

# MID-AMERICA ORTHOPAEDIC ASSOCIATION

## Poster Presentations – 2023 Annual Meeting

- Posters will be located in the Coastal Ballroom Foyer of the Hilton Sandestin Beach Golf Resort
- Presenters will be available for discussion and questions at the following times. CME credit is given for poster viewing at these times only:
  - Posters 1 – 42 Thursday, April 20, 2023 10:30 – 11:00 AM
  - Posters 43 – 88 Friday, April 21, 2023 10:30 – 11:00 AM

### FOOT AND ANKLE (2 posters)

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**1. Highlighting the Utility of Ultrasound Guidance in Achilles Paratenon Injections: A Cadaver Study**

A. Mack Padgett, B.S.	Birmingham, AL
Thomas Sanchez, B.S.	Birmingham, AL
Francisco Caycedo, M.D.	Birmingham, AL
Ashish Shah, M.D.	Birmingham, AL
Connor Donley, B.S.	Birmingham, AL
Aaron Haider, B.S.	Birmingham, AL
Nayana Nagaraj, B.S.	Birmingham, AL
*Mila Scheinberg	Birmingham, AL

**2. Analysis of Patient-Reported Outcomes Following Triple Arthrodesis: A Minimum Two-Year Follow-Up**

Matt Young, B.S.	Birmingham, AL
Kevin Sanchez, B.S.	Birmingham, AL
Sri Prahad, B.S.	Birmingham, AL
*Morgan Sisk, B.S.	Birmingham, AL
Meghan Underwood, B.S.	Birmingham, AL
Thomas Sanchez, B.S.	Birmingham, AL
Nayana Nagaraj, B.S.	Birmingham, AL
Ashish Shah, M.D.	Birmingham, AL

### HAND (6 posters)

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**3. Understanding Human Motor Endplate Degeneration After Peripheral Nerve Injury**

Luigi P. Gonzales	Irvine, CA
Vivian Chen	Irvine, CA
Tyler R. Johnston, M.D.	Irvine, CA
Oswald Steward, Ph.D.	Irvine, CA
Ranjan Gupta, M.D.	Irvine, CA
*Arjun T. Gupta	Irvine, CA

- 4. Retrospective Review of Corticosteroid Injection for Management of Lacertus Syndrome**  
 \*Will G. Freking, M.D. Minneapolis, MN  
 Michelle M. Frees, M.D. Minneapolis, MN  
 Judith A. McElfresh Jendro St Paul, MN  
 Christina M. Ward, M.D. St Paul, MN
- 5. Surgical Management of Peroneal Nerve Injuries**  
 \*Courtney R. Carlson Strother, M.D. Rochester, MN  
 Lauren E. Dittman, M.D. Rochester, MN  
 Robert J. Spinner, M.D. Rochester, MN  
 Allen T. Bishop, M.D. Rochester, MN  
 Alexander Y. Shin, M.D. Rochester, MN
- 6. Menstrual Hormone-Induced Cyclic Thumb CMC Instability and Degeneration in Women: A Systematic Review**  
 Emily A. Parker, B.A. Iowa City, IA  
 Alex M. Meyer, M.D. Durham, North Carolina  
 \*Ignacio Garcia Fleury, M.D. Iowa City, IA  
 Joseph A. Buckwalter V, M.D., Ph.D. Iowa City, IA
- 7. Return to Sport and Performance After Thumb Metacarpophalangeal Joint Collateral Ligament Surgery in the National Basketball Association**  
 \*Brian Phelps, M.D. Houston, TX  
 Brendan Holderread, M.D. Houston, TX  
 Jordan Jafarnia Houston, TX  
 Mark Perrin Houston, TX  
 Joshua Harris, M.D. Houston, TX  
 Shari Liberman, M.D. Houston, TX
- 8. Every Painful Lesion in the Upper Extremity is Not a Neuroma: An Algorithmic Approach for Diagnosing Painful Benign Forearm Lesions**  
 \*Ania N. Bartholomew, M.S. Dayton, OH  
 H. Brent Bamberger, D.O. Dayton, OH

## TRAUMA (12 posters)

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- 9. Inhibition of Inflammation and Mitochondrial ROS Attenuates Post-Traumatic Osteoarthritis in a Rabbit Model of Ligamentous Instability**  
 \*Julian E. Dilley, M.D. Indianapolis, IN  
 Margaret Bello, B.S. Indianapolis, IN  
 Abhijit Seetharam, M.D. Indianapolis, IN  
 Roman Natoli, M.D., Ph.D. Indianapolis, IN  
 Todd Mckinley, M.D. Indianapolis, IN  
 Uma Sankar, Ph.D. Indianapolis, IN

**10. A Coronoid-Centric Classification System of Proximal Trans-Ulnar Fracture Dislocations Has Almost Perfect Intraobserver and Interobserver Agreement**

*Micah Nieboer, M.D.	Rochester, MN
Alexandra M. Cancio-Bello, B.S.	Rochester, MN
Krystin A. Hidden, M.D.	Rochester, MN
Brandon J. Yuan, M.D.	Rochester, MN
Mark E. Morrey, M.D.	Rochester, MN
Joaquin Sanchez-Sotelo, M.D., Ph.D.	Rochester, MN
Shawn W. O'Driscoll, M.D.	Rochester, MN
Jonathan D. Barlow, M.D., M.S.	Rochester, MN

