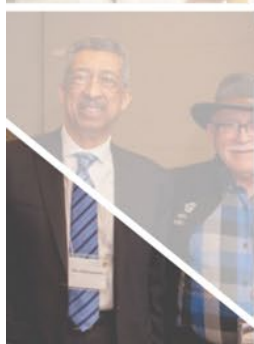


Orthopedics  
UNIVERSITY OF COLORADO

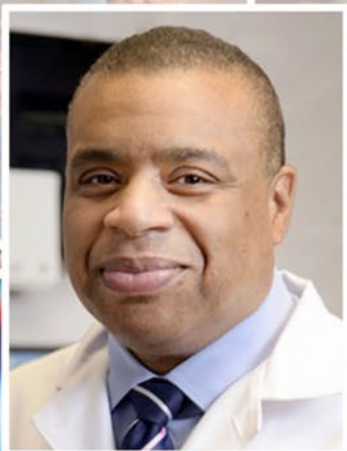


Vanderbilt University



Keynote

Academic  
Quality &



WALLS **GONE** BRAINS **UNLEASHED** CURES **FOUND** POSSIBILITIES **ENDLESS**

# 4<sup>th</sup> Annual Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship

## October 5, 2022

7:30 - 8:25am Check-In & Breakfast

8:25-8:30am Opening Remarks Evalina Burger, MD

8:30 – 9:40am Faculty Plenary Session Moderator: Emily Lindley, PhD

Time	Presenter	Title
8:30am	Courtney Selberg, MD	<p><b>The Optimal Age for Surgical Management of DDH Differs by Treatment Method</b></p> <p><i>Co-Authors: Rachael Martino; Patrick Carry; Aaron Brandt; Ernest Sink</i></p>
8:40am	Honey Hendsi, PhD	<p><b>The Impact of Intermittent Fasting on Metabolism, Bone, and Cartilage of the Mouse Model of Post-Traumatic Osteoarthritis</b></p> <p><i>Co-Authors: Lauren Klein; Samantha Payne Landgrave; David Villani; Lacey Favazzo; Vanessa Sherk; Paul MacLean; Michael Zuscik</i></p>
8:50am	Casey Myers, PhD	<p><b>Changes in Hip Mechanics that Result from Anterior Femoral Offset following Total Hip Arthroplasty</b></p> <p><i>Co-Authors: Chadd Clary; Paul Rullkoetter</i></p>
9:00am	Cheryl Ackert-Bicknell, PhD	<p><b>Identification of Genetic Loci Associated with Bone Response to Intermittent PTH</b></p> <p><i>Co-Authors: Dana Godfrey; Nicole Szeto; Raphael Hatami; Veronica Butler; Michael David; Gregory Ottenberg; Douglas Adams</i></p>
9:10am	Patrick Carry, PhD	<p><b>Untargeted Serum Proteomics Profiling in Females with Adolescent Scoliosis Identifies a Bone Morphogenetic Protein Antagonist (Alpha 2-HS Glycoprotein) as a Potential Candidate for Follow-Up</b></p> <p><i>Co-Authors: Elizabeth Terhune; Anna Monley; Cambria Wethey; Nancy Miller</i></p>
9:20am	Michael David, PhD	<p><b>Machine Learning Approaches to Segment and Cluster Cells of Cartilage and Capsule in Histology Sections</b></p> <p><i>Co-Authors: Yanpeng Yuan; Alison Bacon; Arun Movva; Shikha Shah; Bianca Lang; Weijie Gan; Ian Berke; Ulugbek Kamilov; Spencer Lake</i></p>

