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UCSF Department of Orthopaedic Surgery

OREF WESTERN REGION
RESIDENT RESEARCH SYMPOSIUM
Wednesday, September 24, 2025

University of California, San Francisco
Fisher Banquet Room West
Mission Bay Conference Center at UCSF
1675 Owens Street
San Francisco, California

Hosted by:
C. Benjamin Ma, MD
Chair, Department of Orthopaedic Surgery
Dr. Peter and Sophie Pappas Endowed Chair
V-nee Yeh Endowed Professor of Orthopaedic Surgery
University of California, San Francisco

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The Orthopaedic Research and Education Foundation (OREF) is a charitable 501(c)(3) organization committed to improving lives by supporting excellence in orthopaedic research through its grant funding and research education programs. As an independent nonprofit, OREF strives to improve clinical care and patient outcomes by advancing innovative research, developing new investigators, and uniting the orthopaedic community in promoting musculoskeletal health. Visit oref.org or follow OREF on LinkedIn (Orthopaedic Research and Education Foundation) Facebook (OREFtoday) and X (@OREFtoday).

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OREF WESTERN REGION RESIDENT RESEARCH SYMPOSIUM
SUMMARY AGENDA
Wednesday, September 24, 2025

7:00 a.m. – 7:45 a.m.	**Registration and Breakfast** University of California, San Francisco, Fisher Banquet Room West Mission May Conference Center at UCSF 1675 Owens Street San Francisco, California
7:45 a.m. – 7:50 a.m.	**Welcome and Introductions** C. Benjamin Ma, MD Chair, Department of Orthopaedic Surgery Dr. Peter and Sophie Pappas Endowed Chair V-nee Yeh Endowed Professor of Orthopaedic Surgery University of California, San Francisco
7:50 a.m. – 8:00 a.m.	**OREF Welcome** Lee Grossman, MBA, ML, CAE Chief Executive Officer Orthopaedic Research and Education Foundation
8:00 a.m. –8:28 a.m.	**Session I – Resident Research Presentations & Discussion** **Sports**
8:28 a.m. – 9:08 a.m.	**Session II – Resident Research Presentations & Discussion** **Arthroplasty**
	Break – *Please submit your scores from Sessions I and II to OREF Staff*
9:18 a.m. – 9:52 a.m.	**Session III – Resident Research Presentations & Discussion** **Spine**
9:52 a.m. – 10:26 a.m.	**Session IV – Resident Research Presentations & Discussion** **Oncology**
	Break – *Please submit your scores from Sessions III and IV to OREF Staff*
10:36 a.m. – 11:10 a.m.	**Session V – Resident Research Presentations & Discussion** **Hand, Pediatrics, Trauma, Health Policy/Other**
.	**Break-** *Please submit your scores from Session V to OREF Staff*
11:13 a.m. – 11:16 a.m.	**Introduction of Keynote Speaker**
11:16 a.m. – 11:46 a.m.	**Keynote Address** *How Pediatric Knee Dissections Have Changed My Approach to Knee Surgery* Kevin G. Shea, MD Vice Chief of Pediatric Orthopaedic Surgery for Research Director of Pediatric Sports Medicine Stanford University Assistant Surgeon-in-Chief for Quality and Supply Chain Management, LPCH Stanford Children's Hospital
11:46 a.m. – 11:56 a.m.	**Keynote Question & Answer**
11:56 a.m. – 12:06 p.m.	**Closing Remarks and Awards Presentation** Awards reception immediately following the program

KEYNOTE SPEAKER

Kevin G. Shea, MD

Vice Chief of Pediatric Orthopaedic Surgery for Research
Director of Pediatric Sports Medicine
Stanford University
Assistant Surgeon-in-Chief for Quality and Supply Chain Management,
LPCH, Stanford Children's Hospital

Kevin G. Shea, MD is at Stanford University. He grew up in Montana and California, graduated from the University of Notre Dame, UCLA School of Medicine, and completed his orthopaedic residency at the University of Utah. His advanced training includes pediatric orthopaedics at Rady Children's Hospital in San Diego, AO Fellowship in Bern Switzerland with Dr. Ganz (Hip), Dr. Diego Fernandez (Trauma), and Dr. Hans Staubli (sports), Ilizarov Training in Lecco, Italy. He has done the AOSSM South American Traveling Sports Medicine Fellowship, and education in Russia and former Soviet Bloc countries. Most of his early career was in Boise, Idaho.

Dr. Shea is a founding member of the PRISM Society (Pediatric Research in Sports Medicine) and the ROCK (Research in Osteochondritis Dissecans of the Knee) Multi-center Study Group, and the SCORE (Sports Cohort Outcomes Research) Multi-Center Registry for pediatric sports. He has authored more than 270 scientific papers and chapters.

His clinic research interests include cartilage and ligament disorders, using pediatric cadaveric tissue and surgical 3D simulations to develop surgeries and improve outcomes for procedures that avoid damage to growth plates. He has years of experience with performance, quality improvement, value, and he worked extensively with the AAOS Quality/Clinical Practice Guideline Committees. He is one of the POSNA members to launch the POSNA Safe Surgery Program. He is a national quality leader in health care with interests in patient safety, risk reduction, and improving value in health care with clinician integration into supply chain.

He is an avid cyclist, trail runner, hiker, and spends as much time outside as possible, with his partner Lonnie and their children Beck and Cooper.

Judges

Kevin G. Shea, MD
Stanford University

Lauren Shapiro, MD
University of California, San Francisco

Ishaan Swarup, MD
University of California, San Francisco

OREF Western Region Resident Research Symposium
DETAILED AGENDA
Wednesday, September 24, 2025

7:00 a.m. – 7:45 a.m. **Registration and Breakfast**
University of California, San Francisco, Fisher Banquet Room West
Mission May Conference Center at UCSF
1675 Owens Street
San Francisco, California

7:45 a.m. – 7:50 a.m. **Welcome and Introductions**
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Chair, Department of Orthopaedic Surgery
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V-nee Yeh Endowed Professor of Orthopaedic Surgery
University of California, San Francisco

7:50 a.m. – 8:00 a.m. **OREF Welcome**
Lee Grossman, MBA, ML, CAE
Chief Executive Officer
Orthopaedic Research and Education Foundation

Session I – Presentations and Discussion
Sports Medicine

8:00 a.m. – 8:06 a.m. *Shorter Relative Patellar Defect Length after Bone Patellar Tendon Bone Anterior Cruciate Ligament Reconstruction is Associated with Better Postoperative Patient-Reported Outcomes at 1-year Follow-up*
Grant Schroeder, MD, Stanford University

8:06 a.m. – 8:12 a.m. *Combined Root and Body (CRAB) Lateral Meniscus Tears in the Adolescent Population: An Underrecognized and Underreported Tear Pattern*
Karch M. Smith, MD, University of California, San Diego