**11. Periprosthetic Fracture: A Missed Opportunity for Diagnosis and Intervention**

Paul S. Whiting, M.D.	Madison, WI
*Gabrielle R. Kuhn, M.D.	Marshall, IL
Kristyn J. Hare, P.A.	Madison, WI
James T. Bernatz, M.D.	Madison, WI
Kristina Parvanta Johnson, M.P.A.	Chicago, IL
Diane Krueger, B.S.	Madison, WI
Gretta Borchardt, B.S.	Madison, WI
Neil C. Binkley, M.D.	Madison, WI
Paul A. Anderson, M.D.	Madison, WI

**12. The Impact of Tranexamic Acid in Postoperative Outcomes of Pelvic and/or Acetabular Fracture: A Systematic Review and Meta-Analysis**

*Ayooluwa Ayoola, M.D.	Kalamazoo, MI
Rachael Tolsma, B.S.	Kalamazoo, MI
Jalen Martin, B.A.	Kalamazoo, MI
Keith Kenter, M.D.	Kalamazoo, MI
Yong Li, M.D., Ph.D.	Kalamazoo, MI

**13. Racial Disparities in a Fascia Iliaca Block Program at a Level 1 Trauma Center**

*Nicholas L. Kolodychuk, M.D.	Akron, OH
Michael Dube, B.S.	Rootstown, OH
Nicholas DiNicola, M.D.	Akron, OH

**14. Does In-Situ Sterilization of the External Fixator for Maintenance of Reduction During Definitive Fixation of High-Energy Tibial Plateau Fractures Impact Rates of Postoperative Stiffness?**

*Tyler J. Moon, M.D.	Cleveland, OH
Lucas R. Haase, M.D.	Cleveland, OH
Douglas R. Haase, M.D.	Kansas City, KS
Jacob Speybroeck, M.D.	Cleveland, OH
George Ochenjele, M.D.	Cleveland, OH
Brent T. Wise, M.D.	Kansas City, KS
Joshua K. Napora	Cleveland, OH

**15. Risk Factors for Surgical Site Infection After Operative Management of Pilon Fractures**

*Brandon O. Boyd, B.S.	Birmingham, AL
Anthony Wilson, M.S.	Birmingham, AL
Kyle Cichos, B.S.	Birmingham, AL
Sudarsan Murali, MBA	Birmingham, AL
David Patch, M.D.	Birmingham, AL
Rodney Arthur, M.D.	Birmingham, AL
Gerald McGwin, Ph.D.	Birmingham, AL
Clay A. Spitler, M.D.	Birmingham, AL

**16. Cost-Analysis of Revision Amputations: A Single Center Retrospective Study**

Grayson Domingue, M.D.	Oklahoma City, OK
*John A. Geha, M.D.	Oklahoma City, OK
Cameron Shirazi, M.D.	Oklahoma City, OK
Douglas Rowles, M.D.	Oklahoma City, OK

**17. Evaluation of a Novel Multidisciplinary Pre-Operative Workup Strategy for Geriatric Hip Fractures**

*Andrew M. Steffensmeier, M.D.	Cincinnati, OH
Connor Hoge, M.D.	Cincinnati, OH
Nihar Shah, M.D.	Cincinnati, OH
Robert Matar, M.D.	Cincinnati, OH
Morgan Rice, B.S.	Cincinnati, OH
Erin Grawe, M.D.	Cincinnati, OH
Justin Held, M.D.	Cincinnati, OH
Bradley Budde, M.D.	Cincinnati, OH
Richard Laughlin, M.D.	Cincinnati, OH
H. Claude Sagi, M.D.	Cincinnati, OH

**18. CANCELLED**

**19. Tranexamic Acid Administered at Time of Hospital Admission Does Not Decrease Transfusion Rates or Blood Loss for Extracapsular Hip Fractures: A Double-Blinded Randomized Clinical Trial**

*Aaron R. Owen, M.D.	Rochester, MN
Chelsea C. Boe, M.D.	Silverdale, WA
Alexandra M. Cancio-Bello, B.S.	Rochester, MN
Nicolas P. Kuttner, B.S.	Rochester, MN
Kristina M. Colbenson, M.D.	Rochester, MN
Krystin A. Hidden, M.D.	Rochester, MN
Jonathan D. Barlow, M.D., M.S.	Rochester, MN
William W. Cross, M.D.	Rochester, MN
S. Andrew Sems, M.D.	Rochester, MN
Brandon J. Yuan, M.D.	Rochester, MN

**20. The Incidence and Diagnosis of Intra-Articular Extension with Spiral Distal Third Humerus Fractures**

Travis H. Alford, M.D.	Houston, TX
Zachary C. Hoelscher, M.D.	Houston, TX
Adeet A. Amin, M.D.	Houston, TX
*Wade N. Karam, M.D.	Houston, TX
Blake J. Schultz, M.D.	Houston, TX
Timothy S. Achor, M.D.	Houston, TX
Jonathan Eastman, M.D.	Houston, TX
Stephen J. Warner, M.D., Ph.D.	Houston, TX