9:30am Jason Dragoo, MD

## Arthroscopic All-Inside Meniscal Root Repair: A Biomechanical Analysis and a Prospective Cohort Study

Co-Authors: Nicholas Pasic; Hunter Storaci

9:40 - 11:00am Poster Session 1 - Odd Numbered Posters

Introduction by Emily Lindley, PhD

Poster #	Presenter	Title
1	Mohamed Awad, MD, MBA	<b>Inter- and Intra-Correlation between Patient-Reported Outcome Measures and Patient Satisfaction following Osseointegrated Transfemoral Prosthesis Implantation</b>  <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Eseosa Enabulele; Danielle Melton</i>
3	Mohamed Awad, MD, MBA <b>QI Competition</b>	<b>Defining the Minimal Clinically Important Difference of Case-Specific Patient Reported Outcome Measures following Osseointegrated Transfemoral Prostheses Implantation in Amputees</b>  <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Eseosa Enabulele; Danielle Melton</i>
5	Mohamed Awad, MD, MBA	<b>Limb Reconstruction with Osseointegrated Transfemoral Prosthesis Implantation following Radical Amputation for Lower Extremity Tumors</b>  <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Eseosa Enabulele; Danielle Melton</i>
7	Nicole Griffin, MS3	<b>What is the Most Effective Surgical Antimicrobial Prophylaxis to Prevent Infection after Open Fractures? A Stratified Meta-analysis</b>  <i>Co-Authors: Mohamed Awad, Jason Stoneback, Nicholas Alfonso</i>
9	Nicole Griffin, MS3	<b>Outcomes of Extra-articular Distal Femur Fracture Fixation: A Network Meta-analysis comparing Different Intramedullary Nailing and Plating Techniques</b>  <i>Co-Authors: Mohamed Awad; Jason Stoneback; Nicholas Alfonso</i>
11	Claire Giachino, BA <b>QI Competition</b>	<b>Time From ACL Injury Time to Surgery: Evaluating a Multifaceted Set of Potential Predictors</b>  <i>Co-Authors: Hannah Rossing; David Howell; Curtis VandenBerg; Jay Albright</i>
13	Samuel Stark, BS, BA <b>QI Competition</b>	<b>Utilizing Patient Reported Outcomes to Compare Custom and Prefabricated Foot Orthoses</b>  <i>Co-Authors: Michael Hewitt; Sara Buckley; Teresa Alpert; Kenneth Hunt</i>
15	Michael Hewitt, BA <b>QI Competition</b>	<b>Quantifying the Impact of Orthopedic Conditions on Physical and Mental Health Domains</b>  <i>Co-Authors: Sara Buckley; Brian Ostergren; Shayne York; U-COSMOS; Kenneth Hunt</i>



17	Sara Buckley, DO <b>QI Competition</b>	<b>Patient Reported and Clinical Outcomes in Total Ankle Arthroplasty: The CU Total Ankle Registry</b> <i>Co-Authors: Samuel Stark; Michael Hewitt; Kenneth Hunt</i>
19	Carly Conran, MD <b>QI Competition</b>	<b>Neuropathic and Nociceptive Pain in Patients Undergoing Anterior Cruciate Ligament Reconstruction, Meniscectomy or Meniscal Debridement</b> <i>Co-Authors: Jennifer Seifert; Andrew Clauw; Martin Boublik; Lacey Favazzo; Rachel Frank; James Genuario; Braden Mayer; Eric McCarty; Michelle Wolcott; Michael Zuscik; The University of Colorado Interdisciplinary Joint Biology Program (IJB) consortium</i>
21	Josika Sammarco, BS	<b>Comparison of a Newly Developed Quintuple Hemi-section Achilles Tendon Lengthening Technique to the Traditional Triple Hemi-section Technique: A Cadaveric Biomechanical Study</b> <i>Co-Authors: Mingjie Zhu; Jeremy Ansah-Twum; Todd Baldini; Candace Cepher; Kenneth Hunt; Mark Myerson; Shuyuan Li</i>
23	Shuyuan Li, MD, PhD	<b>Content Validation of the Progressive Collapsing Foot Deformity Classification</b> <i>Co-Authors: Mingjie Zhu; Wanjun Gu; Michael Hewitt; Sara Buckley; Kenneth Hunt; Mark Myerson</i>
25	Rachael Martino, BA	<b>The Novel Posterior Shenton's Line Measurement on a False Profile Radiograph Accurately Identifies Acetabular Dysplasia</b> <i>Co-Authors: Nathan Rogers; Alison Flemig; Stephanie Pearce; Patrick Carry; Ira Zaltz; Courtney Selberg</i>
27	Jack Hop, BA	<b>Comparison of Outcomes in Patients Who Have Undergone Bilateral Periacetabular Osteotomies</b> <i>Co-Authors: Rachael Martino; Jordyn Adams; Patrick Carry; Courtney Selberg</i>
29	David Villani, BS	<b>Ablation of Ccl2 Within the Intestinal Epithelium Protects in the OA of Obesity</b> <i>Co-Authors: Celia Moneboulou; Lauren Klein; Samantha Payne Landgrave; Honey Hendsi; Toru Ishii; Lacey Favazzo; Michael Zuscik</i>
31	Ghazal Vahidi, MSc	<b>The Prevalence and Frequency of Remodeling Osteocytes Depends on the Bone Strain Environment</b> <i>Co-Authors: Chelsea Heveran</i>
33	Cecilia Pascual-Garrido, MD, PhD	<b>PPAR<math>\gamma</math> Promoter Demethylation Rescues Articular Chondrocytes from Catabolic State in Hip FAI</b> <i>Co-Authors: Tomoyuki Kamenaga; Jie Shen; Robert Brophy; Regis O'Keefe; John Clohisy</i>

