POSTER SESSION 1 – (PS1)
Exhibit and Poster Hall (West and Central Hall)

Poster displayed Saturday, February 5 and Sunday, February 6

Presenting Authors are asked to be present the following days to discuss posters.
Saturday, February 5 (EVEN Poster numbers) 10:15 AM – 11:15 AM
Sunday, February 6 (ODD Poster numbers) 10:15 AM – 11:15 AM

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Ultrasound-triggered Vancomycin Release From A Novel Prophylactic Spinal Device
Lauren J. Delaney; Selin Isguven; Quezia Lacerda; Priscilla Machado; Noreen J. Hickok; Steve M. Kurtz; Flemming Forsberg

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Edidiong Essien; Shreya Vattem; Kai-yuan Cheng; Geoffrey Van Thiel; Mathew Mathew; Divya Bijukumar

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Injectable Thermosensitive Hydrogel Containing N-terminal Anxa1 A2-26 Peptide For Local Treatment Of Pathological Bone Resorption Associated With Inflammation
Hend Alhasan; Alaa Terkawi; Mahmoud M. Abd Elwakil; Gen Matsumae; Taku Ebata; Yoshio Nishida; Tomohiro Shimizu; Shunichi Yokota; Daisuke Takahashi; Hideyoshi Hideyoshi; Norimasa Iwasaki

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Micro-thin Hydrogel Coating Integrated In 3D Printing For Spatiotemporal Delivery Of Bioactive Small Molecules
Md Sarker; Zain Siddiqui; Vivek Kumar; Chang H. Lee

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Application Of Magnetic Particle Imaging To Assess Nanoparticle Localization To Cartilage
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Efficacy Of Saline Wash Plus Antibiotics Doped Polyvinyl Alcohol (pva) Composite (pva-van/tob-p) In A Mouse Pouch Infection Model
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Joshua Choe; William Murphy

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**Bacteriophage-containing Biodegradable Microsphere Technology To Treat Osteomyelitis**
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Lida Moradi; Chuanju Liu

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**Immunomodulatory Hydrogels For Bone Regeneration In Response To Bisphosphonate-related Osteonecrosis Of The Jaw**
Katherine H. Griffin; Jamal S. Lewis; Kent Leach

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Hematopoietic Stem Cell Repopulation And Inflammation-associated Osteoclastogenesis Following Murine Limited-field Radiotherapy
Megan E. Oest; Ashley R. Sweeney-Ambros; Timothy A. Damron
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*Lymphatic Secretome Negatively Regulates Bone Cell Differentiation*
Ernesto Solorzano; Takhar Kasumov; Michael Kelly; Fayez Safadi

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*Bone - Growth, Development and Aging*

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*Diversity Of Prx1 Stem/progenitor Cells And Their Regulation For Bone Regeneration*
Yu Liu; Adrian Ilinski; Louis Gerstenfeld; Beth Bragdon

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*Movement-induced Mechanical Stimuli Determine Joint Shape In Regenerating Axolotl Forelimbs*
Ester Comellas; Johanna E. Farkas; Giona Kleinberg; Katlyn Lloyd; Thomas Mueller; Timothy J. Duerr; Muñoz J. Jose; James R. Monaghan; Sandra J. Shefelbine

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*Association Of AKAP11 Polymorphism With Bone And Muscle Phenotypes*
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*Disrupting Linc Complex Decreases Mesenchymal Stem Cell Proliferation By Impeding Cell Cycle Progression*
Sean Howard; Daniel Conway; Gunes Uzer

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*Effects Of Mechanical Challenge And Disruption Of Mechanical Signaling On Nucleotide Excision Repair In Mesenchymal Stem Cells*
Anamaria G. Zavala; Gunes Uzer

**Poster No. 454**

*LRP5 Variants Associated With Bone Quality Measures In Young Adults*
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*ZBTB40 Polymorphisms Associated With Bone Quality And Strength Measures In Young Healthy Adults*
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Lgr6 Is Necessary For Attaining Peak Bone Mass And Regulates Osteogenesis Through Differential Ligand Use
Vikram Khedgikar; Julia Charles; Jessica Lehoczky

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A Prospective Analysis Of Skin And Serum Advanced Glycation Endproduct Devices In Healthy Volunteers
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Stephanie Farhat

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Deletion Of Phlpp2 In LysM-Cre Expressing Myeloid Lineage Cells Enhances Cortical Thickness
Ismael Y. Karkache; David HH Molstad; Elizabeth W. Bradley; Kim Mansky

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Senolytic Agents For The Rescue Of Osteogenic Capacity Of Bone Marrow Derived Cells
Robert Gresham; Jon Copp; Mark Lee; Kent Leach

PS1-008
Bone - Injury and Healing

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Diagnostic Fracture Stiffness Quantification By Direct Electromagnetic Coupling
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*Sagittal Pelvic Posture In The Standing Position In Patients With Post-collapse Stage Osteonecrosis Of The Femoral Head*

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A Radiographic Analysis Of The Outcomes And Complications After The Open Latarjet Procedure: A Systematic Review
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Omar A. Selim; Koichi Nakagawa; Chunfeng Zhao

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Too Much Too Soon? Functional And Metabolic Impairments After Early Rehabilitation In A Model Of Volumetric Muscle Loss Injury
Alec M. Basten; Christiana J. Raymond-Pope; Jacob R. Sorensen; Jarrod A. Call; Sarah M. Greising

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Adwin Denasty; Sean Pickard; Addisu Mesfin

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Knockdown Of Decorin And Biglycan Immediately Following Tendon Injury Significantly Alters Gene Expression And Fibril Morphology, With Minimal Effects On Mechanical Properties
Joseph B. Newton; Stephanie N. Weiss; Christelle Darrieutort-Laffite; Courtney A. Nuss; David E. Birk; Louis J. Soslowsky

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Regenerative MRL/MpJ Tendon Cells Exhibit Sex Differences In Morphology, Proliferation, And Cell-Mediated Remodeling Under 3D Culture In Vitro
Jason C. Marvin; Molly E. Brakewood; Nelly Andarawis-Puri

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How Do Muscle Forces During Everyday Life Impact Tendon Strain? Quantifying Tendon Strain And Muscle Forces Continuously During Dynamic Movements In Vivo
Fransiska M. Bossuyt; Tim Leonard; Sarah Abramovic; Michael W. Scott; Andrew Sawatsky; Walter Herzog

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Delayed Inhibition Of Plasminogen Activator Inhibitor-1 Leads To Improved Organization Of Fibrotic Scar Following Achilles Tendon Injury In Mice
Tessa Phillips; Zachary Tata; Syeda Lamia; Daniel A. Lawrence; Adam C. Abraham; Megan L. Killian

Poster No. 2185
Senolytic Treatment Reduces Expression Of Tendon Cellular Senescent Markers
Samantha J. Przybelski; Tamar Tchkonia; James L. Kirkland; Anne Gingery

POSTER SESSION 2 – (PS2)
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Poster displayed Monday, February 7 and Tuesday, February 8

Presenting Authors are asked to be present the following days to discuss posters.
Monday, February 7 (EVEN Poster numbers) 10:15 AM – 11:15 AM
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Biomaterials - Controlled Release

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Optogenetic TGF-β Signaling For Multilineage Mesenchymal Differentiation Of Human iPSCs
Josephine Wu; Gordana Vunjak-Novakovic

Poster No. 1222
Development Of Scaffold-based Platform For Simultaneous Delivery Of Microrna For Treatment Of Large Volume Bone Defects
Joanna M. Sadowska; Monika Ziminska; John Redmond; Nicholas Dunne; Helen McCarthy; Seth Donahue; Fergal O'Brien

Poster No. 1223
CHT/P8CD-SHP099 Layer-by-layer Polyelectrolyte Films To Inhibit Osteolysis
Jillian Glasser; Caitlin Barrett; Douglas Moore; Dioscaris Garcia; Wentian Yang; Anita Shukla; Valentin Antoci

Poster No. 1224
Tunable Release From Particle-loaded Hydrogels For Multiple Therapeutics
Mehmet D. Asik; Ashlyn R. Masterson; Ebru Oral

Poster No. 1225
Polymer Membrane Around Chitosan Hydrogel Containing Fosfomycin Impairs Treatment Of Implant-based Osteomyelitis
Luke J. Tucker; Malley A. Gautreaux; Xavier J. Person; Lauren B. Priddy