8:12 a.m. – 8:18 a.m. *Comparison of Retear Rates and All-Cause Reoperation Rates in Pediatric and Adolescent ACL Reconstructions Using Bone Patellar Tendon and Quadriceps Tendon Grafts*
Kyla Petrie, MD, University of California, San Francisco

8:18 a.m. – 8:28 a.m. **Question and Answer**

Session II – Resident Research Presentations & Discussion
Arthroplasty

8:28 a.m. – 8:34 a.m. *Specific Patterns of Anterior Acetabular Cystic Change in the Absence of Other Degenerative Changes: A Potential Clue for Occult Instability Especially in Borderline Dysplasia Cases*
Carson Gardner, MD, San Francisco Orthopaedic Residency Program

8:34 a.m. – 8:40 a.m. *Risks for Reoperation to Promote Union in Periprosthetic Distal Femur Fractures*
Benjamin Crawford, MD, University of California, San Francisco Health St. Mary's

8:40 a.m. – 8:46 a.m. *Osteoarthritis and Total Joint Arthroplasty in Housing Insecure Patients at a Safety-Net Hospital in a Major Urban City*
Kelechi Nwachuku, MD, University of California, San Francisco

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8:46 a.m. – 8:52 a.m.	*Navigated and Robotic Total Knee Arthroplasty (TKA) Do Not Confer Improved 5-Year Survivorship Compared to Conventional TKA: An Analysis from the American Joint Replacement Registry (AJRR)* Alexa K. Pius, MD, Stanford University
8:52 a.m. – 8:58 a.m.	*Metal Femoral Heads Do Not Increase Serum Metal Ions Compared with Ceramic Femoral Heads in Primary Total Hip Arthroplasty* John Shapton, MD, San Francisco Orthopaedic Residency Program
8:58 a.m. – 9:08 a.m.	**Question and Answer**
9:08 a.m. – 9:18 a.m.	**Break - Please submit your scores from Sessions I and II to OREF Staff**
	Session III – Presentations and Discussion **Spine**
9:18 a.m. – 9:24 a.m.	*Perioperative Bleeding Complications of Vertebral Body Resection in Patients with and without Prior Spine Infection* Stephanie Chang, MD, San Francisco Orthopaedic Residency Program
9:24 a.m. – 9:30 a.m.	*Reciprocal Changes in Sagittal Spinal Alignment Are Similar After L5-S1 and L4-S1 Anterior Lumbar Interbody Fusion* Thaddeus Woodard, MD, University of California, San Diego
9:30 a.m. – 9:36 a.m.	*Comparative Analysis of Postoperative Outcomes in Type 1 versus Type 2 Diabetes Mellitus Patients Undergoing Spinal Fusion* Thomas Olson, MD, University of California, Los Angeles
9:36 a.m. – 9:42 a.m.	*Muscle Gene Expression and Cellular Morphology in Individuals with Adult Spinal Deformity Who Develop Proximal Junctional Failure* Pearce B. Haldeman, MD, University of California, San Diego
9:42 a.m.- 9:52 a.m.	**Question and Answer**
	Session IV – Resident Research Presentations & Discussion **Oncology**
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9:58 a.m. - 10:04 a.m.	*Predictive Factors of Having a Second UBC-Related Pathologic Fracture* Mathangi Sridharan, MD, University of California, Los Angeles
10:04 a.m. - 10:10 a.m.	*Characteristics and Recurrence Risk of Upper Extremity Soft Tissue Sarcoma* Nicole J. Newman-Hung, MD, University of California, Los Angeles

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10:10 a.m. - 10:16 a.m.	*Income Impacts Overall but not Cause-Specific Survival in Patients with Chondrosarcoma: A Population Based Study from the SEER Database* Brandon Gettleman, MD, University of California, Los Angeles
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10:26 a.m. – 10:36 a.m.	Break – *Please submit your scores from Sessions III and IV to OREF Staff*
	Session V – Resident Research Presentations & Discussion **Hand, Pediatrics, Trauma, Health Policy/Other**
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10:42 a.m. – 10:48 a.m.	*Guided Growth Treatment for Lower Extremity Coronal Angular Deformity Correction* Muayad Kadhim, MD, University of California, San Francisco
10:48 a.m. – 10:54 a.m.	*Osteochondral Autograft from the Proximal Tibiofibular Joint for Reconstruction of Acute Tibial Plateau Fractures with Severe Chondral Defects* Oliver Dong, MD, San Francisco Orthopaedic Residency Program at University of California, San Francisco Health St. Mary's Hospital
10:54 a.m. – 11:00 a.m.	*Effect of Body Mass on Reoperation Rate for Distal Femur Fractures* Anna Martin, MD, University of California, San Francisco Health St. Mary's
11:00 a.m. – 11:10 a.m.	**Question and Answer**
11:10 a.m. – 11:13 a.m.	Break – *Please submit your scores from Session V to OREF Staff*
11:13 a.m. – 11:16 a.m.	**Introduction of Keynote Speaker**
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Shorter Relative Patellar Defect Length after Bone Patellar Tendon Bone Anterior Cruciate Ligament Reconstruction is Associated with Better Postoperative Patient-Reported Outcomes at 1-Year Follow-up?

Grant Schroeder, MD
Stanford University

Purpose: This study evaluates bone patellar tendon bone (BTB) autograft anterior cruciate ligament reconstruction (ACLR) patella defect dimensions over time and associates these with patient reported outcomes (PROs).

Significance: BTB autograft ACLR has the drawback of higher rates of anterior knee pain compared to other autograft options, however the impact of patellar defect size is unknown.

Methods: Knee MRI, absolute and relative defect/patella dimensions, and Knee injury and Osteoarthritis Outcome Scores (KOOS) were obtained 6 weeks and 1 year postoperatively in 23 patients (15 males) mean age 25.5$\pm$5.2 years, who underwent BTB ACLR.

Results: A shorter relative defect length at 6 weeks post-surgery was associated with better KOOS scores at 1 year postoperatively in KOOS subscales of Pain ($p = 0.046$), Activities of Daily Living ($p = 0.011$), Function in Sports and Recreation ($p = 0.001$), and knee related Quality of Life ($p = 0.023$). Of the participants with a relative defect length < 0.5 relative to the pole-to-pole patella length, 8/8 (100%) achieved Patient Acceptable Symptom State thresholds for both Pain and Sports/Rec.

Conclusion: Shorter relative patellar defect length after BTB ACLR is associated with better PROs at 1 year and should be a consideration during graft harvest.

Combined Root and Body (CRAB) Lateral Meniscus Tears in the Adolescent Population: An Underrecognized and Underreported Tear Pattern

Karch M. Smith, MD
University of California, San Diego

Purpose: To describe the incidence and associations of combined root and body (CRAB) meniscal tears in adolescent patients undergoing anterior cruciate ligament (ACL) reconstruction.

Significance: A distinct pattern involving two lateral meniscus tears—one involving the posterior root and the other involving the body—has been anecdotally observed, however has yet to be reported.