35	Beatriz Bermudez, BS	<b>Linoleic and Oleic Acid Reduce in Vitro Murine Mesenchymal Stem Cell Energetics but not Osteoblast Energetics</b> <i>Co-Authors: Ana Ferreira Ruble; Vanessa Sherk</i>
37	Kenna Brown, MSc <b>Mack Clayton Visiting Trainee Poster Award Finalist</b>	<b>Short-term High Fat Diet and Aging Reduce Bone Fracture Toughness in C57Bl/6 Mice</b> <i>Co-Authors: Ghazal Vahidi; Maya Moody; Kat Paton; Stephen Martin; Chelsea Heveran</i>
39	Michael David, PhD	<b>Boosting Standard CT Image Resolution via Machine Learning Algorithms</b> <i>Co-Authors: Tillman James; Douglas Adams</i>
41	Gregory Ottenberg, BS, MS	<b>The Effect of Zbtb40 Downregulation on Adipocyte Maturation and Mechanisms Which Regulate Bone Mineral Density</b> <i>Co-Authors: Robert Maynard; Cheryl Ackert-Bicknell</i>
43	S. Rose Purtell, BS	<b>Multi-Disciplinary Process Improvement to Reduce Synovial Fluid Cell Count Turnaround Time in the Pediatric Orthopedic Surgical Setting</b> <i>Co-Authors: Tyler Winkler; Christina Howell; Stacey Hamilton; Darika Siegel; Shannon Horner; Niccole Cintron; Sumeet Garg; Julia Sanders</i>
45	Veronica Butler, BS	<b>Use of Peripheral Blood Monocyte Cells (PBMC) to Improve Diagnosis for Specific Pathogens in Spinal Infections</b> <i>Co-Authors: Gregory Ottenberg; Reed Ayers; Christopher Kleck; David Ou-Yang; Gowrishankar Muthukrishnan; Cheryl Ackert-Bicknell</i>
47	Jordyn Adams, BA	<b>An Elevated Leptin Level is Correlated to Increasing BMI Categories in Slipped Capital Femoral Epiphysis Patients</b> <i>Co-Authors: Rachael Martino; Nathan Rogers; Ryan Pahlau; Patrick Carry; Courtney Selberg</i>
49	Shreyaas Aravindan, BA	<b>The Routine Use of Running Subcuticular Closures in Orthopedic Trauma Patients Does Not Increase Wound Complications</b> <i>Co-Authors: Nicholas Tucker; Yejoon Kim; Austin Heare; Joshua Parry</i>
51	Karin Pacheco, MD, MSPH	<b>Nickel is Detectable in the Synovial Fluid of Patients with Failed Cobalt/Chromium Knee Replacements</b> <i>Co-Authors: Lan Chen; Keegan Rogers; Jared Brown; Richard Meehan; Lisa Barker; Shaodong Dai</i>

53	Caden Robertson, MS	<p><b>Using Motion Lab Ground Reaction Force Asymmetry Analysis to Better Understand Joint Damage in Patients with Hemophilia</b></p> <p><i>Co-Authors: Brecca Gaffney; Niamh Mah; Hana Durkee; Joanna Roybal; Laura Singer-Fox; Sharon Funk; Joseph Mah; Gary Schneider; Tony Johnson; Kenneth Hunt; Marilyn Manco-Johnson; James Carollo; Beth Warren</i></p>
55	Andres Bonilla, DVM	<p><b>Mechanical Model of Degenerative Disc Disease using MRI Compatible Materials</b></p> <p><i>Co-Authors: Mitchell Page; Steve Dow; Brian Johnstone; Christian Puttlitz; Jeremiah Easley</i></p>
57	<p>Parvathy Thampi, BVSc, MVSc, PhD</p> <p><b>Mack Clayton Visiting Trainee Poster Award Finalist</b></p>	<p><b>Optimization of scAAVIL-1ra Dose in a Large Animal Model of Post-traumatic Osteoarthritis</b></p> <p><i>Co-Authors: Kathryn Seabaugh; Jennifer Phillips; Joshua Grieger; Wayne McIlwraith; Constance Chu; Jude Samulski; Laurie Goodrich</i></p>
59	Jake Tinsley, PhD	<p><b>Estimation of Subject-Specific Bone Stress in Patients with Osseointegrated Prostheses during Walking</b></p> <p><i>Co-Authors: Brecca Gaffney; Nick Vandenberg; Jason Stoneback; Dana Carpenter</i></p>
61	Bryan Swanson, BA	<p><b>Epidemiology of Foot and Ankle Injuries Across Playing Surfaces in US High School Athletes</b></p> <p><i>Co-Authors: Michael Hewitt; Sara Buckley; Christy Collins; Kenneth Hunt</i></p>
63	Jacob Rademacher, BS	<p><b>Moderate to Vigorous Physical Activity is Associated with Symptom Resolution After Adolescent Concussion</b></p> <p><i>Co-Authors: Mathew Wingerson; Katherine Smulligan; Casey Little; Julie Wilson; David Howell</i></p>
65	Nicholas Girardi, BA	<p><b>Traction Force During Hip Arthroscopy is Affected by Multiple Patient Demographic and Anatomic Factors</b></p> <p><i>Co-Authors: Omer Mei-Dan; Jessica Lee; Mathew Kraeutler</i></p>
67	Sera Sempson, BA	<p><b>A Comparison of Different Techniques for Measuring the Hindfoot Moment Arm on Weight-bearing CT: An Inter and Intra-observer Reliability Study</b></p> <p><i>Co-Authors: Mingjie Zhu; Wanjun Gu; Chao Wang; Songmin Sun; Mingzhu Zhang; Kenneth Hunt; Mark Myerson; Shuyuan Li</i></p>
69	Clayton Hoffman, BS	<p><b>Change in Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction</b></p> <p><i>Co-Authors: Zohaib Sherwani; Vikas Patel</i></p>
71	Lan Chen, BS	<p><b>Identification of Nickel-binding Site on MHCII/Peptide Complex: Implications in Implant Revision Immunotherapy</b></p> <p><i>Co-Authors: Yanhao Jiang; Karin Pacheco; Shaodong Dai</i></p>