Poster No. 1226
Physiomimetic Biocompatibility Evaluation Of Direct Metal Printed Bioabsorbable Implants
Holger Jahr; Yageng Li; Prathyusha Pavanram; Amir Zadpoor; Thomas Pufe

Poster No. 1227
Photopolymerized Copolymers Of Polyethylene Glycol (PEG) And Polylactic (PLA) And Glycolic Acid (PGA) Gels For Dual Drug Delivery
Mehmet D. Asik; Ashlyn R. Masterson; Ebru Oral

Poster No. 1228
Antibiotic-loaded Ultrahigh Molecular Weight Polyethylene (UHMWPE)
Sashank Lekkala; Jaynie Criscione; Keith Wannomae; Amita Sekar; Ebru Oral

Poster No. 1229
High Efficiency Delivery Of Nucleic Acid Cargo To Chondroprogenitor Cells By Stabilizing Non-covalent Assembly Of Nanopieces Delivery Vehicle With Counter-ions
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Poster No. 1230
Evaluation Of The Osteogenic Potential Of A Novel Drug Eluting Carrier In A Lapine Posterolateral Fusion Model
James Johnson; Kevin Labus; Christian Puttlitz; Kirk McGilvray; Daniel Regan; Katie Sikes; Jeremiah Easley; Bryan S. Margulies; Benjamin Gadomski

Poster No. 1231
Antimicrobial Activity Profile Of Analgesic-eluting Ultrahigh Molecular Weight Polyethylene
Amita Sekar; Sashank Lekkala; Andrew Thomson; Jamie E. Collins; Ebru Oral

Poster No. 1232
Evaluation Of A Novel Drug Eluting Bone Graft In A Lapine Posterolateral Fusion Model
James Johnson; Kevin Labus; Christian Puttlitz; Kirk McGilvray; Daniel Regan; Katie Sikes; Jeremiah Easley; Bryan Margulies; Benjamin Gadomski

Poster No. 1233
Modeling Early Post-traumatic Changes In Articular Cartilage Using Human Cell-based Hydrogel Constructs
Chunrong He; Zhong (Alan) Li; Jian Tan; Karen L. Clark; Hang Lin; Peter Alexander

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Biomaterials - Orthopaedic Implant Materials

Poster No. 1234
Is It Time To Review The Shear Strength Requirements For Porous Implant Surfaces?
Ilona Hoffmann; Hiroyuki Takahashi
Poster No. 1235
Retrieval Analysis Of Second Generation Highly Crosslinked Polyethylene Used In Total Joint Arthroplasty
Shine Tone; Masahiro Hasegawa; Yohei Naito; Giuseppe Pezzotti; Akihiro Sudo

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Silver-based Antibacterial And Antibiofilm Nanostructured Coatings
Gabriela Graziani; Daniele Ghezzi; Martina Cappelletti; Julietta V. Rau; Enrico Sassoni; Marco Boi; Francesco Valle; Nicola Baldini

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Nanoscale Wear And Tribocorrosion Of Cocrmo Alloy Using Atomic Force Microscopy
Yangping Liu; Annsley Mace; Jeremy Gilbert

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Radiolucent Zones Of Biodegradable Magnesium-Based Screws In Children And Adolescents - A Radiographic Analysis
Maximilian M. Delsmann; Julian Stuerznickel; Constantin Schmidt; Michael Kertai; Ralf Stuecker; Michael Amling; Tim Rolvien; Martin Rupprecht

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A Novel Method Of In-situ Activation Of Synthetic Hydroxyapatite Particles For Improved Bone-implant Integration
Deepak Bushan Raina; Linnea Arvidsson; Elin Törnquist; Yang Liu; Alessandro Tengattini; Corina Vater; Stefan Zwingenberger; Hanna Isaksson; Lars Lidgren; Magnus Tagil

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Advancing Bone Tissue Engineering Through DBM Fibers As A Scaffold For Mineralization
Mary E. Kundrat; Peter Supronowicz; Jimmie Bullock; Stephen St John; Jingsong Chen

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A Patient-specific, 3D-printed Regenerative Bone Implant For Hip Dysplasia Treatment
Miguel Castilho; Nasim Golafshan; Willemsen Koen; Firoz Kadumudi; Elke Vorndran; Alireza Dolatshahi-Pirouz; Harrie Weinans; Bart van der Wal; Jos Malda

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Macroscopic Analysis Of Fixed-bearing Posterior Stabilizec TKA Retrieved Inserts
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3D Printing Of Titanium Surface Topography And Human Osteoblast Viability
Timothy L. Norman; Sarah G. Seman; Grant Trautman; Matthew Shomper; Rocco J. Rotello

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In Vivo Studies Of Additive Manufactured Bioabsorbable Magnesium Scaffolds In A Rabbit Femur Model
Juncen Zhou; Donghui Zhu

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**Semaphorin 3A Restores Osseointegration Of Titanium Implants In Type 2 Diabetes Rats**
Jingyao Deng; David Cohen; Zvi Schwartz; Barbara Boyan

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**Is Appropriate Implant Sizing For Distal Radius Fractures Important: A Biomechanical Study**
Natalia McIver; Christina Salas; Jorge Orbay; Nathan Menon; John Heifner; Deana Mercer

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**Long-term (5-million Cycles) Wear Properties Of A Novel Biomaterial Against Cartilage**
Herb Schwartz; Jacob Alumbaugh; Stone Miguel

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**Post-deformation Shape Recovery Behavior Of Compressed Ultra-high Molecular Weight Polyethylene**
Lucas G. de Moura; Carlos R. de M. Roesler; Eduardo A. Fancello; Edison da Rosa; Gean Vitor Salmoria

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**Is Fretting Corrosion Damage A Concern In Titanium-backed Ceramic-on-Ceramic Liners?**
Daniel W. MacDonald; Luis Ramos Peralta; Eric Ouellette; Gregg R. Klein; Arthur Malkani; Michael Mont; Steven M. Kurtz

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**Volumetric Availability - An Analysis On Osteoblast On-growth Availability Of 3D Printed Titanium Surface Topography**
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**Effect Of Exosomes On Chondrogenic Potential Of Rabbit Tracheal Chondrocytes Cultured In Hydrogel**
Dan Li; Matthew I. Saleem; Pooja Swami; Andrew Wong; Haixiang Liang; Andrew Ko; Daniel Grande

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Anna-Laura Nelson; Gianluca Fontana; Johnny Huard; William Murphy; Nicole Ehrhart; Chelsea Bahney

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**Serum Cytokine Profile In Women And Men With A Total Joint Replacement**
Lauryn Samelko; Marco Caicedo; Joshua Jacobs; Nadim Hallab

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**Engineered Hierarchical Surface Roughness Regulates Mesenchymal Stem Cell Spreading, Proliferation, And Differentiation On Titanium Implants**
Su-Jin Heo; Ali Kiapour; Lewis Harrison; Saeed Ahmed; Brendan Stoeckl; Yujia Zhang; Matthew Begley; Hunt Jessee; Robert Mauck

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A New Outlook On The Acetabular Liners Damage Assessment And Performance Analysis
Lucas Kurth de Azambuja; Enrico Baldessar Fava; Renir Damasceno; Patricia Ortega Cubillos; Gean Vitor Salmoria; Carlos Rodrigo Roesler

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Anisotropy In Fused Filament Fabrication (FFF) Printed Fibretuff For Synthetic Bone Models
Abigail Tetteh; Steven M. Kurtz

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Antimicrobial Properties Of Poly(methyl Methacrylate) Bone Cement Incorporating A Borate Bioactive Glass Filler
Kara A. Hageman; Graham A. Funk; Terence E. McIff

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Corrosion Behavior Of Implant Alloys Used In Total Shoulder Arthroplasties
Daehan J. Yi; Mozart Neto; Deborah Hall; Bianca Romay; Jennifer L. Wright; Simona Radice; Gregory Nicholson; Grant E. Garrigues; Robin Pourzal

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Elution Kinetics Of A Small Molecule From A Novel Osteogenic Bone Graft Material
Bryan S. Margulies

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Single-cell Transcriptional Atlas Reveals The Promotion Of Hydroxyapatite Related Bone Regeneration By PCDH10+ MSCs
Zhiyu Zhou; Peng Guo; Xizhe Liu; Penghui Zhang; Zhongyuan He; Manman Gao; Shaoyu Liu

