



**Accreditation**

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Academy of Orthopaedic Surgeons and the American Shoulder and Elbow Surgeons. The American Academy of Orthopaedic Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

The American Academy of Orthopaedic Surgeons designates this live activity for a maximum of **7.25 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**Educational Objectives**

- Review basic science and orthopaedic problems relative to the shoulder and elbow.
- Examine the indications, techniques and results of various surgical procedures.
- Describe the management of common orthopaedic problems relative to the shoulder and elbow.
- Permit expert panelists to put into perspective new technologies.

Presenters are listed in **bold**.

*Leesa M. Galatz, MD, Program Co-Chair*  
*Peter B. MacDonald, MD, Program Co-Chair*

*Preliminary Program - Faculty and presentations are subject to change.*

7:25 am                      **Welcome and Opening Remarks**  
*William J. Mallon, MD, President*

**Session I: Basic Science**

**Moderators:** Asheesh Bedi, MD, and David L. Glaser, MD

**Paper 1**  
 7:30 am – 7:35 am      **Ibuprofen Impairs Capsulolabral Healing in a Rat Model of Anterior Glenohumeral Instability**  
*Jonathan D. Packer, MD, Arya Vartbi, MD, David Zhu, BS, Frances G. Javier, BS, Jennifer V. Garver, MD, Steven M. Tommasini, PhD, Theodore A. Blaine, MD*

**Paper 2**  
 7:35 am – 7:40 am      **Reduced Muscle Degeneration and Decreased Fatty Infiltration after Rotator Cuff Tear in a PARP-1 Knock-Out Mouse Model**  
*Michael Künzler, MD, Katja Nuss, DVM, Agnieszka Karol, DVM, Michael Schär, MD, Michael Hottiger, DVM, Brigitte von Rechenberg, DVM, Matthias A. Zumstein, MD*

**Paper 3**  
 7:40 am – 7:45 am      **Humeral Component Version in Reverse Shoulder Arthroplasty Affects Impingement in Activities of Daily Living**  
*Xiang Chen, MS, Andreas Kontaxis, MSc, PhD, Daniel Choi, MS, Julien Berhouet, MD, Timothy M. Wright, PhD, David M. Dines, MD, Edward V. Craig, MD, Russel F. Warren, MD, Lawrence V. Gulotta, MD*

**Paper 4**  
 7:45 am – 7:50 am      **Image-Based 3D Morphometric Analysis of the Clavicle Intramedullary Canal**  
*Peter Simon, PhD, Jazmine Aira, BS, Geoffrey P. Stone, MD, Sergio Gutierrez, PhD, Brandon Santoni, PhD, Mark A. Frankle, MD*

7:50 am – 8:00 am      **Discussion**

**Session II: Arthroplasty**

**Moderators:** Mark A. Mighell, MD, and Thomas R. Duquin, MD

8:00 am – 8:10 am      **How-To Video I: Arthroscopic AC Stabilization**  
*Peter J. Millett, MD, MSc*

**Paper 5**  
 8:10 am – 8:15 am      **Outpatient Total Shoulder Arthroplasty in the Ambulatory Surgery Center Environment Is a Safe Alternative to the Inpatient Hospital Setting: A Matched Cohort Study**  
*Tyler J. Brolin, MD, Ryan P. Mulligan, MD, Frederick M. Azar, MD, Thomas (Quin) Throckmorton, MD*

**Paper 6**  
 8:15 am – 8:20 am      **Tranexamic Acid Decreases Blood Loss in Total Shoulder Arthroplasty and Reverse Total Shoulder Arthroplasty**  
*Jeffrey T. Abildgaard, MD, Ryan McLemore, PhD, Steven J. Hattrup, MD*

**Paper 7**  
8:20 am – 8:25 am    **Patient Activity Levels after Reverse Total Shoulder Arthroplasty: What Are Patients Doing?**  
*Grant H. Garcia, MD, Samuel A. Taylor, MD, Brian DePalma, BA, Gregory T. Mahony, BA, Joshua S. Dines, MD, David M. Dines, MD, Russell F. Warren, MD, Edward V. Craig, MD, Lawrence V. Gulotta, MD*