73	Brandon Kassel, BS <b>Mack Clayton Visiting Trainee Poster Award Finalist</b>	<b>Sex and Age-related Effects on Myotendinous Junction Injury in Rats</b> <i>Co-Authors: Travis Montoya; Jeremiah Easley; Kelly Santangelo; Katie Sikes</i>
75	Zachary Clarke, MD <b>CU Orthopedic Resident</b>	<b>The Importance of Patient Resilience on Outcomes Following Hip and Knee Arthroplasty</b> <i>Co-Authors: Michael Hewitt; Sara Buckley; UCOSMOS; Michael Dayton; Craig Hogan; Kenneth Hunt; Ryan Koonce</i>
77	Cecilia Pascual-Garrido, MD, PhD	<b>Epigenetic Dysregulation during the OA Progression in Hip FAI</b> <i>Co-Authors: Tomoyuki Kamenaga; Jie Shen; Robert Brophy; Regis O'Keefe; John Clohisy</i>
79	Terrin Manes, BS	<b>The Orthopedic Tissue and Molecular Imaging Core: Quality Histological Services at Your Fingertips</b>

11:00am - 12:00pm	Mack Clayton Scientific Keynote Presentation	Introduction by Mike Zuscik, PhD
-------------------	--	----------------------------------

Jonathan Schoenecker, MD, PhD Jeffrey W. Mast Endowed Chair in Orthopaedics Professor of Orthopaedic Surgery & Rehabilitation Vanderbilt University	Dismantling Orthopaedic Long Hauler Syndrome
--	--

12:00 - 1:00pm	Lunch Break & Additional Poster Viewing
----------------	---

1:00 - 2:10pm	Trainee Plenary Session: Mack Clayton Travel Award Finalists	Moderator: David Howell, PhD
---------------	--	------------------------------

Time	Presenter	Title
1:00pm	Aditya Mantha, BA	<b>Single-cell RNA Sequencing Reveals a Potential Role for Macrophages in the Formation of Bony Repair Tissue after Growth Plate Injury</b> <i>Co-Authors: Stacey Thomas; Nicholas Rotello Kuri; Tania Rodriguez; Ethan Beltrand; Cathy Shi; Karin Payne</i>
1:10pm	Samantha Magliato, BS	<b>Latent Trajectory Analysis to Identify Post-Concussion Injury Risk Among Adolescent Athletes</b> <i>Co-Authors: Patrick Carry; Katherine Smulligan; Mathew Wingerson; Julie Wilson; David Howell</i>

1:20pm	Mohamed Awad, MD, MBA	<b>Defining the Minimal Clinically Important Difference of Health-Related Quality of Life Measures following Osseointegrated Transfemoral Prosthesis Implantation</b> <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Eseosa Enabulele; Danielle Melton</i>
1:30pm	Sara Buckley, DO	<b>Gene Transcription in End Stage Ankle Osteoarthritis: Assessing the Role of Synovium through RNA-sequencing</b> <i>Co-Authors: Mary Hamati; Michael Hewitt; Cheryl Ackert-Bicknell; Michael Zuscik; Joshua Metz; Daniel Moon; Kenneth Hunt</i>
1:40pm	Sara Higsley, BS	<b>Alleviating ER Stress Augments Bone Mass and Fracture Repair in Diet-induced Obese Mice</b> <i>Co-Authors: Lakshmi Divya Kolora; Dana Godfrey; Kartik Shankar; Douglas Adams; Srividhya Iyer</i>
1:50pm	Jeremy Ansah-Twum, BS	<b>Tarsal Coalition Is Not Necessarily Associated with A Flatfoot Deformity: A Cohort of Clinically Misdiagnosed Cases and Alignment Features In 41 Feet</b> <i>Co-Authors: Mingjie Zhu; Melissa Carpenter; Sera Sempson; Kenneth Hunt; Mark Myerson; Shuyuan Li</i>
2:00pm	Katherine Smulligan, DPT	<b>Impaired Cervical Spine Proprioception Predicts Gait Speed After Adolescent Concussion</b> <i>Co-Authors: Mathew Wingerson; Samantha Magliato; Casey Little; Julie Wilson; David Howell</i>