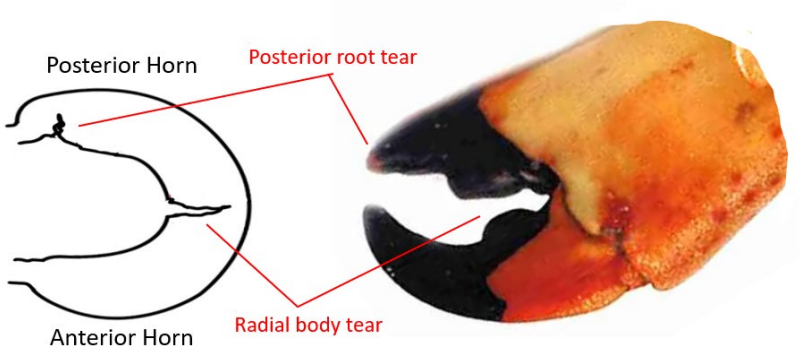
Methods: A retrospective review of adolescents undergoing ACL reconstruction was performed to determine the incidence of CRAB tears. Demographic, injury, and imaging findings were analyzed among those with and without CRAB tears.

Results: 227 ACL reconstructions were performed. 122 (54%) had a tear involving the lateral meniscus. 23 CRAB tears were identified,10.1% of all ACL tears and 60.5% of all root tears. Atypical bone bruising was seen in 43%, a posterolateral corner injury in 26%, a deep MCL injury in 57%, a medial meniscus tear in 43%, and lateral meniscus extrusion in 35%. CRAB tears were more likely to have atypical bone bruising (p=0.039) and elevated BMI (p=0.048). 17/23 (74%) of the CRAB tears were missed by the radiologist.

Conclusion: If a lateral posterior meniscal root tear is identified arthroscopically, the surgeon should carefully evaluate the body to ensure there isn't a second tear that could otherwise be missed.

Figure:

Combined root and body (CRAB) tear of the lateral meniscus



Comparison of Retear Rates and All-Cause Reoperation Rates in Pediatric and Adolescent ACL Reconstructions Using Bone Patellar Tendon and Quadriceps Tendon Grafts

Kyla Petrie, MD
University of California, San Francisco

Introduction: The rate of pediatric and adolescent ACL tears continues to rise as young athletes continue to engage in competitive, year-round sporting activity. Unlike the adult population, young patients undergoing reconstruction are faced with a higher risk of re-tear as well as balancing potential growth disturbances. Although the bone patellar tendon bone (BTB) grafts have historically been the graft of choice for athletes, quadriceps tendon grafts have gained increasing popularity. Yet, there is limited comparative data between these grafts in the pediatric and adolescent population.

Methods: We retrospectively reviewed the charts of patients who underwent ACL reconstruction with BTB autograft or quad tendon autograft between 2013 and 2023. We gathered data on age, gender, graft type, high-risk sporting participation, post-operative compliance, associated injuries, length of follow-up, incidence of repeat surgery on the ipsilateral knee, graft re-tear and patient reported outcomes. We then attempted to call all patients to gather more long-term follow-up data as well as data on return to sport rates.

Results: We identified 158 patients. The cohort of patients was 38.1% female with a mean age of 16.47 years (SD 1.50 years, range from 13 - 22). There was a significant difference in all cause reoperation rates (5.6% BTB vs 1.3% quad, p = <0.001) with the BTB graft having a higher reoperation rate than quad tendon graft. There was no significant difference in graft retear rate (3.2% BTB vs 0.6% quad; p = 0.494) based on graft type used. Gender (100% who retore were male, p = .048) and compliance with the post-operative protocol were both significantly associated with graft retear (83% who retore were not compliant, p < 0.001). Patients who returned to sport had significantly higher IKDC scores compared to those who did not (94.14 vs 72.24; $t(39) = 15.438$, $p < 0.001$). Gender and return to sport approached significance, with 70% of the males returning to sport at the same level compared with only 45% of the females (p = .079). Finally, no variables were significant predictors of the post-operative IKDC in our regression analysis, nor were there any significant differences in post-operative IKDC scores based on graft type.

Conclusion: There was a significant difference in all-cause reoperation rates, but no significant difference in graft retear rates, between BTB and quadricep tendon autograft. However, there appeared to be a trend toward lower graft retear rates with quad tendon autograft. Gender and compliance with post-operative restrictions were both associated with higher retear rates. Patients with higher post-operative IKDC scores were significantly more likely to return to sport at the same level. There was a trend toward male patients returning to sport compared to female patients.

Specific Patterns of Anterior Acetabular Cystic Change in the Absence of Other Degenerative Changes: A Potential Clue for Occult Instability Especially in Borderline Dysplasia Cases

Carson Gardner, MD
San Francisco Orthopaedic Residency Program

Purpose: To describe a unique and consistent pattern of acetabular cystic change in the absence of other degenerative changes in a series of patients with borderline dysplasia that might be suggestive of occult instability.

Significance: The presence of acetabular dysplasia can affect surgical treatment decisions and outcomes in patients with femoroacetabular impingement (FAI) being considered for hip arthroscopy. Ruling out occult instability is paramount but often challenging, especially in cases of mild or 'borderline' dysplasia, and additional clinical and radiographic clues are valuable for clinical decision making.

Methods: We retrospectively reviewed patients noted to have a unique pattern of medial and anterior acetabular cystic change. We collected characteristics and radiographic data and analyzed the results of each patient's clinical course.

Results: 36 hips met inclusion criteria (mean age 32.3y, 25F:1M, mean LCEA 14.5 deg). 12 (33%) hips had 'borderline' dysplasia (LCEA range 20.1-24.8). Four (25%) borderline hips underwent isolated arthroscopy for FAI, and all 4 of these went on to future PAO for persistent pain related to occult instability.

Conclusion: The unique pattern of cystic change which we describe in these patients with borderline dysplasia could be a potential clue for identifying occult instability.

Risks for Reoperation to Promote Union in Periprosthetic Distal Femur Fractures

Benjamin Crawford, MD
University of California, San Francisco
Health St. Mary's

Purpose: To determine risk factors for reoperation to promote union for periprosthetic distal femur fractures (PDFF).

Significance: A high rate of reoperation to promote union for PDFF in current literature highlights the challenge these fractures bring to orthopaedic surgeons. A better understanding of the risk factors for reoperation of PDFF will improve our ability to treat them effectively.

Methods: This was a retrospective, multi-centered comparative study of patients with PDFF managed operatively with open reduction and internal fixation (ORIF) with a lateral locked plate (LLP). The primary outcome measure was reoperation to promote union. Univariate and multivariate analyses were performed.

Results: A total of 7 of 52 (13.5%) patients required a reoperation to promote union. There were no differences between groups for baseline demographics, Su classification, or open injury. Multivariate analysis identified risks factors including notching pre-operatively (OR 1.26, $p=0.007$), increased number of screws through a fracture line (OR 1.27, $p<0.001$), plate length <12 holes (OR 1.15, $p=0.020$), and fewer proximal locking screws (OR 0.95, $p=0.043$).