**ORTHOPEDIC ONCOLOGY (1 poster)**

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**21. Intramedullary Reaming Biopsy in Diagnosing Metastatic Long Bone Disease**

Kali N. Stevens, M.D.	Cleveland, OH
*Xuankang Pan, B.S.	Cleveland, OH
Collin W. Blackburn, M.D., MBA	Cleveland, OH
Joshua K. Napora, M.D.	Cleveland, OH

**SPINE (7 posters)**

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**22. Does Achieving PROMIS MCID Influence Healthcare Resource Utilization After Cervical Spine Surgery?**

*Erik B. Gerlach, M.D.	Chicago, IL
Mark A. Plantz, M.D.	Chicago, IL
Bejan Alvandi, M.D.	Chicago, IL
Jason Tegethoff, M.D.	Chicago, IL
Steven Kurapaty, M.D.	Chicago, IL
Jeremy Marx, M.D.	Chicago, IL
Alyssa Goodwin, B.S.	Chicago, IL
Srikanth N. Divi, M.D.	Chicago, IL
Wellington Hsu, M.D.	Chicago, IL
Alpesh Patel, M.D.	Chicago, IL

**23. Accuracy of Non-Invasive Hemoglobin (nHgb) Monitoring in an AIS Population**

*Amy L. McIntosh, M.D.	Dallas, TX
Christopher McLeod	Dallas, TX

**24. Elevated HbA1c Values Predispose Medical Complications After Lumbar Fusion**

*Anitesh Bajaj, B.S.	Chicago, IL
Rushmin Khazanchi, B.A.	Chicago, IL
Rohan M. Shah, B.A.	Chicago, IL
Steven S. Kurapaty, M.D.	Chicago, IL
Samuel G. Reyes, B.S.	Chicago, IL
Austin R. Chen, B.A.	Chicago, IL
Erik B. Gerlach, M.D.	Chicago, IL
Wellington K. Hsu, M.D.	Chicago, IL
Alpesh A. Patel, M.D.	Chicago, IL
Srikanth N. Divi, M.D.	Chicago, IL

**25. Using Machine Learning Techniques to Predict Healthcare Utilization after ACDF**

Rushmin Khazanchi, B.A.	Chicago, IL
*Anitesh Bajaj, B.S.	Chicago, IL
Rohan M. Shah, B.A.	Chicago, IL
Austin R. Chen, B.A.	Chicago, IL
Samuel G. Reyes, B.S.	Chicago, IL
Steven S. Kurapaty	Chicago, IL
Bejan Alvandi, M.D.	Chicago, IL
Wellington K. Hsu, M.D.	Chicago, IL
Alpesh A. Patel, M.D.	Chicago, IL
Srikanth N. Divi, M.D.	Chicago, IL

**26. Percutaneous Stabilization of Traumatic Lumbar and Thoracic Spine Fractures: A Retrospective Review**

Nathan J. Kopydlowski, M.D.	New York, NY
Howard M. Place, M.D.	St. Louis, MO
*Benjamin A. Nwadike, M.D.	St. Louis, MO
Asa Peterson, M.D.	St. Louis, MO

**27. Transforaminal vs. Lateral Interbody Fusion for Treatment of Adjacent Segment Disease in the Lumbar Spine**

*Mark F. Megerian, B.S.	Cleveland, OH
Prashant Rajan, M.D.	Cleveland, OH
Ansh Desai, B.S.	Cleveland, OH
Penelope Halkiadakis, B.S.	Cleveland, OH
Nicholas Rabah, M.D.	Cleveland, OH
James Showery, M.D.	Cleveland, OH
Zachary Grabel, M.D.	Cleveland, OH
Dominic Pelle, M.D.	Cleveland, OH
Jason Savage, M.D.	Cleveland, OH

**28. The Role of Clinical Comorbidities and Social Determinants of Health on 90-day Readmission Rates Following ACDF**

*Samuel G. Reyes	Chicago, IL
Pranav Bajaj	Chicago, IL
Steven Kurapaty	Chicago, IL
Anitesh Bajaj	Chicago, IL
Rushmin Khazanchi	Chicago, IL
Austin Chen	Chicago, IL
Wellington Hsu, M.D.	Chicago, IL
Alpesh Patel, M.D. M.B.A	Chicago, IL
Srikanth Divi, M.D.	Chicago, IL

**29. CANCELLED**

**30. Retaining a Well-Fixed Cone During Revision Total Knee Arthroplasty: Surgical Technique and Outcome**

*Xiao T. Chen, M.D.	Rochester, MN
Michael W. Seward, M.D.	Rochester, MN
Michael J. Taunton, M.D.	Rochester, MN
David G. Lewallen, M.D.	Rochester, MN
Matthew P. Abdel, M.D.	Rochester, MN
Nicholas A. Bedard, M.D.	Rochester, MN

**31. CANCELLED**

**32. The Differential Effect of COVID-19 on Total Joint Arthroplasty Between Hospital and ASC/HOPD - A MARCQI Analysis**