2:10 - 3:30pm	Poster Session 2 - Even Numbered Posters	Introduction by David Howell, PhD
Poster #	Presenter	Title
2	Mohamed Awad, MD, MBA	<b>Prophylactic Intrawound Antibiotics Significantly Reduce the Risk of Infection following Fracture Fixation: Subgroup Metanalyses of the Type of Fracture, Antibiotics, and Organism</b> <i>Co-Authors: Nicholas Alfonso; Jason Stoneback; Ji Young Chung</i>
4	Mohamed Awad, MD, MBA	<b>What Are the Most Comprehensive and Efficient Patient Reported Outcome Measures for Individuals with Lower-Limb Loss Undergoing Osseointegrated Prosthesis Implantation?</b> <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Eseosa Enabulele; Danielle Melton</i>
6	Mohamed Awad, MD, MBA	<b>The Sensitivity and Specificity of Frailty Indices in Predicting the Mortality and Complications following Lower-Limb Amputation</b> <i>Co-Authors: Jason Stoneback; Cory Christiansen; Hope Davis-Wilson; Brecca Gaffney; Danielle Melton</i>



8	Nicole Griffin, MS3	<b>Acute Application of Antibiotic Powder in Open Fracture Wounds: A Preview to the APOW Pilot Project</b> <i>Co-Authors: Nicholas Alfonso; Jason Stoneback; Melissa Gorman; Jason Koerner; Mohamed Awad</i>
10	Alexander Aretakis, MD CU Orthopedic Resident	<b>Novel Use of the O-Arm Following Open Reduction of a Dislocated Hip for a Walking Age Patient Provides a Low-Radiation Alternative to CT</b> <i>Co-Authors: Rachael Martino; Courtney Selberg</i>
12	Zachary Clarke, MD CU Orthopedic Resident	<b>The Importance of Patient Resilience on Outcomes Following Orthopedic Surgery</b> <i>Co-Authors: Michael Hewitt; Sara Buckley; James Genuario; Alexandra Orahovats; Rachel Frank; UCOSMOS; Kenneth Hunt</i>
14	Stephen Daniels, MD CU Orthopedic Resident	<b>Posterolateral Rotatory Instability Develops with the Kocher Approach and is Not Detectable on Hanging Arm Test: A Cadaveric Analysis</b> <i>Co-Authors: Thomas France; Kacey Peek; Louis Catalano III; Todd Baldini; Alexander Lauder</i>
16	Thomas France, MD CU Orthopedic Resident	<b>A Novel Disaster Protocol and Outcomes During the First Peak of COVID-19 at a Level One, Orthopedic Trauma Center</b> <i>Co-Authors: Alisha Meserve; Jason Stoneback; Melissa Gorman; Nicholas Alfonso</i>
18	Francisco Rodriguez-Fontan, MD CU Orthopedic Resident	<b>Clinical Outcomes Following Proximal Hamate Reconstruction of Proximal Pole Scaphoid Non-unions: A Case Series</b> <i>Co-Authors: Nicholas Tucker; Emily Pflug; Fraser Leversedge; Louis Catalano; Alexander Lauder</i>
20	Tyler Scott, MD CU Orthopedic Resident	<b>A Prospective Randomized Trial Comparing Barbed To Traditional Sutures in TKA Closure</b> <i>Co-Authors: E. Mark Hammerberg; Nathan Cafferky; Corey Henderson</i>
22	Nicholas Tucker, MD CU Orthopedic Resident	<b>Combined Anterior-Posterior Versus Posterior-Only Fixation of Stress-Positive Minimally Displaced Lateral Compression Type 1 (LC1) Pelvic Ring Injuries</b> <i>Co-Authors: Bryan Scott; Austin Heare; Stephen Stacey; Cyril Mauffrey; Joshua Parry</i>
24	Kylie Shaw, MD CU Orthopedic Resident QI Competition	<b>Patient-Reported Outcomes of Pain and Related Quality of Life One-Year Following Osseointegration in Patients with Lower-Extremity Amputations</b> <i>Co-Authors: Jason Stoneback; Danielle Melton; Mohamed Awad</i>
26	Graham Albert, MD CU Orthopedic Resident	<b>The Learning Curve in Robotic-Assisted Pediatric Spine Surgery</b> <i>Co-Authors: Patrick Carry; Angela Vu; Michael Ballard; Mark Erickson</i>