Conclusion: This study identified notching pre-operatively, presence of screws through the fracture line, plate length <12 holes, and fewer proximal locking screws to be independent risk factors for reoperation to promote union.

Osteoarthritis and Total Joint Arthroplasty in Housing Insecure Patients at a Safety-Net Hospital in a Major Urban City

Kelechi Nwachuku, MD
University of California, San Francisco

Purpose: Hypothesis: People experiencing homelessness (PEH) are under-utilizing arthroplasty services; when they do, complications rates are comparable to stably-housed individuals.

Significance: Evidence suggests higher rates of arthritis in PEH and the housing-insecure population. While PEH suffer from OA at high rates, anecdotal evidence indicates they lack access to orthopaedic services. This project investigated whether PEH/housing-insecure are utilizing arthroplasty services as often as stably housed individuals.

Methods: We examined new patient visits to the Arthroplasty Clinic at a safety-net hospital in 2022. Patients were grouped by housing status, and data was extracted from clinical records. Presentation rates were compared with data from the 2022 San Francisco Homeless Count. Descriptive statistics and logistic regression were employed.

Results: Of 250 patients, 4 were unhoused, and 41 were unstably housed. Significantly fewer PEH presented to the clinic compared to those stably-housed ($X^2 = 11.37$, $p = 0.0007$). PEH/housing-insecure patients had worse KL scores. No significant differences were found in post-surgical outcomes.

Conclusion: PEH accessed arthroplasty services at lower rates than housed individuals, despite a high disease burden. No differences in outcomes were found between housing groups, suggesting barriers to care occurred before clinical presentation, highlighting the need to address disparities in access to orthopaedic care for PEH.

Navigated and Robotic Total Knee Arthroplasty (TKA) Do Not Confer Improved 5-Year Survivorship Compared to Conventional TKA: An Analysis from the American Joint Replacement Registry (AJRR)

Alexa K. Pius, MD
Stanford University

Purpose: To compare the outcomes of computer-assisted navigation (nTKA) and robotics (rTKA) during primary TKA to those of conventional instrumentation (cTKA) at 5 years.

Significance: Use of navigation and robotics has been shown to improve implant position and minimize outliers compared to cTKA, but whether this impacts survivorship is unknown.

Methods: The AJRR Medicare-linked dataset was analyzed for primary TKA procedures between January 2017 and December 2022. Data were stratified into patients who underwent nTKA (N = 20,777), rTKA (N = 22,022), or cTKA (N=131,992). Rates of all-cause revision, mechanical loosening, and other mechanical complication were determined at five years postoperatively. The survival model was adjusted for age, sex, fixation type, and year.

Results: The survival model found that the use of computer navigation was not significant in TKA all-cause revision (P = 0.32) or mechanical loosening (P = 0.91) but was significant for other mechanical complications (P = 0.004). Robotics use was not significant in TKA all-cause revision (P = 0.75), mechanical loosening (P = 0.42), or other mechanical complications (P = 0.46).

Conclusion: Navigation and/or the use of robotics at the time of primary total knee arthroplasty did not demonstrate a decrease in the need for revision at 5-year follow-up.

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Metal Femoral Heads Do Not Increase Serum Metal Ions Compared with Ceramic Femoral Heads in Primary Total Hip Arthroplasty

John Shapton, MD
San Francisco Orthopaedic Residency Program

Purpose: Ceramic femoral heads are increasingly favored over metal heads in primary total hip arthroplasty (THA), partly due to concerns about metal wear associated with metal-on-polyethylene (MoP) implants. However, data comparing serum metal ion levels between MoP and ceramic-on-polyethylene (CoP) implants remain limited.

Significance: Understanding the clinical impact of metal wear in MoP versus CoP implants

Methods: Patients who underwent primary THA between January 2015 and May 2017 were included. All received an uncemented femoral stem with either a ceramic (n=52) or cobalt chrome (n=57) head and a highly cross-linked polyethylene (XLPE) liner. Serum cobalt (Co) and chromium (Cr) levels were assessed at a minimum of five years postoperatively.

Results: 109 patients were included. Detectable serum chromium was found in 91.2% of MoP and 84.6% of CoP patients, with no significant difference in mean levels (0.26 vs 0.20 mcg/L; p=0.29). Detectable cobalt was present in 43.9% of MoP and 26.9% of CoP patients, also with no significant difference in mean levels (0.25 vs 0.17 mcg/L; p=0.15).

Conclusion: MoP implants did not show higher cobalt or chromium levels than CoP implants at ≥5-year follow-up.

Perioperative Bleeding Complications of Vertebral Body Resection in Patients with and without Prior Spine Infection

Stephanie Chang, MD
San Francisco Orthopaedic Residency Program

Purpose: To compare perioperative bleeding complications of vertebral body resection in patients with and without spine infection

Significance: Corpectomy and 3-column osteotomies involve some degree of vertebral body resection and is used for infections and non-infectious spine pathologies. Previous and ongoing infection can result in inflammation and scarring around the spine, potentially increasing intraoperative bleeding, drain output, blood product needs, operative time and hospital stay.

Methods: Retrospective cohort study analyzing patients undergoing thoracolumbar corpectomy or 3CO at a tertiary teaching hospital from 2007-2023. Primary outcomes were estimated blood loss and 48-hour drain output. Secondary outcomes were blood transfusion, operative time and length of stay.

Results: 42 patients met the inclusion criteria. About one-third of the patients had spinal pathology of non-infectious etiology (n=16), one-third with previous spine infection (n=10) and one-third with active spine infection (n=16). SSII was highest in the “no infection” group (21.47, p=0.001). One-way ANOVA revealed statistically significant differences in EBL and 48-hour drain output ($p<0.05$). EBL was highest in the “no infection” group (2625 mL; p=0.030) while 48-hour drain output was highest in the “prior infection” group. (980 mL; $p<0.001$).

Conclusion: Surgical invasiveness was predictive of perioperative blood loss, while history of spine infection was not.

Reciprocal Changes in Sagittal Spinal Alignment Are Similar After L5-S1 and L4-S1 Anterior Lumbar Interbody Fusion

Thaddeus Woodard, MD
University of California, San Diego

Purpose: This analysis assessed sagittal alignment changes throughout the lumbar spine following Anterior Lumbar Interbody Fusion (ALIF) at distal lumbar segments.

Significance: ALIF is a common treatment for distal lumbar pathology, offering powerful segmental sagittal correction. However, the effects on unfused proximal segments remain unclear.

Methodology: Pre-operative (within 1 year) and 3-month post-operative lateral radiographs were analyzed. Measurements included lordosis of L1-S1 (LL), L1-L4, L4-S1, L4-L5, and L5-S1, along with pelvic tilt (PT). Patients undergoing L5-S1 or L4-S1 ALIF were compared using one-sample t-tests ($p < .05$).