*Dexter T. Powell, M.D.	Saint Clair Shores, MI
Nicholas B. Frisch, M.D., MBA	Rochester, MI
Stefano Muscatelli, M.D.	Ann Arbor, MI
Heather Chubb	Ann Arbor, MI
Richard Hughes, Ph.D.	Ann Arbor, MI
Brian Hallstrom, M.D.	Ann Arbor, MI
David C. Markel, M.D.	Novi, MI

**33. Outcomes After Primary Below-Knee Amputation for Vascular vs. Diabetic Indications**

*Mark A. Plantz, M.D.	Chicago, IL
Erik B. Gerlach, M.D.	Chicago, IL
Hogan J. Brecount, M.D.	Chicago, IL
Steven Kurapaty, M.D.	Chicago, IL
Corey A. Jones, B.S.	Chicago, IL
Bejan Alvandi, M.D.	Chicago, IL
David Christian, M.D.	Chicago, IL
Jeremy S. Marx, M.D.	Chicago, IL
Terrance D. Peabody, M.D.	Chicago, IL
Srikanth N. Divi, M.D.	Chicago, IL

**34. Greater Improvement in PROMs in Patients with Body Mass Index  $\geq$ 40 Following Primary TKA**

*Ashton Bosler, B.S.	Fishers, IN
Evan R. Deckard, B.S.E	Fishers, IN
Leonard T. Buller, M.D.	Fishers, IN
Mary Ziemba-Davis, B.A.	Fishers, IN
R. Michael Meneghini, M.D.	Fishers, IN

**35. CANCELLED**

**36. Conversion Total Knee Arthroplasty After Failed Osteochondral Allograft Reconstruction-Similar Functional Performance with Lower Satisfaction**

*Lasun O. Oladeji, M.D.	Columbia, MO
Brenton G. Albracht, M.D.	Phoenix, AZ
James A. Keeney, M.D.	Columbia, MO

**37. Examining Appropriate Knee Magnetic Resonance Imaging at a Tertiary Care Center**

Bingtao Xiang, B.S.	Chicago, IL
*Crystal Ye Lin, M.D.	Chicago, IL
Michael Redondo, M.D.	Chicago, IL
Michael Patetta, M.D.	Chicago, IL
Abhishek Deshpande, M.D.	Chicago, IL
Lucas Paladino, M.D.	Chicago, IL
Hristo Piponov, M.D.	Chicago, IL
Mark H. Gonzalez, M.D., Ph.D.	Chicago, IL

**HIP PRESERVATION (5 posters)**

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**38. The Ability of MRI to Predict Capsulolabral Adhesions at Revision Hip Arthroscopy**

*Steven M. Leary, M.D.	Iowa City, IA
Catherina Zadeh, M.D.	Iowa City, IA
Mustafa Hashimi, B.S.	Iowa City, IA
Nastaran Fatemi, M.D.	Iowa City, IA
Courtney Seffker, PA-C	Iowa City, IA
Michael C. Willey, M.D.	Iowa City, IA
Robert W. Westermann, M.D.	Iowa City, IA



**39. Identifying Racial Disparity in Utilization and Outcomes of Hip Arthroscopy using Machine Learning**

Yining Lu, M.D.	Rochester, MN
Erick M. Marigi, M.D.	Rochester, MN
Kareme D. Alder, M.D.	Rochester, MN
*Samuel N. Schrader, M.D.	Rochester, MN
John Mickley	Rochester, MN
Christopher L. Camp, M.D.	Rochester, MN
Bruce A. Levy, M.D.	Rochester, MN
Aaron J. Krych, M.D.	Rochester, MN
Kelechi R. Okoroha, M.D.	Rochester, MN

**40. Association Between Computerized Tomography Measurements and Stryker HipMap Data In Patients with Femoroacetabular Impingement**

*Luke W. Adams, B.S.	Sioux Falls, SD
Nathan W. Skelley, M.D.	Sioux Falls, SD
Lisa N. MacFadden, Ph.D.	Sioux Falls, SD

**41. Concomitant Hip Arthroscopy and Periacetabular Osteotomy: Systematic Review and Meta-Analysis of Contemporary Outcomes, Survivorship, and Complications with Comparison to Isolated Periacetabular Osteotomy**

*Christian J. Hecht II, B.S.	Cleveland, OH
Robert J. Burkhart, B.S.	Cleveland, OH
Alexander J. Acuña, M.D.	Cleveland, OH
David P. Gurd, M.D.	Cleveland, OH
James T. Rosneck, M.D.	Cleveland, OH

**42. Radiographic Measures of Hip Dysplasia Correlate with Joint Contact Stress Computed with Discrete Element Analysis**

*Aspen C. Miller	Iowa City, IA
Holly D. Aitken	Iowa City, IA
Jessica E. Goetz, Ph.D.	Iowa City, IA
Robert W. Westermann, M.D.	Iowa City, IA
Michael C. Willey, M.D.	Iowa City, IA

**TRAUMA (2 poster)**

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**43. Outcomes of Glenohumeral Arthrodesis in Patients with Brachial Plexus Injuries Using Reamer Irrigator Aspirator Bone Grafting**