28	Mingjie Zhu, DAOM, MPH	<p><b>The Spatial Orientation of The Foot: A Critical Step in Hindfoot Alignment Evaluation on Weight Bearing CT</b></p> <p><i>Co-Authors: Wanjun Gu; Chao Wang; Songmin Sun; Mingzhu Zhang; Kenneth Hunt; Mark Myerson; Shuyuan Li</i></p>
30	Wanjun Gu, BS, BA	<p><b>A Novel Personalized Angular Measurement to Guide Both Evaluation and Treatment of Insertional Achilles Tendinopathy</b></p> <p><i>Co-Authors: Mingjie Zhu; Melissa Carpenter; Kenneth Hunt; Mark Myerson; Shuyuan Li</i></p>
32	Lynn Pezzanite, DVM, PhD	<p><b>Erythrocyte Removal from Bone Marrow Aspirate Concentrate Improves Efficacy as Intra-Articular Cellular Therapy in Rodent Osteoarthritis Model</b></p> <p><i>Co-Authors: Ariel Timkovich; Katie Sikes; Lyndah Chow; Dean Hendrickson; Jordyn Becker; Meghan Webster; Kelly Santangelo; Steven Dow</i></p>
34	Patrick Carry, PhD	<p><b>When 1 + 1 Does Not Equal 2: Special Considerations are Required for Inclusion of Patients with Bilateral Musculoskeletal Conditions in Orthopedic Research Studies</b></p> <p><i>Co-Authors: Carson Keeter; David Howell</i></p>
36	Samantha Landgrave, PhD Student	<p><b>Abaloparatide Supports Chondroprotection in Murine Posttraumatic Osteoarthritis</b></p> <p><i>Co-Authors: Toru Ishii; Antonio Sanchez; Dana Godfrey; Terrin Manes; Veronica Butler; David Villani; Honey Hendesi; Srividhya Iyer; Karin Payne; Douglas Adams; Lacey Favazzo; Beate Lanske; Michael Zuscik</i></p>
38	Kathryn Colone, BS Mack Clayton Visiting Trainee Poster Award Finalist	<p><b>Variation in Spinopelvic Mobility Across Different Patient Cohorts</b></p> <p><i>Co-Authors: Sam Mattei; Destan Norman; Casey Myers; Kevin Shelburne; Paul Rullkoetter; Chadd Clary</i></p>
40	Michael David, PhD	<p><b>Machine Learning Approach to Improve the Non-Invasive Prediction of Bone Strength</b></p> <p><i>Co-Authors: Raphael Hatami; Nicole Szeto; Dana Godfrey; Conrad Quade; Cheryl Ackert-Bicknell; Douglas Adams</i></p>
42	Boyuan Liu, PhD	<p><b>A Radiofrequency Ablation Simulation: Development of a Novel Animal Model of Osteochondritis Dissecans</b></p> <p><i>Co-Authors: Kristine Fischenich; Virginia Ferguson</i></p>
44	Kristine Fischenich, PhD	<p><b>3D Printed Cartilage Mimetic Composite Postpones Onset of Skeletal Deformities in a Rabbit Model of Growth Plate Injury</b></p> <p><i>Co-Authors: Francisco Rodriguez-Fontan; Stacey Thomas; Sarah Schoonraad; Laurel Stefani; Virginia Ferguson; Nancy Miller; Stephanie Bryant; Karin Payne</i></p>