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Nanoengineered Injectable Collagen/chitosan Hydrogels With Single Wall Carbon Nanotubes For Load Bearing Bone Defects
Kulwinder Kaur; Ciara Murphy

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Magnesium Phosphate Granules Support Bone Regeneration In A Large Animal Model
Lena Marie Sophie Schröter; Friederike Kaiser; Svenja Emmi Catherine Stein; Benjamin Krüger; Uwe Gbureck; Anita Ignatius

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Development And Characterization Of A Calcium Phosphate-collagen Matrix Bone Graft With Needle-shaped Submicron Surface Topography For Spinal Fusion
Nathan W. Kucko; Inazio Arriola Alvarez; Charlie Campion; Florence Barrère-de Groot

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Autograft-Like Porous Fluorapatite Bone Scaffolds
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**Bone Regenerative Capacity Of 3D Printed Bioactive Ceramic Scaffolds Coated With Bioactive Molecule: Dipyridamole**
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**Apatite-Based, Antimicrobial, Engineered Bone Scaffolds**
Samantha Steyl

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Sara Hassouna Elsayed; Ming Yan; Davide Corbetta; Hani Awad; Matthew Allen

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**3D Bioprinted Hybrid Barrier Construct For Bone Healing In Inflammatory Conditions**
Zeena Qiryaqoz; Adil Akkouch

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Michael J. Voor; Elizabeth Mattingly; Garrett Russell

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**3D Electroconductive Scaffold For Bone Regeneration**
Adil Akkouch; Mitchell Kenter; Keith Kenter

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**Development Of An Extracellular Matrix-based Multiphasic Scaffold System For Rotator Cuff Repair**
Zizhao Li; Se-Hwan Lee; Dong Hwa Kim; Shreya Mondal; Erik Nimmer; Lucy Hederick; Richard Tran; Josh Baxter; Yongho Bae; Jason Burdick; Robert Mauck; Su-Jin Heo

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Haley K. Brouwer; Andrea M. Matuska; Anish Kadakia

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Grace V. Gilbert; Andrew Simon; Alec Fisher; Parker Johnsen; Samantha Weiss; David Fuller

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Tunable Physical And Soluble Cues Synergistically Enhance Tenocyte Migration
Robert N. Kent; Mohamed Said; Megan E. Busch; Ariane Tsai; Daniel L. Matera; William Y. Wang; Samuel J. DePalma; Harrison L. Hiraki; Megan L. Killian; Adam C. Abraham; Ariella Shikanov; Brendon M. Baker

Design And Biomechanical Characterization Of Composite Lateral Meniscus Scaffold
William Pfaff; Andrzej Brzezinski; Peter Filtes; Matthew Nasra; Michael Simon; Rae Tarapore; Charles Gatt; Michael Dunn

Slow Continuous Stretch And Cyclic Loading Differentially Drive Ligament-to-Bone Enthesis Maturation
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A Triphasic Vasculo-osseous-chondral Construct To Model The Osteochondral Complex In Physiological And Pathological Conditions
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Developing A Soft-hard Composite Scaffold Using Electrospinning And 3D Printing
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Effects Of Cell Seeding Technique And Cell Density On BMP-2 Production In Transduced Human Mesenchymal Stem Cells
Kevin Collon; Jennifer A. Bell; Matthew C. Gallo; Stephanie Chang; Osamu Sugiyama; Jay R. Lieberman

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A Tale Of Two Loads: Regional Variation And Inflammation In Meniscus Mechanoreponsive Pathways Using Two Models Of Mechanical Loading
Benjamin Andress; Rebecca Irwin; Amy McNulty

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MR T1p And T2 Of Meniscus 10 Years After Anterior Cruciate Ligament Reconstruction
Dongxing Xie; Richard Lartey; Sibaji Gaj; Jeehun Kim; Mei Li; Brendan L. Eck; John Murray; Carl S. Winalski; Faysal Altahawi; Morgan H. Jones; Laura J. Huston; Kevin D. Harkins; Lindsay Merrin; Michael V. Knopp; Christopher C. Kaeding; Kurt P. Spindler; Xiaojuan Li

Poster No. 1890
Mononuclear Leukocytes Induce Catabolism Of Meniscus Tissue
Kevin Betsch; Lucas Lyons; J. Brice Weinberg; Jocelyn Wittstein; Amy McNulty

Poster No. 1891
Mononuclear Leukocytes Cause Sustained Meniscus Catabolism That Is Exacerbated By The Presence Of Lysed Red Blood Cells
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A Novel Approach To Meniscal Engineering: The Re-population And Maturation Of Channel-laden Decellularized Meniscus
Paul M. Gehret; Soheila Ali Akbari Ghavimi; Alexandra A. Dumas; Riccardo Gottardi

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Volumetric Analysis Of Calcifications In Posterior Horn Of Human Meniscus Using Micro-computed Tomography Imaging
Ville-Pauli Karjalainen; Iida Hellberg; Mikko Finnila; Elin Jonsson; Aleksandra Turkiewicz; Patrik Önnerfjord; Velocity Hughes; Jon Tjörnstrand; Martin Englund; Simo Saarakkala

Poster No. 1894
The Effect Of The Relationship Between Medial Meniscal Extrusion And Knee Alignment On The Stress Load Of The Knee -finite Element Analysis
Takuhei Kozaki; Daisuke Fukui; Ei Yamamoto; Daisuke Nishiyama; Manabu Yamanaka; Hiroshi Yamada

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Removal Of GAGs Improves Mechanical Properties And Increases Resistance To Failure In Tissue Engineered Meniscal Enthesis
Serafina Lopez; Jongkil Kim; Lawrence Bonassar

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Type V Collagen Regulates Nascent Protein Assembly And Micromechanobiology Of The Meniscus Pericellular Matrix
Chao Wang; Su-Jin Heo; Claudia Loebel; Jason A. Burdick; X. Lucas Lu; Robert L. Mauck; Lin Han

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Effect Of Solute Size On Partition Coefficient In Porcine Meniscus
Andy Morejon; Francesco Travascio; Alicia Jackson

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Joint Kinematics Via MRI Are Partially Restored With Repair Following Meniscus Injury In A Large Animal Model
Kyle D. Meadows; John M. Peloquin; Brendan D. Stoeckl; Adriana Barba; Edward D. Bonnevie; Sonia Bansal; David R. Steinberg; Miltiadis H. Zgonis; Thomas P. Schaer; Robert L. Mauck; Dawn M. Elliott

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Combination Of Cartilage Progenitors And Kartogenin In A Collagen I Laden Matrix For Application In Meniscus Tissue Repair
Daniel S. Yang; Daniel Betensky; Salomi Desai; Jay Trivedi; Brett D. Owens; Chathuraka T. Jayasuriya
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**Fibronectin Adherence And Physioxia Isolates A Clonogenic And Multipotent Meniscus Progenitor Cell Population From The Avascular And Vascular Regions Of The Meniscus**
Girish Pattappa; Siegmund Lang; Johannes Zellner; Brian Johnstone; Denitsa Docheva; Peter Angele; Ruth Schewior; Judith Jahns; Franziska Reischl

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**Chondrogenic Differentiation Potential Of Human Adipose-derived Mesenchymal Stem Cells In A Type I Collagen-based Meniscus Scaffold With Activated Platelet-rich Plasma Stimulation In Vitro**
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**Evaluation Of Tranexamic Acid On Meniscal Repair In A Rabbit Model**
Janice Havasy; Edward Bowen; Jonathan Yu; Vincent Yao; Ronak Patel; Alexander Piacentini; Ian Hutchinson; Yulei Liu; Xianghua Deng; Scott Rodeo

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**The Effects Of Lateral Opening Wedge Distal Femoral Osteotomy On Meniscus Allograft Transplantation: A Biomechanical Evaluation**
Simon Lee; Chris Bartolomei; Travis Turnbull; Miles Jon; Grant Dornan; Rachel Frank; Justin Brown; Armando Vidal

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**Fibrochondrocytes Rapidly Restore Phenotype And Matrix Production Capacity Following Transient Nuclear Softening Via Histone Deacetylase Inhibition**
Ryan C. Locke; Dakota L. Jones; Edward Bonnevie; Liane Miller; Sereen S. Assi; Jason A. Burdick; Su-Jin Heo; Robert L. Mauck