Results: Among 82 patients (L5-S1 [n=40], L4-S1 [n=42]; 62% male; mean age 55 ±13), most received posterior instrumentation (n=75). At 3 months, LL increased by 4° (p=.08), L4-S1 by 7° (p<.001), and L5-S1 by 6° (p<.001), while L1-L4 and PT decreased by 4° (p=.01) and 3° (p=.006). L5-S1 fusions showed a loss in L4-L5 lordosis, whereas L4-S1 fusions gained (+3° vs -2°; p<.001). L4-S1 fusions achieved greater L4-S1 lordosis increases than L5-S1 fusions (9° vs 6°; p=.04). LL, L1-L4, and PT changes did not differ significantly between groups ($p > .21$).

Conclusion: Although ALIF improved lordosis at fused levels, compensatory proximal loss reduced its net corrective effect, impacting alignment goals in limited fusion constructs.

Comparative Analysis of Postoperative Outcomes in Type 1 versus Type 2 Diabetes Mellitus Patients Undergoing Spinal Fusion

Thomas Olson, MD
University of California, Los Angeles

Purpose: This study evaluates postoperative outcomes in patients with Type 1 Diabetes Mellitus (T1DM) versus Type 2 Diabetes Mellitus (T2DM) undergoing spinal fusion procedures.

Significance: Diabetes poses increased surgical risks; however, outcomes between diabetes subtypes (T1DM vs. T2DM) remain inadequately explored, limiting targeted perioperative management strategies.

Methods: A retrospective analysis using a national health database included 1,261 propensity score-matched pairs (T1DM vs. T2DM) undergoing spinal fusion from 2015 to 2023. Outcomes analyzed included infections, readmissions, fractures, gait abnormalities, reoperations, and mortality within one year post-surgery, using risk differences, hazard ratios, and Kaplan-Meier survival analysis.

Results: T1DM patients showed significantly higher risks than T2DM for postoperative infections (3.4% vs. 1.2%, HR=2.88), readmissions (39.0% vs. 11.0%, HR=4.19), fractures (3.9% vs. 2.0%, HR=2.02), reoperations (7.6% vs. 2.6%, HR=3.04), and mortality (5.3% vs. 1.5%, HR=4.11). Differences persisted significantly in cervical and lumbar fusion subgroups for readmission and mortality.

Conclusion: Patients with T1DM experience significantly worse postoperative outcomes compared to T2DM, highlighting a need for diabetes-specific perioperative management, improved glycemic control, and targeted interventions to mitigate risks and enhance outcomes following spinal fusion.

Muscle Gene Expression and Cellular Morphology in Individuals with Adult Spinal Deformity Who Develop Proximal Junctional Failure

Pearce B. Haldeman, MD
University of California, San Diego

Purpose: Proximal Junctional Failure (PJF) remains a prevalent complication in individuals with adult spinal deformity (ASD), and paraspinal muscle quality has been associated with increased PJF risk.

Significance: Characterize genetic pathways and morphologic features of muscle in those who do and do not develop PJF.

Methods: 34 individuals with ASD undergoing at least 4 level spine fusion to the pelvis received an intraoperative paraspinal muscle biopsy 3 levels below the upper instrumented vertebra (UIV). 16 individuals who developed PJF were sex- and level-matched to 18 individuals without PJF. Differential gene expression using qPCR, histologic measures of muscle fiber size, degeneration, and biopsy composition (% of fat, fibrosis, muscle) were compared between groups.

Results: Patients were 79% female with a BMI of 25(9). The PJF group trended toward older age (72(8) vs 63(18) yrs(p=0.086)). Follow up duration was 43 months(range:30-59). In the PJF group, the myogenic gene ASB15 was 2.18-fold change (FC) downregulated (p=0.0080), and age adjusted fatty metabolism gene FABP4 was significantly upregulated (FC=1.42,p=0.040) versus non-PJF patients. There were no differences in muscle fiber size between groups. Greater collagen content correlated with expression of FABP4(r=-0.44,p=0.016).

Conclusion: Paraspinal muscles in those with ASD who develop PJF demonstrate lower muscle growth and higher fatty metabolism gene expression.

Gender and Tumor Size Predict Recurrence in Giant Cell Bone Tumors

Christopher Hamad, MD
University of California, Los Angeles

Purpose: This study aimed to evaluate the impact of gender and tumor size on the recurrence risk of giant cell tumors (GCTs) of bone.

Significance: Understanding predictors of GCT recurrence can guide treatment and surveillance strategies, potentially improving patient outcomes.

Methods: A retrospective cohort analysis was conducted on 118 patients with pathologically confirmed GCTs treated at a single institution. Clinical data, tumor characteristics, and recurrence outcomes were collected. Univariate and multivariate logistic regression analyses were performed to assess associations between recurrence risk and gender, tumor size, and clinical variables.

Results: Females had significantly higher recurrence rates compared to males (48.4% vs. 32.0%, $p<0.05$) and more frequent multiple recurrences (mean 4.29 vs. 2.33, $p<0.05$). Smaller tumors were independently associated with increased recurrence risk (OR=0.978; $p<0.05$). Pathologic fractures, socioeconomic factors, and insurance status showed no significant association with recurrence.

Conclusion: Female gender and smaller tumor size significantly predict increased recurrence risk in patients with GCTs. Socioeconomic disadvantage was not associated with recurrence. These findings emphasize the need for targeted surveillance and further investigation into biological factors influencing recurrence.

Predictive Factors of Having a Second UBC Related Pathologic Fracture

Mathangi Sridharan, MD
University of California, Los Angeles

Purpose: This study examines factors predictive of a second pathologic fracture related to unicameral bone cysts (UBC).

Significance: This can further inform timing of surgical fixation of UBC.

Methods: All patients presenting with UBC at a single institution between 1/1/2012 and 1/1/2025 were retrospectively reviewed. Variables collected were age, gender, insurance status, pain level, anatomic site, pathologic fracture at presentation, location in bone (epiphysis, diaphysis, metaphysis), cyst size (<1/3, 1/3-2/3, >2/3 bone width), cortical involvement, and active status (<10mm from physis). Primary outcome was second pathologic fracture. Descriptive statistics and logistic regression analysis were performed (Stata). Significance was set at $P<0.05$.

Results:179 patients were included. Average age was 16.3+/-15.9. 30 patients (16.7%) had minimal pain, 56 (31.3%) moderate, and 14 (7.8%) severe at presentation. 140 (78.2%) cysts had cortical involvement. Most cysts were >2/3 bone width, 146 (83.9%). 125 (69.8%) patients presented with a pathologic fracture. 27 (15.1%) patients had a second pathologic fracture; predictive factors were skeletal immaturity (OR 10.6, P=0.007), active cysts (OR 2.4, P=0.06), and public insurance status (OR 3.2, P=0.04).

Conclusion: Younger age, associated pain, and close proximity to physis are predictive of having a second UBC-related pathologic fracture.