46	Melissa Cuevas, MS	<p><b>Cytoskeletal Keratins Are Overexpressed in a Zebrafish Model of Idiopathic Scoliosis</b></p> <p><i>Co-Authors: Elizabeth Terhune; Cambria Wetthey; MkpoutoAbasi James; Rahwa Netsanet; Denisa Grofova; Anna Monley; Lori Silveira; Nancy Miller</i></p>
48	Ethan Beltrand	<p><b>Characterization of the Immune Response after Implantation of an Alginate:chitosan Hydrogel after Growth Plate Injury in a Rat Model</b></p> <p><i>Co-Authors: Stacey Thomas; Michael Stager; Melissa Krebs; Karin Payne</i></p>
50	Brian Rao, BS	<p><b>Increased Incidence of Nonunion in Distal Femur Fragility Fractures Treated with a Locking Plate in Obese and Diabetic Elderly Female Populations</b></p> <p><i>Co-Authors: Jiayong Liu; Nabil Ebraheim</i></p>
52	Todd Baldini, MS	<p><b>Are the Loading Forces Different on the Acetabulum at Various Angles of Pelvic Tilt in a Cadaver Model?</b></p> <p><i>Co-Authors: Rachael Martino; Sierra Imoe; Whitney Hovater; Stephanie Mayer; Courtney Selberg</i></p>
54	<p>Andres Bonilla, DVM</p> <p><b>Mack Clayton Visiting Trainee Poster Award Finalist</b></p>	<p><b>Shock Wave Therapy in a model of Degenerative Disc Disease</b></p> <p><i>Co-Authors: Steve Dow; Brian Johnstone; Christian Puttlitz; Jeremiah Easley</i></p>
56	Andres Bonilla, DVM	<p><b>Autoimmune Stimulus in a Model of Degenerative Disc Disease</b></p> <p><i>Co-Authors: Steve Dow; Brian Johnstone; Christian Puttlitz; Jeremiah Easley</i></p>
58	Melissa Carpenter, BS	<p><b>Do Patients with Insertional Achilles Tendinopathy Have Different Morphologic and Radiographic Alignment Features of the Foot?</b></p> <p><i>Co-Authors: Wanjun Gu; Jeremy Ansah-Twum; Mingjie Zhu; Kenneth Hunt; Mark Myerson; Shuyuan Li</i></p>
60	Diego Vargas, BSE	<p><b>Bone Tissue Composition Is Not Altered by T1DM in a Small Cohort of Postmenopausal Women</b></p> <p><i>Co-Authors: Jacob Jeong; Mark Ciccaglione; Richard Benninger; Virginia Ferguson</i></p>
62	Galen Roda, BS	<p><b>Muscular Quality of the Gluteal Muscles in Patients with Transfemoral Amputation</b></p> <p><i>Co-Authors: Taylor Wittwer; Jason Stoneback; Mohamed Awad; Brecca Gaffney</i></p>
64	<p>Emily Van Zeeland, BS</p> <p><b>Mack Clayton Visiting Trainee Poster Award Finalist</b></p>	<p><b>Elucidating Sex Differences in the Response to Anterior Cruciate Ligament Injury following Mechanical Rupture</b></p> <p><i>Co-Authors: Jeremiah Easley; Brandon Kassel; Sara Wist; Kelly Santangelo; Katie Sikes</i></p>

66	Landon Hamilton, PhD	<b>MRI-based Segmentation is a Suitable Alternative to Calculate Bone Volume</b> <i>Co-Authors: Sean Higinbotham; Thor Andreassen; Charles Ho; Kevin Shelburne</i>
68	Benjamin Wharton, BA	<b>Patient Perceptions of Social Media Use by Orthopedic Surgeons</b> <i>Co-Authors: Alex Johnson; Elisabeth Geraghty; Hannah Bradsell; Andrew Ishikawa; Kelly Leach; Eric McCarty; Jonathan Bravman; Rachel Frank</i>
70	Blaine Larson, BS	<b>Synovial Transcriptomic Response in Osteoarthritis Progression Determined by Single Cell Sequencing in an Equine Model</b> <i>Co-Authors: Dylan Ammons; Lyndah Chow; Steven Dow; Lynn Pezzanite</i>
72	Robyn Pierce, MS	<b>Morphology and Congruence Features of the Calcaneocuboid Joint: A Novel Technique Combining 3 Dimensional CT-based Bone Segmentation and Joint Surface Mapping</b> <i>Co-Authors: Mingjie Zhu; Mark Myerson; Kenneth Hunt; Caley Orr; Shuyuan Li</i>
74	Mathew Wingerson, MS	<b>Predicting Time to Clinical Presentation after Adolescent Concussion: Propensity and Barriers to Accessing Post-Concussion Care</b> <i>Co-Authors: Samantha Magliato; Katherine Smulligan; Casey Little; Julie Wilson; David Howell</i>
76	Carson Keeter, MS	<b>The CU Orthopedics Clinical Biostatistics Core</b>
78	Karin Payne, PhD; Michael Zuscik, PhD	<b>NIH T32: CU Interdisciplinary Training in Musculoskeletal Research</b>
80	Nancy Miller, MD	<b>Musculoskeletal Research Center</b> <i>Co-Authors: Patrick Carry; James Carollo</i>

3:30 -  
4:30pm

D'Ambrosia Diversity Keynote  
Presentation

Introduction by Evalina Burger, MD

**Michael Parks, MD**

Clinical Director of Orthopedic Surgery, Vice Chair  
for Quality, and Hospital Trustee  
Hospital for Special Surgery  
2019 Recipient of the AAOS Diversity Award