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**Range And Composition Of Internal And External Rotation In Individuals With TSA**
Moira Pryhoda; Sarah Walden; Thor Andreassen; Landon Hamilton; Sean Higinbotham; Casey Myers; Ignacio Crespo; David Weinstein; Kevin Shelburne

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**Relationship Between Shoulder Implant Design And Removal Difficulty During Revision Shoulder Arthroplasty**
Benjamin Black; Nicklaus Ipock; Alex Kullman; Peter Simon; Miguel Diaz; Mark Frankle; Melinda Harman

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**Central Fixation Element Type And Length Affect Glenoid Baseplate Micromotion In Reverse Shoulder Arthroplasty**
Lawrence F. Torkan; John T. Bryant; Ryan T. Bicknell; Heidi-Lynn Ploeg

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Identifying Areas Of Screw Fixation In Glenoids With Severe Glenoid Bone Loss In Shoulder Arthroplasty
Lauren Wilder; Peter Simon; Blake Eyberg; Sergio Gutierrez; Mark Frankle

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Miguel Diaz; Wilder Lauren; Roshan Melvani; Adam Hutchinson; Kaitlyn Christmas; Peter Simon; Mark Mighell; Mark Frankle

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Intraoperative Measurement Of Retroversion Does Not Predictably Restore Native Retroversion Nor Accurately Predict Postoperative Retroversion After Reverse Shoulder Arthroplasty
Ajinkya Rai; Clarissa LeVasseur; Gillian Kane; Maria Munsch; Jonathan Hughes; William Anderst; Albert Lin

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Can Variations In Humeral Version Effect Stability On Reverse Shoulder Arthroplasty: A Biomechanical Study
Alessia Lavin; Vani Sabesan; Jonathan Braman; Jeff Bischoff; Marc Bandi; Kyle Snethen

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Predictors Of Readmission And Reoperation Following Shoulder Arthroplasty In Young Patients Under 45 Years
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Radiographic And Survivorship Analysis Of A Short Humeral Stem For Total Shoulder Arthroplasty: Two-year Minimum Follow-up Results
Alexander T. Greene; Christopher P. Roche; Gabriel Larose; William Aibinder; Kenneth Faber; Howard Routman; Samuel Antuña; Joseph Zuckerman; Thomas Wright; Pierre Henri Flurin; Mandeep Virk

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Abnormal Preoperative Platelet Counts Associated With Increased Risk Of Complications Following Shoulder Arthroplasty
Kenny Ling; Matthew Kim; Kevin Kashanchi; Alireza Nazemi; David Komatsu; Edward D. Wang

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Survivorship Of Anatomic Shoulder Arthroplasty Versus Reverse Shoulder Arthroplasty: A Healthcare Database Analysis In The United States
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The Significance Of International Normalized Ratio In Predicting Complications Following Shoulder Arthroplasty
Matthew Kim; Kenny Ling; Kevin Kashanchi; Alireza Nazemi; David Komatsu; Edward Wang
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Both Morbidly Obese And Underweight Status Are Risk Factors For Complications Following Shoulder Arthroplasty
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Reverse Total Shoulder Arthroplasty Deltopectoral Versus Anterosuperior Approach Comparison
Jackson P. Harvey; Lorena Bejarano; James Heaberlin; Aimee Bobko; Michael Patetta; Dmitriy Peresada; Ye Lin; Julio Castillo Tafur; Benjamin Goldberg

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Morphology Of The Humeral Head Resection Plane During Total Shoulder Arthroplasty
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Muscle Activations During External Rotation In Patients Who Have Undergone A Reverse Total Shoulder Arthroplasty
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Rotator Cuff Tendon Healing Using Human Dermal Fibroblasts In Place Of Human Tenocytes: Histological And Biomechanical Analyses In A Rabbit Model Of Chronic Rotator Cuff Tear
Sung-Min Rhee; Ji-Hye Lee; Saewha Jeon; Jikhyon Han; Yun Hee Kim; Hyeon Jang Jeong; Joo Hyun Park; Joo Han Oh

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Part 1: Fibrogenesis After Retracted Rotator Cuff Tear Repair Compared With Non-retracted Tendon - an Animal Study
Sung-Min Rhee; Seung-Min Youn; Young Wan Ko; Tae Yoon Kwon; Yong-Koo Park; Yong Girl Rhee

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5-year Follow-up On A Prospective Randomized Controlled Study On Early Versus Delayed Rehabilitation After Arthroscopic Rotator Cuff Repair
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Correlation Of Long-term Clinical Results And Coracoid Graft Position After Modified Bristow Procedure
Masataka Minami; Yoshikazu Kida; Satoru Atsumi; Hara Kunio; Kenji Takahashi
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**Psychosocial Factors Play A Greater Role In Preoperative Symptoms For Patients With Atraumatic Shoulder Instability: Data From The MOON-Shoulder Group**
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**The Role Of The Subacromial Bursa In Rotator Cuff Tendon Injury And Healing In A Rat Model**
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Moeed Akbar; Lucy Macdonald; Lindsay Crowe; Iain McInnes; Neal Millar

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**Investigating In Vivo Biomechanical Properties Of Neonatal Brachial Plexus When Subjected To Stretch**
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**PRDM16 KO In Fibro/Adipogenic Progenitor Cells Improved Muscle Quality After Massive Rotator Cuff Tears**
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**The Influence Of Patient Sex On Outcomes Following Surgical Treatment Of Osteochondritis Dissecans Lesions Of The Elbow: A Systematic Review**
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**Humeral Head Geometry: A Cadaveric And Anatomical Analysis Of Global Offset And Intermedullary Shaft Diameter**
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**Coordination Of The Sub-regions Of The Supraspinatus And Deltoid Muscles During Shoulder Scaption: A Shear Wave Elastography Study**
Kyosuke Hoshikawa; Takuma Yuri; Hugo Giambini; Nariyuki Mura; Yoshiro Kiyoshige

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**Grasping Python-Tooth-Inspired Device For Enhanced Rotator Cuff Repair**
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**Biomechanics Of A Rotator Cuff Deficient Shoulder And The Effects Of Acellular Dermal Matrix Allograft Reconstruction Techniques**
Pranav Krishnan; Aimee Bobko; Dmitriy Peresada; Michael Patetta; Danil Rybalko; Erwin Secretov; Julio Castillo Tafur; Farid Amirouche; Jason Koh; Benjamin Goldberg

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**Influence Of The Glenoid Labrum On The Glenohumeral Joint Stability By A Finite Element Shoulder Model**
Alexandre N. Trichez Jr.; José O. R. Pécora; Arnaldo A. Ferreira Neto; Carlos R. M Roesler; Eduardo A. Fancellu

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**Analysis Of Abduction Moment Arms After Rotator Cuff Tear And Acellular Dermal Matrix Allograft Reconstruction**
Pranav Krishnan; Sonia Pradhan; Roberto L. Diaz; Aravind Athiviraham; Jason Koh; Farid Amirouche

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**Augmentation Of Plate Fixation With Suture Through The Triceps In A Comminuted Olecranon Fracture Model: A Biomechanical And Proof Of Concept Study**
Austin F. Smith; Joseph M. Kitchen; Kevin L. Harreld; Michael Voor; Jiyao Zou

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**Tears To The Rotator Crescent Area Affect Force Transmission**
Michael Smolinski; Ryan Blake; Anthony Davidson; Jamie Greenwell; Mark Carl Miller; Patrick Smolinski; Luis Carrazana-Suarez; Dimitrios Papadopoulos; Christopher Schmidt

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**Why Don't Bats Tear Their Rotator Cuffs Despite Repetitive Overhead Motion?**
Iden Kurtaliaj; Jennifer Kunes; Michael Rowley; Lynn Ann Forrester; Guy Genin; Stavros Thomopoulos

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**Comparison Of Shoulder Muscle Forces During Arm Elevation In The Scapula Plane For The Intact And Cuff Deficient Shoulder**
Aniruddh Nayak; Courtney Mason; Stefan Gabriel; David Spenciner; Marc Jacofsky

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**Therapeutic Effect Of Mesenchymal Stem Cell Transplantation On Tendon-bone Healing In Chronic Cuff Tear Model With Suprascapular Nerve Injury**
Kenichiro Eshima
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**Biomechanical Analysis Of Percutaneous Pin Configuration In The Sagittal Plane For Supracondylar Humerus Fractures**
Marc Duemmler; Kelsie Coe; Nahir Habet; Susan Odum; Michael Paloski