*Lauren E. Dittman, M.D.	Rochester, MN
Alexandra M. Cancio-Bello, B.S.	Rochester, MN
Brandon J. Yuan, M.D.	Rochester, MN
Alexander Y. Shin, M.D.	Rochester, MN

**44. Is Ankle Fracture Healing Rate Decreased by NSAIDs? A Multicenter Retrospective Study of Weber B and C Fractures**

*John E. Whitaker, M.D.	Louisville, KY
Andrew Anklowitz, M.D.	Alanta, GA
Rodolfo Zamora, M.D.	Louisville, KY

**ADULT RECONSTRUCTION: HIP (10 posters)**

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**45. Leg Length Discrepancy After Hip Fracture Repair is Associated with Reduced Gait Speed**

*Alexa N. Pearce, B.A.	Little Rock, AR
Frederick E. Sieber, M.D.	Baltimore, MD
Nae-Yuh Wang, Ph.D.	Baltimore, MD
Jeffrey B. Stambough, M.D.	Little Rock, AR
Benjamin M. Stronach, M.D.	Little Rock, AR
Simon C. Mears, M.D., Ph.D.	Little Rock, AR

**46. Modular Proximal Body Exchange for Re-Revision Total Hip Arthroplasty: Rarely Utilized and Moderately Successful**

*Matthew L. Hadley, M.D.	Rochester, MN
Joshua R. Harmer, M.D.	Rochester, MN
Robert T. Trousdale, M.D.	Rochester, MN

**47. Instability in Patients with Lumbar Spine Disease Undergoing Posterior vs. Lateral Approach THA**

*Amrit Parihar, B.S.	Fishers, IN
Evan R. Deckard, B.S.E	Fishers, IN
Leonard T. Buller, M.D.	Fishers, IN
R. Michael Meneghini, M.D.	Fishers, IN

**48. The Association Between Perioperative Blood Transfusions and Venous Thromboembolism Risk Following Surgical Management of Hip Fractures**

Daniel Grits, B.S.	Cleveland, OH
Andy Kuo, B.S.	Cleveland, OH
Alexander J. Acuña, M.D.	Cleveland, OH
Linsen T. Samuel, M.D.	Cleveland, OH
*Robert J. Burkhart, B.S.	Cleveland, OH
Atul F. Kamath, M.D.	Cleveland, OH

**49. Novel Identification of Common Genetic Variants in Musculoskeletal Pathways Implicated in Familial Femoroacetabular Impingement**

*William H. Trousdale, M.D.	Rochester, MN
Cody C. Wyles, M.D.	Rochester, MN
Christopher R. Paradise, Ph.D.	Rochester, MN
Aaron J. Krych, M.D.	Rochester, MN
Robert T. Trousdale, M.D.	Rochester, MN
Eric W. Klee, Ph.D.	Rochester, MN
Rafael J. Sierra, M.D.	Rochester, MN

**50. Dual-Mobility vs. Conventional Bearings in Patients at High Risk of Dislocation: Interim Analysis of A Randomized Controlled Trial**

*Matthew T. Weintraub, B.S.	Chicago, IL
Anne DeBenedetti, M.Sc.	Chicago, IL
Craig J. Della Valle, M.D.	Chicago, IL
Brian Darrith, M.D.	Detroit, MI
Daniel Waren, MPH	New York, NY
Emanuele Chisari, M.D.	Philadelphia, PA
Ran Schwarzkopf, M.D., M.Sc.	New York, NY
P. Maxwell Courtney, M.D.	Philadelphia, PA
Denis Nam, M.D., M.Sc.	Chicago, IL

**51. Acute vs. Delayed Total Hip Arthroplasty After Acetabular Fracture**

*Jacob L. Henrichsen, M.D.	Iowa City, IA
Christopher N. Carender, M.D.	Iowa City, IA
Olivia C. O'Reilly, M.D.	Iowa City, IA
Ganesh Sivamurugan, M.B.B.S.	Iowa City, IA
Matthew D. Karam, M.D.	Iowa City, IA

**52. Wear Analysis of Marathon Crosslinked Polyethylene in Total Hip Arthroplasty**

*Bhargavi Maheshwer, M.D.	Cleveland, OH
Isaac Grinberg	Cleveland, OH
Rebecca Moore, Ph.D.	Cleveland, OH
Clare Rimnac, Ph.D.	Cleveland, OH
Matthew Kraay, M.D.	Cleveland, OH

**53. Inconsistency and Ambiguity within the ICD-10 Procedure Coding System for Hip Fractures**

*Levent A. Ozdemir, M.S.	Little Rock, AR
Joshua Anderson, M.D.	Little Rock, AR
Benjamin Stronach, M.D.	Little Rock, AR
C. Lowry Barnes, M.D.	Little Rock, AR
Simon C. Mears, M.D.	Little Rock, AR
Jeffery B. Stambough, M.D.	Little Rock, AR

**54. Length of Stay and Postoperative Outcomes Following Hip Fracture Fixation and Elective Total Hip Arthroplasty During the Covid-19 Pandemic**

*Andy Mufasa Liu, B.S.	Chicago, IL
Charles Liu, B.S.	Chicago, IL
Sarah Bhattacharjee, M.D.	Chicago, IL
Jason Strelzow, M.D.	Chicago, IL