**Why Diversity in Orthopaedic Surgery is Good Medicine:  
A Case Made by Disparities in Total Joint Replacement**



4:30 -  
5:00pm

Awards Presentation & Closing  
Remarks

Presented by: Karin Payne, PhD

5:00 -  
6:30pm

D'Ambrosia Diversity Reception  
*Light refreshments will be served*

## Roster of Presenting Authors

Last Name	First Name	Home Institution
Ackert-Bicknell	Cheryl	University of Colorado Anschutz Medical Campus
Adams	Jordyn	Children's Hospital Colorado
Albert	Graham	University of Colorado Anschutz Medical Campus
Ansah-Twum	Jeremy	University of Colorado Anschutz Medical Campus
Aravindan	Shreyaas	University of Colorado Anschutz Medical Campus, Denver Health
Aretakis	Alexander	University of Colorado Anschutz Medical Campus
Awad	Mohamed	University of Colorado Anschutz Medical Campus
Baldini	Todd	University of Colorado Anschutz Medical Campus
Beltrand	Ethan	University of Colorado Anschutz Medical Campus
Bermudez	Beatriz	University of Colorado Anschutz Medical Campus
Bonilla	Andres	Colorado State University
Brown	Kenna	Montana State University
Buckley	Sara	University of Colorado Anschutz Medical Campus
Butler	Veronica	University of Colorado Anschutz Medical Campus
Carpenter	Melissa	University of Colorado Anschutz Medical Campus
Carry	Patrick	University of Colorado Anschutz Medical Campus
Chen	Lan	University of Colorado Anschutz Medical Campus
Clarke	Zachary	University of Colorado Anschutz Medical Campus
Colone	Kathryn	University of Denver
Conran	Carly	University of Colorado Anschutz Medical Campus
Cuevas	Melissa	University of Colorado Anschutz Medical Campus
Daniels	Stephen	University of Colorado Anschutz Medical Campus
David	Michael	University of Colorado Anschutz Medical Campus
Dragoo	Jason	University of Colorado Anschutz Medical Campus
Fischenich	Kristine	University of Colorado Anschutz Medical Campus
France	Thomas	University of Colorado Anschutz Medical Campus
Giachino	Claire	Children's Hospital Colorado
Girardi	Nicholas	University of Colorado Anschutz Medical Campus
Griffin	Nicole	University of Colorado Anschutz Medical Campus
Gu	WanJun	University of California San Diego
Hamilton	Landon	University of Denver
Hendesi	Honey	University of Colorado Anschutz Medical Campus
Hewitt	Michael	University of Colorado Anschutz Medical Campus
Higsley	Sara	University of Colorado Anschutz Medical Campus
Hoffman	Clayton	University of Colorado Anschutz Medical Campus
Hop	Jack	University of Colorado Anschutz Medical Campus
Kassel	Brandon	Colorado State University

Landgrave	Samantha	University of Colorado Anschutz Medical Campus
Larson	Blaine	Colorado State University
Li	Shuyuan	University of Colorado Anschutz Medical Campus
Liu	Boyuan	University of Colorado Boulder
Magliato	Samantha	University of Colorado Anschutz Medical Campus
Mantha	Aditya	University of Colorado Anschutz Medical Campus
Martino	Rachael	Children's Hospital Colorado
Miller	Nancy	Children's Hospital Colorado
Myers	Casey	University of Denver
Ottenberg	Gregory	University of Colorado Anschutz Medical Campus
Pacheco	Karin	National Jewish Health
Pascual-Garrido	Cecilia	Washington University School of Medicine
Pezzanite	Lynn	Colorado State University
Pierce	Robyn	University of Colorado Anschutz Medical Campus
Purtell	Rose (Sarah)	Children's Hospital Colorado
Rademacher	Jacob	University of Denver
Rao	Brian	University of Toledo College of Medicine
Robertson	Caden	University of Colorado Anschutz Medical Campus
Roda	Galen	University of Colorado Anschutz Medical Campus
Rodriguez Fontan	Francisco	University of Colorado Anschutz Medical Campus
Sammarco	Josika	Case Western Reserve University
Scott	Tyler	University of Colorado Anschutz Medical Campus
Selberg	Courtney	Children's Hospital Colorado
Sempson	Sera	University of Colorado Anschutz Medical Campus
Shaw	Kylie	University of Colorado Anschutz Medical Campus
Smulligan	Katherine	University of Colorado Anschutz Medical Campus
Stark	Samuel	Rocky Vista University
Swanson	Bryan	University of Colorado Anschutz Medical Campus
Thampi	Parvathy	Colorado State University
Tinsley	Jake	University of Colorado Denver
Tucker	Nicholas	University of Colorado Anschutz Medical Campus
Vahidi	Ghazal	Montana State University
Van Zeeland	Emily	Colorado State University
Vargas	Diego	University of Colorado Boulder
Villani	David	University of Colorado Anschutz Medical Campus
Wharton	Benjamin	University of Colorado Anschutz Medical Campus
Wingerson	Mathew	Children's Hospital Colorado
Zhu	Mingjie	University of Colorado Anschutz Medical Campus