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**Preventing Varus Collapse In Proximal Humerus Fracture Fixation: 90-90 Dual Plating Versus Endosteal Fibular Allograft Strut**
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**Opioid Consumption After Rotator Cuff Repair And Regional Anesthesia**
Akshar Thakkar; Andrew Bare; Ashorne K. Mahenthiran; Michael Scheidt; Matthew D. Saltzman; Sanjeev Bhatia; Aaron A. Bare

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Keron WJ Rose; Nandaraj Taye; Dirk Hubmacher

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Jefferson DeKloe; Haiying Pan; Nariaki Nakamura; Yong Li

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**Excess Intramyocellular Lipid Does Not Impair Muscle Contractile Force**
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**Does Isolated Unilateral Knee Osteoarthritis Leads To Adverse Changes In Extremity Composition?**
David DeMik; Michael C. Marinier; Jacob Elkins

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Prevalence Of Sarcopenia And Sarcopenic Obesity In An Academic Total Joint Arthroplasty Practice
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Skeletal Muscle - Growth, Development and Aging

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Matthieu Huard; Xueqin Gao; Naomasa Fukase; Johnny Huard

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Novel Approach To Prevent Fatty Replacement Of Skeletal Muscle
Daniel Kopinke

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Claire J. Watson; Ernesto Morfin Montes de Oca; Imke Fiedler; LuLu K. Callies; Avery Angell Swearer; Ali R. Ahmed; Maria F. Rojas; Bjorn Busse; Yi-Hsiang Hsu; Ronald Y. Kwon

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Skeletal Muscle - Injury and Healing

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Conditional Knockout Of ECM Protein Adamtsl2 Delays Skeletal Muscle Repair After Injury
Nandaraj Taye; Dirk Hubmacher

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Skeletal Muscle PDGFRα Fibro-adipogenic Progenitor Cells Are A Source Of IL-1β In Hindlimb Ischemia-reperfusion Injury
Emily G. Parker; Kanglan Yu; Andrew Kent; Jeanene Pihkala; Meghan McGee-Lawrence; Mark Hamrick

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Jacob Parson; Gretchen Meyer
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Segmental Bone Defects Are The Primary Source Of Muscle Weakness In A Porcine Mangled Limb Model Of Volumetric Muscle Loss
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Lauren A. Hymel; Shannon E. Anderson; Thomas C. Turner; Molly E. Ogle; William Y. York; Edward A. Botchwey

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A Rodent Neuromusculoskeletal Model To Study Neurodevelopmental And Neurodegenerative Conditions
Victoria L. Volk; Dustin J. Hines; Rochelle M. Hines; Clare K. Fitzpatrick

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Comparison Of Hip Abductor Muscle Quality Evaluation Methods: Is The Whole Muscle Needed?
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Skeletal Muscle - Treatment and Therapeutics

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Yoichiro Kamada; Atsuo Inoue; Shogo Toyama; Hiroaki Inoue; Shuji Nakagawa; Yuta Fujii; Kenta Kaihara; Ryota Cha; Yuji Arai; Osam Mazda; Kenji Takahashi

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Anthony Oyekan; Clarissa LeVasseur; Jeremy Shaw; William F. Donaldson; Joon Lee; William Anderst

MRI Heating Due To Spinal Construct Screw Placement Variability
Valerie S. Coldren; David J. Nuckley

Measures Of Vertebral Endplate Bone Marrow Lesion Composition From Water-Fat MRI Improve Associations With Low Back Pain Compared With Clinical Modic Change Classification
Noah B. Bonnheim; Ann A. Lazar; Jiamin Zhou; Ravi Chachad; Nico Sollmann; Xiaojie Guo; Thomas Link; Conor O'Neill; Jeffrey C. Lotz; Roland Krug; Aaron J. Fields

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Jesse Shen; Nathalie Samson; Jerome Lamontagne-Proulx; Denis Soulet; Yves Tremblay; Sarah Bouchard; Jean-Paul Praud; Stefan Parent

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Yvonne W. Karanja; Bhushan Borotikar; Tinashe E. M. Mutsvangwa

Mechanically Induced Scoliosis Progressively Varies With Anatomic Location And Between Disc And Bone
Axel C. Moore; Adriana Barba; Harrah R. Newman; Kyle D. Meadows; Benjamin P. Sinder; Alessandra Fusco; Rachel Hilliard; Edward J. Vresilovic; Brian Snyder; Patrick J. Cahill; Thomas P. Schaer; Dawn M. Elliott

The Induction Of Posterior Instability Of Rat Spine Caused Ligamentum Flavum Hypertrophy; A Rat Model Of Lumbar Spinal Stenosis
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Spine - Injury, Healing and Pain

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The Effect Of Pedicle Screw Diameter Ratio On Rate Of Failure During Load Cycling
Farid Amirouche; Julio Castillo Tafur; Roberto Leonardo Diaz; Bingtao Xiang; Awais Hussain; Nate Koh; James Mok; Ye Lin

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Asghar Rezaei; Maryam Tilton; Maria Astudillo Potes; Li Yong; Michael Yaszemski; Lichun Lu

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Guy Fogel; Christian Yee-Yanagishita; Brooke Douglas; Nicholas Martin; Gregory Essayan; Brijesh Poojary; Yun Peng; Michael Jekir

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Poster No. 1999
A Computational Optimization Approach To Scoliosis Brace Design - Preliminary Results
Kateryna Kardash; Jesus P. Rodriguez; Miguel A. Otaduy

Poster No. 2000
The Effect Of Spinal Surgery On Spine And Walking Biomechanics In Patients With Symptomatic Lumbar Spinal Stenosis
Seyed Javad Mousavi; Andrew Lynch; Andrew White; Dennis Anderson

Poster No. 2001
Wireless In Vivo Measurement Of Tether Tension In A Porcine Model Of Scoliosis
Benjamin Sinder; Adriana Barba; Alessandra Fusco; Vincent Ruggieri; Edward Vresilovic; Jason Anari; Brian Snyder; Thomas Schaer; Patrick Cahill

Poster No. 2002
Satellite Rod Configuration (in-line Vs. Lateral) And Screw Type (Monoaxial Vs. Polyaxial) Spanning A Lumbar Pedicle Subtraction Osteotomy (PSO): A Finite Element Analysis
Niloufar Shekouhi; Ardalan S.Vosoughi; Joseph M. Zavatsky; Vijay Goel; Alekos A. Theologis

Poster No. 2003
Rod Instrumentation Order Does Not Influence Final Rod Strain In Posterior Thoracolumbar Fixation Constructs
Kyle A. McGrath; Callan M. Gillespie; Jeremy G. Loss; Robb W. Colbrunn; Swetha Sundar; Michael P. Steinmetz

Preoperative Prone Radiographs Can Reliably Determine Spinal Curve Flexibility In Adolescent Idiopathic Scoliosis
Tej Joshi; Daniel Berman; Evan Mostafa; Jaime Gomez; Regina Hanstein; Leila Mehraban Alvandi; Jacob Jacob

Increasing Posterior Instrumentation Construct Lengths Reduces Stand-alone L5-S1 Anterior Lumbar Interbody Fusion Stability
Kyle A. McGrath; Eric S. Schmidt; Jeremy G. Loss; Callan M. Gillespie; Robb W. Colbrunn; Robert S. Butler; Michael P. Steinmetz

Biomechanical Testing Of Anterior Vertebral Body Tethering Using Simvitro Robotics
A'onna M. Kelly; Alex W. Hooke; Daniel Jacobson; James Fitzsimmons; Chunfeng Zhao; Noelle Larson; Todd A. Milbrandt

Forces Transmitted Through The Endplate During Implant Trialing And Insertion Of Standalone ALIF Devices: A Cadaveric Study
Kevin Monahan; Kyle Holmberg; Jonathan Acosta; Isaac Swink; Ryan Sauber; Gary Schmidt; Alexander Yu; Boyle Cheng

Additive Manufactured Titanium Interbody Cages With Macro Pore Architecture Show Comparable Bone Formation To Peek With Graft In An Ovine Lumbar Fusion Model
Benjamin Gadomski; Kevin Labus; Christian Puttlitz; Kirk McGilvray; Howard Seim; Brad Nelson; Katie Bisazza; Jeremiah Easley; Josephine Shum; G. Hooper; Tim Woodfield