Characteristics and Recurrence Risk of Upper Extremity Soft Tissue Sarcoma

Nicole J. Newman-Hung, MD
University of California, Los Angeles

Purpose: To elucidate patient, tumor, and treatment-specific factors that contribute to local recurrence (LR) risk for upper extremity soft tissue sarcoma (UE STS).

Significance: LR rates after surgical resection of UE STS are high. Predictors of LR specific to UE STS remain unclear.

Methods: A sarcoma center surveillance database was queried from 2012-2022 for all patients treated for primary UE STS. Demographics, presenting tumor features, treatment details, and outcomes were recorded. Statistical analyses were performed.

Results: 190 patients with UE STS had an average clinical follow-up of 4.9 years. LR occurred in 45 patients (23.7%). Average tumor size was 6.5cm. Multivariable analysis identified female sex (OR 2.94, p=0.002), older age (OR 1.02, p=0.03), initial excision at outside hospital (OR 4.69, p=0.001), and positive/close margins (OR 3.53, p=0.005) as risk factors for LR.

Conclusion: Identifying risk factors specific to UE STS is important for interdisciplinary management and patient counseling, as unique predictors may exist. Modifiable risk factors for LR of UE STS may include undergoing index surgery at a non-sarcoma center and having positive/close margin surgery. Surgeons should have low threshold for sarcoma center referral for concerning upper extremity soft tissue masses.

Income Impacts Overall but not Cause-Specific Survival in Patients with Chondrosarcoma: A Population Based Study from the SEER Database

Brandon Gettleman, MD
University of California, Los Angeles

Purpose: To evaluate the prognostic significance of income status in chondrosarcoma using both Cox Proportional Hazards and Fine-Gray competing risk models.

Significance: Chondrosarcoma is a common bone cancer, yet data on how socioeconomic status (SES) affects survival are scarce. Previous studies used the Cox Proportional Hazards model, which might overestimate risk compared to cause-specific models like the Fine-Gray model.

Methods: A retrospective cohort study (1975 to 2021) of patients with chondrosarcoma was performed using the SEER database. Patients were stratified by SES indicators, including income (low: <$55,000; middle: $55,000–$70,000; high: >$70,000) and rurality (urban vs. rural). Cox and Fine-Gray models were used for survival analysis.

Results: 3,678 patients met the inclusion criteria (age, 53.3±17.1 years) with income distributions as follows: 72.5% high, 18.3% middle, and 9.2% low. Cox analysis identified low-income (hazard ratio [HR]=1.43, 95%-confidence interval [95%-CI]: 1.10–1.84, p=0.006) and rurality (HR=0.71, 95%-CI: 0.55–0.90, p=0.006) as significant prognostic factors. These findings were attenuated in the Fine-Gray model: low-income (sub-hazard ratio [SHR]=1.36, 95%-CI: 0.95-1.94, p=0.089) and rurality (SHR=0.76, 95%-CI: 0.54-1.07, p=0.122). Mesenchymal and dedifferentiated subtypes and pelvic tumors were associated with higher mortality across models.

Conclusion: SES influences chondrosarcoma survival, but its effect on cause-specific mortality decreases when competing risks are considered.

Does Retrograde Insertion of a Threaded Intramedullary Nail for Metacarpal Fracture Fixation Weaken Biomechanical Properties of the Extensor Mechanism?

Christopher Chung, MD
Stanford University

Purpose: To quantify extensor mechanism tensile load to failure (LTF), stiffness, and failure scenario after utilizing various retrograde threaded intramedullary nail insertion techniques, hypothesizing no significant decrease in biomechanical properties compared to native tendon.

Significance: Percutaneous retrograde intramedullary fixation has become popular for metacarpal fractures, but risks extensor tendon injury. Mini-open tendon-sparing approaches may be utilized, but their comparative biomechanical impact remains unquantified.

Methods: Sixty-four cadaveric fingers were divided into control and 3 testing groups for implant drilling/insertion technique: trans-tendinous, trans-sagittal band, and longitudinal tendon split-repair. After instrumentation, specimens were subjected to tensile loading to assess LTF, stiffness, and failure scenario. LTF and stiffness were analyzed utilizing mixed-effects linear regression. Fischer's exact test assessed differences in failure scenario.

Results: No significant differences in LTF comparing control (398.4N [SD=77.0N]) versus trans-tendinous (355.0N [94.7N]), trans-sagittal band (384.6N [110.4N]), and longitudinal split-repair (347.9N [123.4N]). Stiffness averaged 43.2N/mm, with no difference between groups. Failure occurred at implant insertion site in 44% trans-tendinous, 25% longitudinal split-repair, and 13% trans-sagittal band specimens.

Conclusion: Retrograde intramedullary implant placement through the extensor tendon or via tendon-sparing approaches does not significantly compromise extensor mechanism biomechanical properties, and likely has minimal clinical impact on extensor integrity during early functional motion.

Guided Growth Treatment for Lower Extremity Coronal Angular Deformity Correction

Muayad Kadhim, MD
University of California, San Francisco

Purpose: To examine the outcome of lower limb angular deformity correction following guided growth treatment (GGT).

Significance: One of the largest single center cohort of patients undergoing GGT for coronal plane malalignment.

Methods: A single center retrospective review of skeletally immature patients with coronal plane angular deformities who underwent GGT over a 13-year period (2012 – 2024). Radiographic parameters were assessed preoperatively and at latest follow up.

Results: 104 patients (69 boys, 53%) with 174 affected limbs underwent GGT at mean age of 11.6 ± 2.6 years. The most common etiology was developmental in 69 patients (53%). Instrumented GGT was performed in 167 limbs (95%) using tension band plates in138 (83%) and screws in 29 (17%) limbs. 51 (29%) limbs had improved but incomplete correction at the last follow up, more in males and those with BMI < 5% ($p < 0.05$). Higher rate of under-correction was noted in patients with varus (66% vs. 17%, $p<0.0001$) and non-instrumented GGT (71% vs 28%, $p=0.012$). 4 patients (4%) had unplanned hardware removal for pain, prominence or overcorrection.

Conclusion: While GGT is safe and effective in addressing angular deformity, patient selection and timing of procedure are critical to normalize limb alignment by skeletal maturity.

How Did Orthopaedic Surgeons Perform in the 2022 Merit-based Incentive Payment System (MIPS)

Vikram Gill, MD
University of California, San Diego

Purpose: Determine what factors are associated with receiving either a penalty or bonus on MIPS in 2022, the most recent year with published data.

Significance: The performance of orthopaedic surgeons in MIPS has been evaluated once before, by Cwalina et al in 2018. Given recent changes to MIPS, it is important to reevaluate this.

Methodology: CMS datasets were used to examine all orthopaedic surgeons who participated in MIPS in 2022 (12,197 total). Surgeon characteristics, practice size, billing practices, patient demographics, and MIPS performance were assessed. Multivariable regression models determined factors associated with receiving either a penalty or exceptional performance bonus.