**Paper 8**  
8:25 am – 8:30 am    **Immediate vs. Delayed Passive Range of Motion Following Total Shoulder Arthroplasty**  
*Patrick J. Denard, MD, Alexandre Lädermann, MD*

8:30 am – 8:40 am    **Discussion**

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### Session III: Rotator Cuff and Miscellaneous

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**Moderators:** John E. (Jed) Kuhn, MD, and Jon J.P. Warner, MD

**Paper 9**  
8:40 am – 8:45 am    **Accountable Care Organizations and the Effect of Public Disclosure of Surgeon's Operating Room Costs**  
*Luke S. Austin, MD, Nicholas J. Lombardi, BS, Alvin C. Ong, MD, Fotios P. Tjoumakaris, MD*

**Paper 10**  
8:45 am – 8:50 am    **The Effect of Neck-Shaft Angle, Glenosphere Size, and Cup Depth on Contact Mechanics in Reverse Shoulder Arthroplasty**  
*G. Daniel G. Langohr, MASC, Ryan Willing, PhD, John B. Medley, PhD, James A. Johnson, PhD, George S. Athwal, MD, FRCSC*

**Paper 11**  
8:50 am – 8:55 am    **Reoperation Rate Following Isolated Arthroscopic Rotator Cuff Repair**  
*Siddharth A. Mahure, MD, Brent Mollon, MD, FRCSC, Steven D. Shamah, BA, Joseph D. Zuckerman, MD, Young W. Kwon, MD, PhD, Andrew S. Rokito, MD*

**Paper 12**  
8:55 am – 9:00 am    **The Role of Vitamin D Deficiency in Rotator Cuff Integrity: Does It Affect Post-Operative Healing?**  
*Ryan M. Degen, MD, MSc, FRCSC, Danyal H. Nawabi, MD, FRCS (Orth), Julia Gromis, BA, Heather M. Kawalick, BA, Edward V. Craig, MD, Frank A. Cordasco, MD, Scott A. Rodeo, MD, Russell F. Warren, MD, Lawrence V. Gulotta, MD*

9:00 am – 9:10 am    **Discussion**

9:10 am – 9:40 am

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### Symposium I: How I Use Basic Science Data to Influence My Treatment of Rotator Cuff

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**Moderator:** Scott A. Rodeo, MD

**How I Use Basic Science Data to Determine Fixation Method for Rotator Cuff Repair**

9:10 am

**In Favor of Single Row Repair**  
*Keith Kenter, MD*

9:15 am

**In Favor of Double Row Repair**  
*Peter Lapner, MD*

**How I Use Basic Science Data to Determine Post-Operative Rehab**

9:20 am

**In Favor of Prolonged Post-Operative Immobilization**  
*Asheesh Bedi, MD*

9:25 am

**In Favor of Early Controlled Post-Operative Motion**  
*Jay D. Keener, MD*

**When I Consider Augmentation (Stem Cells, Patches, PRP, Etc.)**

9:30 am

**In Favor of "Biologic Augmentation"**  
*Eric T. Ricchetti, MD*

9:35 am

**There Is Limited Data to Support PRP, Bone Marrow Aspirate Concentrate, Patches, Etc.**  
*Stephen C. Weber, MD*

9:40 am – 10:10 am

**Break**

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### Session IV: Elbow

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**Moderators:** April D. Armstrong, MD, and Ryan T. Bicknell, MD, MSc, FRCSC

**Paper 13**

10:10 am – 10:15 am

**Correlation of the CT, MRI, and Intraoperative Findings of Elbow Osteochondritis Dissecans (OCD)**  
*Ezekiel E. Shotts, MD, Mark S. Collins, MD, Jeffrey R. Bond, MD, Shawn W. O'Driscoll, PhD, MD*

**Paper 14**

10:15 am – 10:20 am

**Arthroscopic vs. Open Lateral Release for the Treatment of Lateral Epicondylitis: A Prospective Randomized Controlled Trial**  
*Peter B. MacDonald, MD, FRCSC, Tod Clark, MD, FRCSC, Sheila McRae, MSc, PhD, Jeff Leiter, MSc, PhD, Jamie Dubberley, MD, FRCSC*