Withdrawn

Anterior Cervical Discectomy And Fusion Outcomes In Patients Who Undergo Bariatric Surgery - Does Losing The Weight Matter?
Justin Zhu; Peter Joo; William McLaughlin; Jonathan Grauer

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Poster No. 2011
Categorical Genome-wide Association Study Of Equine Degenerative Suspensory Ligament Desmitis, A Spontaneous Model Of Degenerative Tendon/ligament Injury
Mehdi Momen; Sabrina H. Brounts; Emily E. Binversie; Susannah J. Sample; Brian W. Davis; Guilherme JM Rosa; Peter Muir
Poster No. 2012

Heritability Of Degenerative Suspensory Ligament Desmitis In The Peruvian Horse, A Spontaneous Large Animal Model Of Degenerative Tendon/ligament Injury
Mehdi Momen; Nyah L. Kohler; Kiley J. Brauer; Sabrina H. Brounts; Peter Muir
Poster No. 2013

Heterogeneous Mechanical Strains Within Tissues Inhibit Its Collagen Degradation By Collagenase
Karanvir Saini; Manu Tewari; Sankyun Cho; Abdalziz Jalil; Manasvita Vashisth; Jason Andrechak; Alex Kasznel; David Chenoweth; Kazuhiro Yamamoto; Dennis Discher
Poster No. 2014

Proteomics Profile Of Synovial Fluid In Patients With ACL Tear Diverges With Patient Sex, Injury Pattern And Location Of Bone Bruise
Robert Brophy; Lei Cai; Muhammad Farooq Rai
Poster No. 2015

Dysregulated Ca^{2+} Signaling Through The Ca_{V}1.2 Ca^{2+} Channel Induces Tendon Heterotopic Ossification In Mice
Brandon Dexter; David Ciufo; Matthew Greenblatt; Hani Awad; Edward Schwarz; Brendan Boyce; Chike Cao

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Scleraxis Targeted Deletion Of Collagen XI Disrupts Mouse Patellar Tendon Structure During Postnatal Development
Matthew K. Stein; Snehal S. Shetye; Courtney A. Nuss; Ashley F. Fung; Jaclyn A. Carlson; Jordan S. Cohen; Nathaniel A. Dyment; Louis J. Soslowsky
Poster No. 2017

Spatiotemporal Distribution Of LOX And MMPS During Embryonic Craniofacial Tendon Development
Stefanie H. Korntner; Timothy Beane; Elizabeth A. Kinnard; Emily Leo; Catherine K. Kuo
Poster No. 2018

Regional FDL Tendon Development Involves Differential Pericellular Matrix Expression And Presence
Ryan J. Leiphart; Stephanie N. Weiss; Nathaniel A. Dyment; Lou J. Soslowsky
Poster No. 2019

Region And Strain-dependent Mechanics Of Supraspinatus Tendons Are Influenced By Fibril Modulus And Sliding
Biao Han; Michael DiStefano; Snehal S. Shetye; Andrew F. Kuntz; Lou J. Soslowsky
Poster No. 2020
Characterization Of Macrophages In Murine Tendon And Enthesis
Lee Song; Feifer Valia; Stavros Thomopoulos

Poster No. 2021
Phenotypic Profiling And Spatial Localization Of Resident Tendon Macrophages
Catherine Bautista; Nathaniel Dyment

Poster No. 2022
The Effect Of Advanced Glycation End-Products On Tissue Mechanics Depends On Degree Of Collagen Organization
Austin Gouldin; Jennifer Puetzer

Poster No. 2023
Medium, But Not Coating, Affects Tenocyte Culture
Eduardo Abreu; Maria Veronica Vidal

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Poster No. 2024
The Effects Of Exercise Initiation During The Immobilization Period On Tendon Healing And Shoulder Function
Haruna Takahashi; Moe Yoneno; Kei Takahata; Yuki Minegishi; Kohei Arakawa; Yuna Usami; Kenji Murata; Naohiko Kanemura; Takanori Kokubun

Poster No. 2025
CCN2 Knockout Demonstrates Enhanced Achilles Tendon Healing In Adult Mice
Danielle Sim; Kathryn Greskovich; Jocelyn Wu; Natalie L. Leong; Jie Jiang

Poster No. 2026
Collagen III Deficiency Alters Mechanical Properties And Decreases Regulation Of Fibrillogenesis Following Injury In Female Murine Tendons
Jaclyn A. Carlson; Stephanie N. Weiss; Susan W. Volk; Lou J. Soslowsky

Poster No. 2027
Decorin-associated Dermatan Sulfate Increase In Fatigue Injured Tendons Modulates Viscoelastic Tensile Properties
Patrick M. Muljadi; Hunter L. Nourzad; Rebecca Bell; Nelly Andarawis-Puri

Poster No. 2028
Intrasynovial Flexor Tenocyte-macrophage Interactions: Implications In Inflammation And Catabolism During Intrasynovial Tendon Healing
Charles M. Bowlby; Zarah Belacic; Sidney Long; Sushmitha Durgam

Poster No. 2029
Development Of A Testing System For In-vivo Rat Achilles Tendon Mechanical Loading
Patrick Williamson; Dominic Asciutto; Priyan Pathirana; Christian Avakian; Thomas Peacock; Isabella Stewart; Diana Yeritsyan; Nadim Kheir; Arun Ramappa; Joseph DeAngelis; Ara Nazarian

Poster No. 2030
**On Trauma-induced Heterotopic Ossification Of Tendon And The Role Of Tenomodulin**
Denitsa Docheva; Manuel Delgado Caceres

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**Critical Shoulder Angle And Acromion Morphology Do Not Predict Supraspinatus Tear Propagation Following An Individualized Exercise Therapy Program**
Ehab M. Nazzal; Luke Mattar; Philipp Winkler; Keishi Takaba; Adam Popchak; Sotoshi Takeuchi; Volker Musahl; Albert Lin; James Irrgang; Richard Debski

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**MiRNAs Modulate Enthesis-specific mRNA Targets And Collagen I And II Expression**
Carlos J. Peniche Silva; Rodolfo E. De la Vega; Virginie Joris; Christopher H. Evans; Elizabeth R. Balmayor; Martijn van Griensven

Poster No. 2033
**Longitudinal Tracking Of Achilles Tendon Morphology And Function In The Near-Term After Rupture And Repair**
Stephanie G. Cone; Jack A. Martin; Keith A. Knurr; Josh R. Baxter; Darryl G. Thelen

Poster No. 2034
**The Role Of Toll-like Receptors On Altered Mobility In A Murine Model Of Tendinopathy**
Emily M. Van Zeeland; Sara Wist; Kimberli Fernandez; Emma Hurley; David D. Frisbie; Kelly S. Santangelo; Katie J. Sikes

Poster No. 2035
**Increased Fibrillin-2 Is Associated With Improved 1-year Healing Outcome After Achilles Tendon Rupture**
Junyu Chen; Jin Wang; Aisha Ahmed; Paul Ackermann

Poster No. 2036
**Tendon-to-bone Healing In A CCR2 Knockout Mouse Model Of Delayed Rotator Cuff Repair**
Claire D. Eliasberg; Camila Carballo; Alex Piacentini; Janice Havasy; Yulei Liu; Marjan Khan; Sarah Caughey; Iryna Ivasyk; Scott A. Rodeo

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**CD4+ T Cells Directly Stimulate Tenocyte Migration In Vitro**
Giulia Crosio; Alice Huang

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**ACL Reconstruction With Novel Bio-Inductive Biocomposite Scaffold: A Preliminary Study**
William Walsh; Vedran Lovric; James Crowley; Dan Wills; Andrew Carter; Nguyen K. Tram; Mitchel R. Stacy; Justin Bendigo; Jeffrey Ott; Kevin Rocco
Poster No. 2039
**Slide-free, Volumetric Imaging Of Optically Cleared Mouse Paw Demonstrates Improved Healing In The Injured Digital Flexor Tendon Of The MRL/MpJ Mouse**
Melissa MacLiesh; Vincent Ching-Roa; Jenna Montague; Michael Giacomelli; Hani Awad

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**Knockdown Of Decorin And Biglycan At Time Of Tendon Injury Alters Gene Expression And Fibril Morphology**
Ashley K. Fung; Thomas P. Leahy; Stephanie N. Weiss; Sheila M. Adams; Nathaniel A. Dyment; David E. Birk; Louis J. Soslowsky