Results. The mean (SD) MIPS score was 80.5 (16.5). 1,972 (16.2%) surgeons received a penalty, while 4,122 (33.8%) received an exceptional bonus. Male gender (OR:1.03, p=0.02), <400 Medicare beneficiaries (OR:1.04, p=0.003), increased patient comorbidities (OR:1.06, p<0.001), practice size <50 members (OR:1.13, p<0.01), and >2,500 services billed (OR:1.06, p<0.001) were associated with receiving a penalty. A practice size >50 members was the strongest factor associated with receiving a bonus (OR 1.10, p<0.001).

Conclusion: Practice size appears to have the largest impact on MIPS performance among orthopaedic surgeons. Until MIPS methodology accounts for this difference, small practices should be more aware of factors linked to MIPS outcomes.

Osteochondral Autograft from the Proximal Tibiofibular Joint for Reconstruction of Acute Tibial Plateau Fractures with Severe Chondral Defects

Oliver Dong, MD
San Francisco Orthopaedic Residency Program
At UCSF Health St. Mary's Hospital

Purpose: We report a novel technique for reconstructing acute tibial plateau fractures with severe articular defects using an osteochondral autograft from the ipsilateral proximal tibiofibular joint.

Significance: There are limited options for reconstruction of tibial plateau fractures with severe comminution with small free articular and delaminated cartilage fragments. Allografts are difficult to obtain in the acute setting, and total knee replacement is not ideal for young patients.

Methods: Three patients with closed acute tibial plateau fractures were treated with open reduction and internal fixation through a standard lateral approach, combined with osteochondral autograft harvested from the ipsilateral proximal tibiofibular joint. The fibular head was preserved to maintain the LCL attachment. Patients included a 37-year-old male with a Schatzker VI fracture and two females aged 24 and 54 with Schatzker II fractures.

Results: One patient developed a knee flexion contracture, which completely resolved following open release at 3 months, with pain-free function by 12 months post-op. No complications were seen in the other two patients. No patients had infections.

Conclusion: This is the first reported use of a proximal tibiofibular osteochondral autograft for tibial plateau fracture reconstruction. This technique offers a new option for restoring the articular surface in complex fractures with minimal added morbidity.

Effect of Body Mass on Reoperation Rate for Distal Femur Fractures

Anna Martin, MD
University of California, San Francisco

Purpose: Hypothesis: increased patient body mass correlates with increased rate of reoperation to promote union and increased rate of usage of dual fixation constructs.

Significance: Obesity is a known risk factor for reoperation for nonunion in distal femur fractures. Increased load placed on fixation constructs may contribute to nonunion.

Methods: Retrospective review screening 329 distal femur fractures treated by fellowship-trained orthopaedic trauma surgeons. Forty-seven patients with high-body-mass (>110kg), and age-matched standard-body-mass control group were analyzed. Reoperation to promote union and dual-fixation were used as primary and secondary outcomes. Logistic regression was used to examine association between body mass and reoperation rate to promote fracture union.

Results: 47/329 (14%) patients had high-body-mass (>110kg). Reoperation rate was 2.1% (1/47) in standard-body-mass-group, and 10.6% (5/47) in high-body-mass-group. Dual-fixation rate was 8.5% (4/47) in standard-body-mass-group and 19.1% (9/47) in high-body-mass-group. Logistic regression indicated body mass was statistically significantly associated with reoperation rate to promote fracture union ($p=0.04$) for 60 kg increase in mass. Logistic regression showed a nonsignificant ($p=0.20$) correlation between increased body mass and use of dual fixation.

Conclusion: Increased body mass is associated with increased reoperation rate to promote union in distal femur fractures. Greater sample size may show statistically significant association between increased use of additional fixation to treat distal femur fractures with increased body mass.

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National Resident Research Symposium
Virtual, OREF, Rosemont, IL
November 6, 2024

2024 OREF National Resident Research Symposium Champion
Zaamin Hussain, MD
Emory University
Incision or Excision? What to do with the A1 Pulley for Trigger Finger: Results of a Multi-Surgeon Randomized Controlled Trial

Top Scoring Residents
Benjamin Averkamp, MD
Carolinas Medical Center/OrthoCarolina
Repair Technique and Fellowship Training Background Predict Major and Minor Complications after Achilles Tendon Repair

Tristan J. Elias, MD
University of Texas Medical Branch
Osteochondral Allograft Reaming Significantly Affects Chondrocyte Viability

Kyleen Jan, MD
Rush University Medical Center
THA-10 Score Predicts Conversion to Total Hip Arthroplasty After Hip Arthroscopy for Femoroacetabular Impingement Syndrome at Minimum 10-Year Follow-Up

Brian Shear, MD
University of Maryland
Your iPhone Knows How You Will Recover from Your Fracture

Presenters' Choice
Wade Karam, MD
UTHealth Houston, McGovern Medical School
Rapid Sequence MRI vs CT Capsular Width Sign for Detection of Occult Femoral Neck Fractures Associated with Femoral Shaft Fractures

Southwest Resident Research Symposium
UTHealth Houston,
McGovern Medical School, Houston
October 11, 2024

First Place Award Winner
J. Matthew Helm, MD
UTHealth Houston McGovern Medical School
The Effect of Anterior Closing Wedge Slope Reducing Osteotomy on Coronal Alignment – Considerations with Regards to Osteotomy Technique and Degree of Slope Correction

Second Place Award Winners
Tristan J. Elias, MD
University of Texas Medical Branch
Osteochondral Allograft Reaming Significantly Affects Chondrocyte Viability

Wade Karam, MD
UT Health Houston McGovern Medical School
Rapid Sequence MRI vs CT Capsular Width Sign for Detection of Occult Femoral Neck Fractures Associated with Femoral Shaft Fractures

Third Place Award Winners
Hayden Anz, MD,
UTHealth Houston McGovern Medical School
Biomechanical Analysis of Contact Pressures in Scaphotrapeziotrapezioid Arthritis

Kenneth Ford, MD
UTHealth Houston McGovern Medical School
Vascular Injury in Tibial Plateau Fractures: Incidence and Risk Factors

Guillermo R. Pechero Jr., MD
UTHealth Houston McGovern Medical School
Does Reduction Technique for Hip Fractures Matter? A Comparison of Closed, Open and Percutaneous Reduction Techniques in the Treatment of Intertrochanteric Femur Fractures

Presenters' Choice Award Winner
Ayane Rossano, MD
Dell Medical School at the University of Texas at Austin
Social Work Interventions Improve Outcomes in Total Joint Arthroplasty: An Effort to Improve Equity at an Urban Musculoskeletal Integrated Practice Unit

Southeast Resident Research Symposium
University of South Florida, Tampa
October 4, 2024

First Place Award Winner
Zaamin Hussain, MD
Emory University
Incision or Excision? What to do with the A1 Pulley for Trigger Finger: Results of A Multi-Surgeon Randomized Controlled Trial