**Paper 15**

10:20 am – 10:25 am

**Factors that Determine Supination Strength Following Distal Biceps Repair**  
*Christopher C. Schmidt, MD, Brandon T. Brown, MS, Lars M. Qvick, MD, Rafal Stachowicz, MD, Carmen Latona, MD, Mark C. Miller, PhD*

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**Paper 16**

10:25 am – 10:30 am **The Use of Indomethacin in the Prevention of Postoperative Radioulnar Synostosis after Distal Biceps Repair**  
*Callista Costopoulos, DO, Joseph A. Abboud, MD, Matthew L. Ramsey, MD, Charles L. Getz, MD, Daniel Sholder, BS, John P. Taras, BS, Daniel Huttman, MD, Mark D. Lazarus, MD*

10:30 am – 10:40 am Discussion

10:40 am – 11:20 am **Symposium II: My Top 10 Tips for Getting It Perfect**

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**Moderator:** Jeffrey S. Abrams, MD

10:40 am **Reducing a Displaced Proximal Humerus Fracture**  
*Bradford O. Parsons, MD*

10:50 am **Repairing a Massive Cuff Tear**  
*Stephen S. Burkhart, MD*

11:00 am **Exposing a Glenoid in Preparation for an Arthroplasty**  
*Robert H. Bell, MD*

11:10 am Discussion

11:20 am – 11:30 am **NEER AWARD PRESENTATION**  
*William J. Mallon, MD, President*

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**Session V: Instability**

**Moderators:** Surena Namdari, MD, MSc, and J. Michael Wiater, MD

**Paper 17**

11:30 am – 11:35 am **Remplissage of an Off-Track Hill-Sachs Lesion is Necessary to Restore Biomechanical Glenohumeral Joint Stability in a Bipolar Bone Loss Model**  
*Robert U. Hartzler, MD, MS, Christopher N.H. Bui, MD, Woong K. Jeong, MD, Masaki Akeda, MD, Alex Peterson, BA, Michelle McGarry, MS, Patrick J. Denard, MD, Stephen S. Burkhart, MD, Thay Q. Lee, PhD*

**Paper 18**

11:35 am – 11:40 am **Clinical Outcomes Following Revision Anterior Shoulder Stabilization: Arthroscopic Revision Stabilization vs. Latarjet**  
*Rachel M. Frank, MD, Christopher R. Mellano, MD, Jason J. Shin, MD, Terrence F. Feldheim, BS, Randy Mascarenhas, MD, Adam B. Yanke, MD, Bernard R. Bach, Jr., MD, Brian J. Cole, MD, MBA, Gregory P. Nicholson, MD, Anthony A. Romeo, MD, Nikhil N. Verma, MD*

**Paper 19**

11:40 am – 11:45 am **Clinical and Radiographic Outcomes of Distal Tibia Allograft Reconstruction for Glenoid Bone Defects in Recurrent Anterior Shoulder Instability**  
*Rachel M. Frank, MD, Petar Golijanin, BS, Brian J. Cole, MD, MBA, Nikhil N. Verma, MD, Anthony A. Romeo, MD, Matthew T. Provencher, MD*

**Paper 20**

11:45 am – 11:50 am **Predictors for Surgery in Shoulder Instability: A Retrospective Cohort Study using the FEDS System**  
*George F. Lebus, MD, Martin B. Raynor, MD, Samuel K. Nwosu, MS, Emily Wagstrom, MD, Sunil S. Jani, MD, MS, James L. Carey, MD, MPH, Carolyn M. Hettrich, MD, MPH, Charles L. Cox, MD, MPH, John E. (Jed) Kubn, MD*

11:50 am – 12:00 pm Discussion

12:00 pm – 1:00 pm Lunch

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**Session VI: Arthroplasty**

**Moderators:** Dean G. Sotereanos, MD, and Edwin E. Spencer, Jr., MD

**Paper 21**

1:00 pm – 1:05 pm **Determining the Minimal Clinically Important Difference (MCID) for the ASES, SST and VAS Pain after Total Shoulder Arthroplasty (TSA)**  
*Robert Z. Tashjian, MD, Jay D. Keener, MD, Jared McAllister, MD, Gregory Ebersole, MS, Erin K. Granger, MPH, Wei Chen, PhD, MS, Man Hung, PhD, Aaron M. Chamberlain, MD*