Poster No. 2041
**The Use Of Connective Tissue Growth Factor Mimics For Flexor Tendon Repair**
Hua Shen; Solaiman Tarafder; GaYoung Park; Jichuan Qiu; Younan Xia; Chang Lee; Richard Gelberman; Stavros Thomopoulos

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**Knockdown Of Decorin And Biglycan During The Early Proliferative And Remodeling Phases Of Tendon Healing Alters Gene Expression And Fibril Morphology**
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**Transcriptomic Single Cell Atlas Reveals The Tendon Progenitor Organizing Cells**
Mor Grinstein; Stephanie Tsai; Daniel Montoro; Heather Dingwall; Miho Tanaka; Terence Capellini; Jayaraj Rajagopal; Jenna Galloway

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**Evaluation Of Tendon Healing In A Mouse Model Of Elevated Serum Advanced Glycation End Products Following Tendon Injury**
Shivam H. Patel; Chad C. Carroll

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**In Vivo Unloading Of Rat Achilles Tendons Leads To A Delayed Mechanical Response And An Altered Collagen Structure**
Isabella Silva Barreto; Maria Pierantoni; Malin Hammerman; Ana Diaz; Vladimir Novak; Jonas Engqvist; Pernilla Eliasson; Hanna Isaksson

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**Anterior Cruciate Ligament Strength Changes Following A Course Of Direct Repetitive Loading In Inbred Mice**
Kaitlyn A. Colglazier; Benjamin E. Loflin; Stephen H. Schlecht

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Steeper Lateral Posterior Tibial Slope And Greater Lateral-to-medial Slope Asymmetry Correlate With Greater Preoperative Pivot-shift In Anterior Cruciate Ligament Injury
Kiminari Kataoka; Kanto Nagai; Yuichi Hoshino; Masashi Shimabukuro; Kyohei Nishida; Noriyuki Kanzaki; Takehiko Matsushita; Ryosuke Kuroda

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Altered Loading Causes Multiscale Structural Changes In Tendon
Ellen T. Bloom; Chandran Sabanayagam; Jeffrey Caplan; Justin Parreno; Dawn M. Elliott

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Collagen V Knockdown Alters Collagen Fibril Size, But Not Mechanics, In Mature Female Murine Tendons
Ryan J. Leiphart; Stephanie N. Weiss; Jaclyn A. Carlson; Patrick L. Paglia-Garcés; Lou J. Soslowsky

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Effect Of Joint Immobilization On Ligament Strength In Self-healing Model Of The Anterior Cruciate Ligament
Chiharu Takasu; Hidenoebu Terada; Takuma Kojima; Takuma Kano; Yuri Morishita; Sora Kawabata; Takanori Kokubun; Naohiko Kanemura; Kiyomi Takayanagi; Kenji Murata

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A Novel Inexpensive Technique For High-Tension Tendon Clamping With Expandable Mesh Sleeving For In Vitro Foot Biomechanics Testing
Callan M. Gillespie; Joshua L. Golubovksy; Tara F. Nagle; Jeremy G. Loss; Robb W. Colbrunn

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Development Of An Autoclavable 3D-printed Bioreactor For Axial Loading Of Tendon Explants
Sebastian Cardona Ramirez; Will Bezdol; Aaron M. Stoker; James L. Cook; Shen-Ying (Richard) Ma

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The ACL Mid-substance Changes Shape With Knee Loading
Michael A. DiNenna; Ryo Kanto; Michael P. Smolinski; Monica A. Linde; Patrick Smolinski; Freddie H. Fu

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Mucopolysaccharidosis I And VII Dogs Exhibit Impaired Anterior Cruciate Ligament Mechanical Properties
Yian Khai Lau; Rahul Gawri; Snehal Shetye; Khaled Abdoun; George Dodge; Margret L. Casal; Lachlan J. Smith

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FAK Inhibition Attenuates Increased Tendon Cell Nuclear Aspect Ratio With Applied Mechanical Strain In Situ
Defining Mechanical Injury Criteria For Soft Connective Tissues
Callan M. Luetkemeyer; Emily Y. Miller; Corey P. Neu; Sarah Calve

Urea-extracted Tendon Extracellular Matrix: Investigating Its Protein Compositions And Induced Transcriptomic Profile In Human Adipose-derived Stem Cells
Ying Rao; Rocky Tuan; Dan Wang

Osmotic Environments Tune Ex Vivo ECM Viscoelasticity By Distinct Water Uptake
Matthias R. Kollert; Martin Krämer; Nicholas Brisson; Serafeim Tsitsilonis; Taimoor H. Qazi; Jürgen R. Reichenbach; Georg N. Duda

The Missing Link: Cell-derived And Crosslinked Extracellular Matrix Is Required For Tendon Cell Mechanotransduction
Patrick K. Jaeger; Alina Dintheer; Fabian s. Passini; Jess G. Snedeker

Evaluation Of Novel Therapeutic Agents For Modulation Of The Inflammatory Response In Rotator Cuff Tendinopathy Utilizing A Mouse Model Of Subacromial Impingement
Claire D. Eliasberg; Camila Carballo; Janice Havasy; Alex Piacentini; Yulei Liu; Marjan Khan; Iryna Ivasyk; Scott A. Rodeo

The Effect Of Early Ankle Mobilization On Collagen Remodeling After Achilles Tendon Rupture And Surgical Repair
Moe Yoneno; Haruna Takahashi; Kei Takahata; Yuna Usami; Kenji Murata; Naohiko Kanemura; Takanori Kokubun

MRL/MpJ-Derived Therapeutics Elicit Repair-Associated Phenotype In Subrupture Fatigue Damaged Tendons
Monideepa Chatterjee; Hunter Nourzad; Rebecca Bell; Nelly Andarawis-Puri

Methylprednisolone Acetate Differentially Downregulates The Bioactivity Of Fibrocartilage Cells Compared To Intrabursal Flexor Tendon Cells In Response To In-vitro IL-1β
Zarah Belacic; Stasia Sullivan; Sushmitha Durgam
**Metabolic Regulation Of The Early Stages Of Intrasynovial Tendon Repair**  
Hua Shen; Ryan Lane; Shelly Sakiyama-Elbert; Stavros Thomopoulos; Richard Gelberman

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**Bone Marrow Mesenchymal Stem Cell-derived Extracellular Vesicle Secretome And Teno-chondroprotective Properties**  
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Marguerite A. Pacheco; Nelly Andarawis-Puri

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Anna-Laura Nelson; Kelsey O'Hara; Phillip Nolte; Johnny Huard; Peter Millett; Chelsea Bahney

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**Tendon Mechanical Properties Are Enhanced Via Upregulation Of Lysyl Oxidase-mediated Collagen Crosslinking**  
Phong K. Nguyen; Catherine K. Kuo

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**Tendon Tissue Repair Using Alginate-cell Cross-linked Gel**  
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Ateeque Siddique; Megan E. Cooke; Audrey Pitaru; Mina Aziz; Michael H. Weber; Derek H. Rosenzweig

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**Usefulness Of Polypropylene Mesh In Proximal Femoral Replacement For Metastatic Bone Tumors**  
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Metastatic Bone Lesions Modulate Vertebral Load-to-strength Ratio Compared To Age-, Sex-matched, Healthy Cohort
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Tamoxifen Induced Reduction Of Osteoclast Activation Mediated By Membrane-Associated Estrogen Signaling
Cydney Dennis; Jingyao Deng; David J. Cohen; Zvi Schwartz; Barbara Boyan

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Prolonged Hypercoagulability Exists In Patients With Metastatic Bone Disease Requiring Surgical Treatment For Pathologic Fractures: A Pilot Study
Lisa Yamaura; Leslie Skeith; Michael Monument; Prism Schneider

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Anneke S.K. Verbruggen; Roisin M. Dwyer; Elan C. McCarthy; Laoise M. McNamara

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The Value Of Serum BNP In Patients With Soft Tissue Sarcoma
Keisuke Yoshida; Kunihiro Asanuma; Yumi Matsuyama; Tomohito Hagi; Tomoki Nakamura; Akihiro Sudo

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Evaluation Of Intraoperative Tumor Margin In Sarcoma With Fluorescent Dye Imaging: A Preliminary Analysis Of Results
William T. Li; Sumail Bhogal; Stella J. Lee; Richard L. McGough; Kurt R. Weiss