**55. Efficacy of Root Repair, Partial Meniscectomy, and Nonoperative Management of Meniscus Root Tear on Degenerative Progression of the Knee: A Systematic Review and Meta-Regression**

Dustin R. Lee, M.D.	Rochester, MN
Anna K. Reinholz, B.S.	Rochester, MN
Yining Lu, M.D.	Rochester, MN
Sara E. Till, MS	Rochester, MN
Amber Lopez, B.S.	Rockford, IL
Allen S. Wang, M.S.	Rochester, MN
Alexander M. Boos, B.A.	Rochester, MN
Daniel B.F. Saris, M.D., Ph.D	Rochester, MN
Christopher L. Camp, M.D.	Rochester, MN
Aaron J. Krych, M.D.	Rochester, MN
*Abhinav Lamba, B.S.	Rochester, MN

**56. Lower Extremity Return to Sport Testing: A Systematic Review**

Traci Smiley, DPT	Kansas City, KS
*Johnathan Dallman, B.S.	Kansas City, KS
Anthony Mok, B.S.	Kansas City, KS
Levi Aldag, B.S.	Kansas City, KS
Kyle Martin, DPT	Kansas City, KS
Megan Burki, A.T.C.	Kansas City, KS
Lisa Vopat, M.D.	Kansas City, KS
Bryan Vopat, M.D.	Kansas City, KS

**57. Risk Factors for Athletic Pubalgia in Collegiate Football Players: A Retrospective Cohort Study**

Alexander J. Neuville, M.S.	Chicago, IL
Clint L. Benge, M.D.	Madison, WI
Vehniah K. Tjong, M.D.	Chicago, IL
Brian S. Lund, MS, A.T.C.	Madison, WI
*Geoffrey S. Baer, M.D., Ph.D.	Madison, WI
Brian E. Walczak, D.O.	Madison, WI

**58. CANCELLED**

**59. Incidence of Injuries in WNBA Players Participating in Olympic and Professional Play**

*Nithya Lingampalli, M.D.	Maywood, IL
Jason E. Meldau, M.D.	Maywood, IL
Amir M. Boubekri, M.D.	Maywood, IL
Hassan Farooq, M.D.	Maywood, IL
Douglas A. Evans, M.D.	Maywood, IL
John Miller, M.D.	Maywood, IL

**60. Comparison of Operative Fixation of Loose Fragments from Osteochondral Defects of the Trochlea in Mature vs. Skeletally Immature Patients**

*Galo C. Bustamante, B.S.	Columbus, OH
Amogh I. Iyer, BSE	Columbus, OH
Eric M. Milliron, M.D.	Columbus, OH
Parker A. Cavendish, M.D.	Columbus, OH
Robert A. Duerr, M.D.	St. Louis, MO
Robert A. Magnussen, M.D., MPH	Columbus, OH
Christopher C. Kaeding, M.D.	Columbus, OH
David C. Flanigan, M.D.	Columbus, OH

**61. Predicting Risk of Secondary Meniscus Tears Following Anterior Cruciate Ligament Reconstruction: A Machine Learning Analysis of 1,369 Patients with a Median Follow-Up of Nine Years**

*Kevin Jurgensmeier, M.D.	Rochester, MN
Sara E. Till, M.S.	Rochester, MN
Yining Lu, M.D.	Rochester, MN
Alexandra M. Arguello, M.D.	Rochester, MN
Michael J. Stuart, M.D.	Rochester, MN
Daniel B. F. Saris, M.D., Ph.D.	Rochester, MN
Christopher L. Camp, M.D.	Rochester, MN
Aaron J. Krych, M.D.	Rochester, MN

**62. Impact of ACLR Graft Choice on Meniscal Repair Outcomes**

*Emily Coffey	Columbus, OH
Robert A. Magnussen, M.D.	Columbus, OH
Amogh I. Iyer, B.S.E.	Columbus, OH
Galo C. Bustamante, B.S.	Columbus, OH
Laura Schmitt, P.T., M.P.T., Ph.D.	Columbus, OH

**63. MRI Prediction of Autograft Size Using Posterior Hamstring Harvest for ACL Reconstruction**

Jack M. Ayres, B.S.	Kansas City, KS
*Jonathan Dallman, B.S.	Kansas City, KS
Erik Henkelman, M.D.	Lawrence, KS
Bryan G. Vopat, M.D.	Kansas City, KS
Stephan Pro, M.D.	Lawrence, KS

**64. Early Results of ACL Reconstruction with Quad Tendon Autograft All-Inside Technique**

*Amogh I. Iyer, BSE	Columbus, OH
Galo C. Bustamante, B.S.	Columbus, OH
Eric M. Milliron, M.D.	Columbus, OH
Parker A. Cavendish, M.D.	Columbus, OH
David C. Flanigan, M.D.	Columbus, OH
Christopher C. Kaeding, M.D.	Columbus, OH
Robert A. Magnussen, M.D., MPH	Columbus, OH
Robert A. Duerr, M.D.	St. Louis, MO

