R. Newman; John M. Peloquin; Kyle D. Meadows; Edward J. Vresilovic; Dawn M. Elliott