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Complication And Reoperation Rates Following Excision Of Long Bone Versus Soft Tissue Malignancies Of The Lower Limb
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Keisuke Yoshida; Tomoki Nakamura; Takahiro lino; Yumi Matsuyama; Tomohito Hagi; Kunihiro Asanuma; Akihiro Sudo

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Radiodynamic Therapy Using Local Acridine Orange Administration Is Effective For Osteosarcoma And Breast Cancer Cell Line
Yumi Matsuyama; Tomoki Nakamura; Takahiro lino; Keisuke Yoshida; Tomohito Hagi; Kunihiro Asanuma; Akihiro Sudo

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Mithramycin A Has Modest Effects On Trabecular Microarchitecture In Skeletally Immature Mice
Melanie C. Ngo; Jason A. Horton

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Mechanical Contribution Of Cementoplasty In Long Bone Cortical Defect Subjected To Torsional Forces
Erin E. Estrada; Michael J. Poland; Chloe R. Brekhus; Quinn E. Smith; Sam E. Winston; Bernard Séguin; Vivian Ojeda; Christian M. Puttlitz; Benjamin C. Gadomski

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Complications And Reoperation Rates Following Resection Of Long Bone Versus Soft Tissue Malignancies Of The Upper Limb
Alexander M. Ballatori; Shane Shahrestani; Xiao T. Chen; Andy Ton; Lawrence R. Menendez; Nathanael D. Heckmann; Alexander B. Christ

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Purified Exosome Product In Mediating Chondrogenesis By Enhancing Proliferation, Attenuating Apoptosis, And Modulating Inflammation
Guidong Shi; Omkar S. Anaspure; Daniela D. Maltais; Ramona Reisdorf; Rodolfo De la Vega; Christopher Evans; Steven Moran; Atta Behfar; Chunfeng Zhao

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Erythromycin-doped Nanofiber Coating Enhances Osseointegration And Inhibits Staphylococcus Aureus Induced Osteolysis
Dexter Powell; Bin Wu; Paula Dietz; Therese Bou-Akl; Weiping Ren; David Markel

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Synthesis Of Mg And Sr Substituted Hydroxyapatite Following A Design Of Experiments Approach
José Rui Oliveira Rodrigues; Denata Syla; Gwendolen C. Reilly; Frederik Claeyssens; Laura Grillini; Riccardo Bendoni; Lucia Forte

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Synthesis Of Magnesium And Strontium Substituted Hydroxyapatite-Polycaprolactone Composites
Denata Syla; Jose Rodrigues; Frederik Claeyssens; Gwendolen Reilly; Lucia Lucia; Laura Grillini

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The Influence Of Micro Structured Surface Features On The Adhesion Of Synovial Fluid Induced Aggregates Of Staphylococcus Aureus
Tripti Thapa Gupta; Niraj Gupta; Paul Stoodley

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Micellized Protein Transduction Domain-bone Morphogenetic Protein-2 Accelerates Bone Healing In Rat Tibia Model Of Distraction Osteogenesis
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Bioink Material Stiffness And Composition Promote Chondrogenesis
Kari Martyniak; Maria Cruz; Thomas Kean

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Guiding Human Adipose Stem Cell (hASC) Differentiation Using Structural Cues
Thomas Jenkins; Sadhana Venkataramen; Dianne Little

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Hydrostatic Pressure-facilitated Diffusion: Application In Decellularization Of Cartilage Tissue
Mehran Kasra

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Physiochemical Effects Are Predominantly Responsible For Acidosis-induced Changes In Bone Mechanics
Margaret Easson; Stephanie Wong; Mikayla Moody; Anna Peterson; Tannin Schmidt; Alix Deymier

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Neurotransmitter Signalling Is Regulated By Mechanical Loading And Inflammation In A 3-dimensional Model Of Human Stem Cell Derived Osteocytes
Ryan Jones

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Systemic Bone Loss After Myocardial Infarction Is Not Mitigated In Complement 5aR1 Knockout Mice
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Acceleration Of Bone Growth During Early Developmental Phase In A Rat Model Of Gper1 Gene Ablation
Seungyong Lee; Sarah Galla; Venkatesha Basrur; Blair Mell; Bina Joe; Rhonda D. Prisby

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Somatic Wnt16 Protein-Truncating Mutants Induce Severe Skeletal Phenotypes In Zebrafish
Visali Sethuraman; Claire Watson; Ronald Kwon

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TRAM1 And Regulation Of Bone Mass At The 8q13.3 BMD-associated Locus
Anne Onyali; Jyoti Rai; Yi-Hsiang Hsu; Claire Watson; Ronald Kwon

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Effect Of Distortional Strain Definitions On A Fracture Healing Algorithm
George Morgan; Hana Fox; Lucas Low; Arul Ramasamy; Spyros Masouros

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Rapid Stimulation Of Chondrocyte Proliferation And Augmented Long-term Endochondral Drive In The Epiphyseal Growth Plate Exposed To Dynamic Mechanical Load
Dionysia Valkani; Behzad Javaheri; Andrew A. Pitsillides

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Compromised Perilacunar Mechanical Properties Coincide With Decreased Whole-bone Mechanical Properties And Increased Collagen Glycation In A Diabetic Mouse Model
Morgan Bolger; Tara Tekkey; David Kohn

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Synergistic Interaction Of PTH (1-34) And Axial Loading Is Dosage-dependent And Region-specific In The Mouse Tibia
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Inhibition Of The Epigenetic Regulator Ezh2 Redistributes Bivalent Domains Within Transcriptional Regulators Associated With Wnt And Hedgehog Pathways
Margarita E. Carrasco Jeldres; Roman Thaler; Gino Nardocci; Jennifer J. Westendorf; Amel Dudakovic; Andre Van Wijnen
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Identification Of Novel Hedgehog Signaling Pathway Gene Variants Associated With Familial Forms Of Osteoarthritis
Shivakumar Rayavara Veerabhadraiah; Kendra Novak; Cathy Gavile; Nikolas Kazmers; Michael Jurynce

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Walking Joint Function And Cartilage T2 Relaxation Times Are Related In Osteoarthritic Knees
Austin Carcia; Adam Bradshaw; Amelia Kruse; Charles Ho; Johnny Huard; Lauren Watkins; Scott Tashman

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Intra-articular Drilling Elicits Elevation In Cartilage T2 Relaxation Time
William Zaylor; Kayla M. Malby; Nicole A. Byram; Sercan Yalcin; Kurt P. Spindler; Xiaojuan Li; Jillian E. Beveridge

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A High-risk Osteoarthritis Mutation In COL6A3 Alters Chondrocyte Mechanobiology
Zainab Harissa; Amanda Dicks; Niek G. Bloks; Shaunak S. Adkar; Nancy Steward; Yolande Ramos; Ingrid Meulenbelt; Farshid Guilak

Poster No. 2212
Stress Alters Chondrocyte Mitochondrial Dynamics In Situ
Peyton V. Atkins; Ariel M. Bohner; Moumita Das; Michelle L. Delco

Poster No. 2213
Withdrawn

Poster No. 2214
Leveraging Hsp70 To Protect Chondrocytes From Apoptosis Progression After Joint Injury
Amparo Ruiz; Chongda Zhang; Avni Sanghvi; Thorsten Kirsch; Jose G. Raya

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Arthroscopy Versus Open Arthrotomy In The Treatment Of Septic Arthritis Of The Wrist: An Analysis Of Reoperation Rates, Inpatient Outcomes, And Insurance Status
Gabriel Hanna; Patrick Mattern; Brian Batko; Robert Dalcortivo; Michael M. Vosbikian; Irfan H. Ahmed

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Comparison Of Robotic-assisted And Manual Total Knee Arthroplasty 90-day Complication Rates: A Large Patient Cohort
Antonia Chen; Laura Scholl; Mary Frances Delaunce; Todd Gutowski; Daniele De Massari

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A Pearldiver Analysis Of Complications After Patellofemoral, Total, And Unicompartmental Knee Arthroplasties
Kevin T. Rezzadeh; Caleb Durst; Zachary Rockov; Eytan Debbi; Andrew Spitzer; Guy Paiement; Sean Rajaee
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**PROMIS Subgroup Cluster Analysis Predicts Two-year Outcomes In Knee Surgery Patients**
Samir Kaveeshwar; Justin E. Kung; Michael Rocca; Daniel Rivkin; Jacob Hartline; Jonathan D. Packer; Sean J. Meredith; Natalie L. Leong; Ralph Frank Henn III

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