**Paper 22**

1:05 pm – 1:10 pm **Reverse Shoulder Arthroplasty in Patients with Impaired Lower Extremities**  
*Adam L. Kemp, BS, Thomas W. Wright, MD*

**Paper 23**

1:10 pm – 1:15 pm **A Finite Element Analysis of Augmented Glenoid Components**  
*Nikolas K. Knowles, MEdSc, G. Daniel G. Langobr, MASc, George S. Athwal, MD, FRCSC, Louis M. Ferreira, PhD*

**Paper 24**

1:15 pm – 1:20 pm **Comparison of Reverse Total Shoulder Arthroplasty Outcomes with and without Repair of the Subscapularis**  
*Richard J. Friedman, MD, FRCSC, Pierre-Henri Flurin, MD, Thomas W. Wright, MD, Joseph D. Zuckerman, MD, Christopher Roche, MSE, MBA*

1:20 pm – 1:30 pm Discussion

1:30 pm – 1:40 pm **How-To Video II:**  
**Medial Collateral Ligament  
Reconstruction of the Elbow: 2 Techniques**  
*Christopher S. Ahmad, MD, and Neal S.  
ElAttrache, MD*

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### Session VII: Rotator Cuff

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**Moderators:** Charles M. Jobin, MD, and  
Jay D. Keener, MD

**Paper 25**  
1:40 pm – 1:45 pm **Identification of a Familial Predisposition  
for and a Genetic Variant Associated with  
Rotator Cuff Repair Healing**  
*Robert Z. Tashjian, MD, Erin K. Granger,  
MPH, Yue Zhang, PhD, Craig C. Teerlink,  
PhD, Lisa A. Cannon-Albright, PhD*

**Paper 26**  
1:45 pm – 1:50 pm **Sleep Disturbance Following Rotator Cuff  
Repair: A Prospective 2-Year Investigation**  
*Luke S. Austin, MD, Fotios P.  
Tjoumakaris, MD, Bradford S. Tucker,  
MD, Alvin C. Ong, MD, Nicholas J.  
Lombardi, BS, Matthew D. Pepe, MD*

**Paper 27**  
1:50 pm – 1:55 pm **Correlation of Clinical Outcomes of  
Retear and Tear Progression after  
Arthroscopic Rotator Cuff Repair**  
*Sang-Jin Shin, MD, PhD, Juyeob Lee,  
MD, Young-Won Koh, MD*

**Paper 28**  
1:55 pm – 2:00 pm **Initiation of Rotator Cuff Tears: MRI  
Study of 245 Shoulders**  
*Seung Gyoon Kang, MD, Seung Yeop  
Song, MD, Keun Min Park, MD, Jae Chul  
Yoo, MD*

2:00 pm – 2:10 pm **Discussion**

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### Session VIII: Miscellaneous/Trauma

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**Moderators:** T. Bradley Edwards, MD, and  
Charles L. Getz, MD

**Paper 29**  
2:10 pm – 2:15 pm **Metal Allergy in Shoulder Arthroplasty  
Patients**  
*Jia-Wei Kevin Ko, MD, Thema A.  
Nicholson, MS, C. Edward Hoffler, MD,  
Gerald R. Williams, Jr., MD, Charles L.  
Getz, MD*

**Paper 30**  
2:15 pm – 2:20 pm **Periprosthetic Shoulder Infection: One-  
Stage Better Than Two-Stage?**  
*Geoffrey P. Stone, MD, Rachel Clark, BA,  
CCRC, Kathleen C. O'Brien, BS, Lisa  
Vaccaro, BS, Richard S. Tannenbaum,  
BS, Benjamin J. Cottrell, BS, Adam  
Lorenzetti, MD, Brent Stephens, MD,  
Peter Simon, PhD, Derek Pupello, MBA,  
Mark A. Frankle, MD*