**65. Injection of Bone Marrow Aspirate Concentrate and Demineralized Bone Matrix for the Treatment of Bone Marrow Edema Lesions Provides Excellent Clinical Outcomes in Patients with Mild to Severe Osteoarthritis**

*Rajit Saluja, M.D.	Franklin, WI
Anand P. Saluja	New York, NY
Akshay P. Saluja	St. Louis, MO
Eric Dorn, M.D.	Milwaukee, WI

**SHOULDER ARTHROPLASTY (11 posters)**

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**66. Anatomic and Reverse Total Shoulder Arthroplasty Amongst Medicare Patients in the Ambulatory Surgery Center: A Retrospective Review on 90-Day Complications**

*Claire E. Hays, M.D.	Memphis, TN
Tyler J. Brolin, M.D.	Memphis, TN
Abu M. Titu, Ph.D., MBBS	Memphis, TN
Thomas W. Throckmorton, M.D.	Memphis, TN
Frederick M. Azar, M.D.	Memphis, TN
David L. Bernholt, M.D.	Memphis, TN
Margaret Knack, M.S.	Memphis, TN
Renn Eason, M.S.	Memphis, TN

**67. Shoulder Arthroplasty After Prior External Beam Radiation Therapy: A Matched Cohort Analysis**

Erick M. Marigi, M.D.	Rochester, MN
*Malik E. Dancy, M.D.	Rochester, MN
Quinn J. Johnson, B.A.	Rochester, MN
Jonathan Barlow, M.D.	Rochester, MN
Matthew Crowe, M.D.	Rochester, MN
John W. Sperling, M.D., MBA	Rochester, MN
Joaquin Sanchez-Sotelo, M.D. Ph.D.	Rochester, MN
Bradley S. Schoch, M.D.	Rochester, MN

**68. Analysis of 90-Day Complications in Total Shoulder Arthroplasty Performed in the Ambulatory Setting**

*Bhargavi Maheshwer, M.D.	Cleveland, OH
Hailey P. Huddleston, M.D.	New York, NY
Evan M. Polce, B.S.	Madison, WI
Brady T. Williams, M.D.	Denver, CO
Michael C. Fu, M.D.	New York, NY
Nabil Mehta, M.D.	Chicago, IL
Grant E. Garrigues, M.D.	Chicago, IL
Bryan Forsythe, M.D.	Chicago, IL
Gregory P. Nicholson, M.D.	Chicago, IL
Nikhil N. Verma, M.D.	Chicago, IL

- 69. Preventing Deltoid Dysfunction After Axillary Nerve Injury: Results of Partial Radial to Axillary Nerve Transfer as the Index Procedure**  
Ranjan Gupta, M.D. Irvine, CA  
Tyler R. Johnston, M.D. Irvine, CA  
Vivian Chen Irvine, CA  
Luigi P. Gonzales Irvine, CA  
Oswald Steward, Ph.D. Irvine, CA  
\*Arjun T. Gupta Irvine, CA
- 70. Do Racial Differences Impact Complication Rates After Total Joint Arthroplasty?**  
\*Anna Redden, B.S. Boca Raton, FL  
Atharva Rohatgi, B.S. Boca Raton, FL  
Jessica V. Baran, B.S. Greenacres, FL  
Clyde Fomunung, B.S., MBA Lake Worth, FL  
Justin Elkhechen, M.D. Lake Worth, FL  
Howard Routman, D.O. Lake Worth, FL
- 71. Early Postoperative Improvement in Patient-Reported Outcomes Following Operative vs. Nonoperative Treatment for Proximal Humerus Fractures**  
\*Ani S. Kazanjian, M.D., MPH Detroit, MI  
Gabriel B. Burdick Detroit, MI  
Bushra Fathima Detroit, MI  
Jordan Sinclair Akins Detroit, MI
- 72. Validation of an App-Based Goniometer for Shoulder Range of Motion Assessment**  
Carlos A. Fernandez, M.D. Palm Beach, FL  
Justin Elkhechen, B.S. Palm Beach, FL  
Clyde Fomunung, B.S., MBA Palm Beach, FL  
Howard Routman, D.O. Lake Worth, FL  
Vani J. Sabesan, M.D. Palm Beach, FL  
\*Atharva Rohatgi, B.S. Boca Raton, FL
- 73. The Use of a Suture Cerclage Tension Technique to Improve Lesser Tuberosity Osteotomy Repair in Anatomic Total Shoulder Arthroplasty**  
\*Margaret A. Sinkler, M.D. Cleveland, OH  
Mark F. Megerian Cleveland, OH  
Ethan R. Harlow, M.D. Cleveland, OH  
Daniel C. Acevedo, M.D. Los Angeles, CA  
Robert J. Gillespie, M.D. Cleveland, OH
- 74. Physical Therapy Following Reverse Shoulder Arthroplasty: A Prospective Randomized Trial Comparing Formal Therapy and a Home Physical Therapy Regimen**  
\*Samuel Schick, M.D. Birmingham, AL  
Jun Kit He, M.D. Birmingham, AL  
Joseph Elphinstone, M.D. Birmingham, AL  
Benjamin Catoe, M.D. Birmingham, AL  
Kyle Paul, M.D. Birmingham, AL  
Alexandra Arguello, M.D. Birmingham, AL  
Amit Momaya, M.D. Birmingham, AL  
Eugene Brabston, M.D. Birmingham, AL