Second Place Award Winners
Benjamin Averkamp, MD
Carolinas Medical Center/OrthoCarolina
Repair Technique and Fellowship Training Background Predict Major and Minor Complications after Achilles Tendon Repair

John T. Wilson, MD
University of South Florida/Florida Orthopedic Institute
Conventional versus Robotic-Arm Assisted Medial Uni-compartmental Knee Arthroplasty: A-20-Year Analysis of Radiographic and Clinical Outcomes

Third Place Award Winners
Bradley Alexander, MD
University of Mississippi Medical Center
Comparison of Recent Trends in Medicare Utilization and Reimbursement for Cervical Spine Discectomy and Fusion Procedures Versus Cervical Disc Arthroplasty

Raahil Patel, MD
University of South Florida/Florida Orthopedic Institute
Early Success in Anterior Compartment Sparing Tibial Tubercle Osteotomy Utilizing Back-Cut Technique

Brittany Raymond, MD
University of Florida
Clinical Outcomes of Operative Management for Radial Tunnel Syndrome According to Surgical Approach: A Systematic Review

Presenters' Choice Award Winner
Aseel Dib, MD
Carolinas Medical Center/OrthoCarolina
Implant Selection in Distal Femur Fractures: An Analysis of Alignment and Outcomes

Western Resident Research Symposium
University of California, Los Angeles (UCLA)
September 4, 2024

First Place Award Winner
Seth Ahlquist, MD
University of California, Los Angeles (UCLA)
A Comparison of Total Knee Arthroplasty Outcomes Between Hemodialysis and Renal Transplant Patients

Second Place Award Winners
Molly A. Hulbert, MD
University of California, San Diego
A Community-Based Outreach Program Can Change Underrepresented Minority Student Perception of Orthopaedic Profession Fit and Attainability: Lessons from BONE Academy

Thomas E. Olson, MD
University of California, Los Angeles (UCLA)
Correction of Fixed Knee Flexion Deformity in Patients with Cerebral Palsy Using Suture Anchors for Anterior Distal Femur Hemi-Epiphysiodesis

Third Place Award Winners
Reinaldo E. Colon-Morillo, MD, LT, MC, USN
Naval Medical Center San Diego
Proximal Pole Scaphoid Fracture Nonunion Treated with Ipsilateral Hamate Transfer

Abhinav Sharma, MD
University of California, Irvine
Laminectomy with Fusion for Cervical Spondylotic Myelopathy is Associated with Higher Early Morbidity and Risk of Perioperative Complications Compared to Laminectomy Alone

Jonathan Yu, MD
University of California, Los Angeles (UCLA)
How Have Total Joint Arthroplasty Implant Prices Changed Compared to Overall Costs and Reimbursements?

Presenters' Choice Award Winner
Rishi Trikha, MD
University of California, Los Angeles (UCLA)
From the Lab to the Clinic: Angiotensin Converting Enzyme Inhibition May Incur Infectious Risk

Mid-Atlantic Resident Research Symposium
MedStar Georgetown, Washington, DC
May 11, 2024

First Place Award Winner
Brian Shear, MD
University of Maryland Medical Center
Your iPhone Knows How You Will Recover from Your Fracture

Second Place Award Winners
Alex Gu, MD
George Washington University
Can Hip and Knee Arthroplasty Surgeons Help Address the Osteoporosis Epidemic

Denver Burton Kraft, MD
Medstar Georgetown University Hospital
Minimally Displaced Lateral Humeral Condyle Fractures: Optimizing Follow-up and Minimizing Cost

Third Place Award Winners
William Johns, MD
Thomas Jefferson University Hospital/Rothman Institute
Lower Opioid Prescription Quantity Does Not Negatively Impact Pain Control or Patient Satisfaction Following ACL Reconstruction: A Randomized, Prospective Trial

Matthew Kolevar, MD
University of Maryland Medical Center
Development of a Patient-Specific Cartilage Graft Using Magneti Resonance Imaging and 3D Printing

Matthew B. Weber, MD
Virginia Commonwealth University
Evaluation of Peripheral Nerve Perfusion in Tensioned Repairs

Presenters' Choice Award Winner
Micheal Raad, MD
Johns Hopkins Medicine
A New Morphologic Classification of Proximal Junctional Kyphosis Following Lower Thoracic to Pelvis Fusion in Adult Spinal Deformity Predicts Revision Surgery and Neurologic Complications

Midwest Resident Research Symposium
Rush University Medical Center, Rosemont, IL
May 3, 2024

First Place Award Winner
Kyleen Jan, MD
Rush University Medical Center
THA-10 Score Predicts Conversion to Total Hip Arthroplasty After Hip Arthroscopy for Femoroacetabular Impingement Syndrome at Minimum 10-Year Follow-up

Second Place Award Winners
Jonathan A. Ledesma, MD
University of Illinois at Chicago
A Prospective, Randomized Clinical Trial of Pedicle Lengthening Osteotomy Versus Open Decompression with Transforaminal Lumbar Interbody Fusion for Lumbar Degenerative Spondylolisthesis with Stenosis

Madeline Tiee, MD
Loyola University Medical Center
Sagittal Deformity of Garden Type I and II Geriatric Femoral Neck Fractures is Frequently Misclassified by Lateral Radiographs

Third Place Award Winners
Myles A. Atkins, MD
Rush University Medical Center
Risk Factors of Subchondral Insufficiency Fracture of the Knee in the Setting of Medial Meniscus Posterior Root Tears

Jordan Serotte, MD
University of Chicago
Time to Union in Ballistic vs. Blunt Pertrochanteric, Extra-Capsular Femur Fractures

Joseph Tanenbaum, MD
Northwestern McGaw Medical Center
The Natural History of Ulnar Collateral Ligament Injuries in Professional Baseball

Presenters' Choice Award Winners
Lohith Vatti, MD
University of Chicago
The Effect of Perioperative Dexamethasone on Functional Outcomes of Lower Extremity Long Bone Fracture Fixation

Luke Zabawa, MD
University of Illinois at Chicago
Knee Arthroplasty Reimbursement Dynamics: Inflation-Adjusted Analysis for 2006-2022

California Orthopaedic Association (Annual Meeting)
OREF Resident Award Winner

Emily Mills, MD
Keck School of Medicine University of Southern California
Preoperative Radiographic Findings Associated with Postoperative Spinopelvic Factors for Instability Following Total Hip Arthroplasty

OREF Edward C. McElfresh Awards for Best Resident Abstracts at Minnesota Orthopaedic Association Annual Meeting

Nicholas Reiners, MD
University of Minnesota
Outcomes of Geriatric Hip Fracture Patients with Associated Proximal Humerus Fracturs. Does Surgical Treatment of the Proximal Humerus Lead to Improved Mobility?

Austen Thompson, MD, PhD
Mayo Clinic
Impact of Intraoperative Periprosthetic Fractures During Cemented Hemiarthroplasty for Femoral Neck Fractures