**Paper 31**  
2:20 pm – 2:25 pm **The Timing of Elective Shoulder Surgery  
after Intra-articular Shoulder Injection  
Affects Postoperative Infection Risk**  
*Brian C. Werner, MD, Jourdan M.  
Cancienne, MD, Justin W. Griffin, MD,  
M. Tyrrell Burrus, MD, F. Winston  
Gwathmey, MD, Stephen F. Brockmeier, MD*

**Paper 32**  
2:25 pm – 2:30 pm **The Incidence of Subsequent Shoulder  
Surgery Following Isolated Arthroscopic  
Superior Labrum Anterior and Posterior  
(SLAP) Repairs**  
*Brent Mollon, MD, FRCSC, Siddharth  
A. Mahure, MD, Kelsey L. Ensor, MD,  
Joseph D. Zuckerman, MD, Young W.  
Kwon, MD, PhD, Andrew S. Rokito, MD*

**Paper 33**  
2:30 pm – 2:35 pm **Liposomal Bupivacaine vs. Interscalene  
Nerve Block for Pain Control after  
Shoulder Arthroplasty: A Retrospective  
Cohort Analysis**  
*Umasuthan Srikumaran, MD, MBA,  
Catherine Hannan, BS, Matthew  
Albrecht, MHS, Edward G. McFarland,  
MD, Bashir A. Zikria, MD, MSc, Steve A.  
Petersen, MD*

2:35 pm – 2:45 pm **Discussion**

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### Symposium III: Emerging Technologies in Arthroplasty

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**Moderator:** Thomas (Quin)  
Throckmorton, MD

2:45 pm **Alternative Bearing Surfaces in the  
Shoulder**  
*Matthew L. Ramsey, MD*

2:55 pm **Computer Based Surgical Planning**  
*Joseph P. Iannotti, MD, PhD*

3:05 pm **Patient Specific Instrumentation**  
*Gilles Walch, MD*

3:15 pm – 3:30 pm **Break**

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**Session IX: Basic Science 2**

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	<b>Moderators:</b> Lawrence V. Gulotta, MD, and James E. Carpenter, MD
<b>Paper 34</b> 3:30 pm – 3:35 pm	<b>Effect of Hypercholesterolemia on Fatty Infiltration and Rotator Cuff Healing in a Chronic Rotator Cuff Tear Model of Rabbit</b> <i>Joo Han Oh, MD, PhD, Seok Won Chung, MD, HaeBong Park, MD, Jieun Kwon, MD, Ghee Young Choe, MD</i>
<b>Paper 35</b> 3:35 pm – 3:40 pm	<b>2D/3D Image Registration to Determine Host Bone Coverage of Glenoid Side Reverse Shoulder Implants</b> <i>Andres F. Cabezas, BS, MS, Peter Simon, PhD, Adam Lorenzetti, MD, Kristi Krebes, BS, Brandon G. Santoni, PhD, Geoffrey P. Stone, MD, Rachel E. Clark, BA, CCRC, Mark A. Frankle, MD</i>
<b>Paper 36</b> 3:40 pm – 3:45pm	<b>Histological Quantification of Chronic Human Rotator Cuff Muscle Degeneration</b> <i>Anshuman Singh, MD, Michael C. Gibbons, MS, Oke A. Anakwenze, MD, Timothy Cheng, MD, Hassan Azimi, MD, Simon Schenk, PhD, Samuel R. Ward, PT, PhD</i>
3:45 pm – 3:55 pm	<b>Discussion</b>

3:55 pm – 4:25 pm

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**Symposium IV: New Frontiers in Elbow Pathology Pushing the Boundaries**

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	<b>Moderator:</b> Matthew L. Ramsey, MD
3:55 pm	<b>Lateral Epicondylitis: Stick to the Tried and True vs. New Technology</b> <i>Felix H. Savoie, III, MD</i>
4:05 pm	<b>Radial Head Replacement- Have We Come Any Closer to the Real Thing</b> <i>Graham J.W. King, MD, FRCSC</i>
4:15 pm	<b>Elbow Replacement: Expanding the Indications</b> <i>Shawn W. O'Driscoll, PhD, MD</i>
4:25 pm	<b>Panel Discussion</b>
4:35 pm	<b>Adjourn</b>