**75. Humeral Component Malalignment in a Short-Stem, Inlay Shoulder Arthroplasty System: Rates and Risk Factors**

*Victor H. Martinez, B.S.	San Antonio, TX
Desiree E. Ojo, MLS(ASCP), MPA, MPH	San Antonio, TX
J. Michael Proffitt, Ph.D.	San Antonio, TX
Robert U. Hartzler, M.D., M.S.	San Antonio, TX

**76. CANCELLED**

**SPORTS: UPPER EXTREMITY (8 posters)**

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**77. Defining and Predicting the "Optimal Observed Outcome" Following Surgical Treatment of Anterior Shoulder Instability: A Machine Learning Clustering Analysis of 200 Patients with 11-Year Mean Follow-Up**

Sara E. Till, M.S.	Rochester, MN
*Yining Lu, M.D.	Rochester, MN
Anna K. Reinholz, B.S.	Rochester, MN
Abhinav Lamba, B.S.	Rochester, MN
Alexander M. Boos, B.A.	Rochester, MN
Allen S. Wang, M.S.	Rochester, MN
Aaron J. Krych, M.D.	Rochester, MN
Kelechi R. Okoroha, M.D.	Rochester, MN
Christopher L. Camp, M.D.	Rochester, MN

**78. Unsatisfactory Outcomes After Rotator Cuff Repair: Factors Associated with High Levels of Pain and Shoulder Dysfunction**

*Kevin Jurgensmeier, M.D.	Rochester, MN
Sagar S. Chawla, M.D.	Seattle, WA
Anna C. Panebianco, B.S.	Seattle, WA
Anastasia J. Whitson, B.S.	Seattle, WA
Frederick A. Matsen, M.D.	Seattle, WA
Jason E. Hsu, M.D.	Seattle, WA

**79. Upper Extremity Blood Flow Restriction Training Influences Proximal Shoulder Muscle Recruitment in an Occlusion Dependent Fashion**

Tyler Roehl, DPT	Houston, TX
Corbin Hedt, DPT	Houston, TX
Jordan Ankersen, B.S.	Houston, TX
Karen Hernandez, B.S.	Houston, TX
Patrick McCulloch, M.D.	Houston, TX
*Bradley S. Lambert, Ph.D.	Houston, TX

**80. Obesity is a Risk Factor for Atrophy in Rotator Cuff Tears**

*Simone Herzberg, B.S.	Nashville, TN
Nitin Jain, M.D. MPH	Austin, TX
Yaush Giri, Ph.D.	Nashville, TN



**81. CANCELLED**

**82. Optimal Needle Length and Site for Intramuscular Deltoid Vaccine Administration**

*Markos Mardourian, B.S.	Gainesville, FL
Kevin A. Hao, B.S.	Gainesville, FL
Whitman Wiggins, M.D.	Gainesville, FL
Jonathan Arias, M.D.	Gainesville, FL
Joseph J. King, M.D.	Gainesville, FL
Thomas W. Wright, M.D.	Gainesville, FL
Jonathan O. Wright, M.D.	Gainesville, FL

**83. Evidence-Based Risk Factors for Injury to the Medial Ulnar Collateral Ligament of the Elbow in Baseball Players: A Systematic Review**

Devin P. Leland, M.D.	Rochester, MN
*Joshua R. Labott, M.D.	Rochester, MN
Sara E. Till, M.S.	Rochester, MN
Joshua S. Dines, M.D.	New York, NY
Christopher L. Camp, M.D.	Rochester, MN

**84. Biomechanical Differences in a Catcher's Throw to Second Base Compared to a Pitcher's Throwing Motion**

*Samuel D. Gieg, M.D., MPH	Columbia, MO
Steven DeFroda, M.D., MEng	Columbia, MO

**MEDICAL EDUCATION (4 posters)**

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**85. Finding Your Job in Orthopedic Trauma: The Cold Hard Facts**

*Lisa K. Cannada, M.D.	Jacksonville, FL
Max E. Davis, M.D.	Nashville, TN
Taylor M. Yong, M.D.	Nashville, TN
William T. Obremsky, M.D.	Nashville, TN

**86. Cannabidiol Perceptions and Use in the Orthopedic Patient Population**

Karen L. Hernandez, B.S.	Houston, TX
Kendra Ihaza	Houston, TX
*Bradley S. Lambert, Ph.D.	Houston, TX
Haley Goble, MHA, CRCC	Houston, TX
Patrick McCulloch, M.D.	Houston, TX

**87. Orthopedic Sub-Specialties Vary in Representation of Female Fellowship Program**

**Directors**

*Lisa K. Cannada M.D.	Jacksonville, FL
Jillian Kazley M.D.	Charlotte, NC
Brianna Fram	Charlotte, NC

**88. Do Education Grants Pay Off for the MAOA?**

*Genna R. Potter, B.S.	Little Rock, AR
Simon C. Mears, M.D.	Little Rock, AR
Alexandra G. Otwell, B.S.	Little Rock, AR
Lisa K. Cannada, M.D.	Jacksonville, FL