

## **Curriculum Vitae**

Salvatore Joseph Frangiamore MD, MS FAAOS  
Orthopaedic Sports Medicine and Shoulder Surgeon, Crystal Clinic Orthopaedic Group

### **Contact Information**

5488 Stone Creek Drive, Solon, OH. 44139

### **Education/Employment History:**

2024-present Sports Medicine and Shoulder Surgeon, Crystal Clinic Orthopaedic Group, Cleveland OH  
2020-2024 Sports Medicine and Shoulder Surgeon, Cleveland Clinic Sports Medicine, Cleveland OH  
2017-2020 Sports Medicine and Shoulder Surgeon, Summa Health Medical Group, Akron, OH  
2016-2017 Sports Medicine and Shoulder Fellowship, The Steadman Philippon Research Institute, Vail CO.  
2012-2016: Resident Physician, Orthopaedic Surgery; The Cleveland Clinic Foundation, Cleveland OH  
2011-2012: Surgical Internship, The Cleveland Clinic Foundation, Cleveland OH  
2007-2011: Doctor Of Medicine, University of Toledo College of Medicine, Toledo OH  
2006-2007: M.S. biomedical sciences; Medical University of Ohio, Toledo OH.  
2002-2006: B.A. biological sciences; John Carroll University, University Heights OH

### **Medical Licensure**

2014- present: State Medical Board of Ohio; license number: 35.123996  
2016-2018: State Medical Board of Colorado; license number: DR.0056196

### **Honors, Awards**

**Research Paper of the Year: 2019 Major League Baseball Winter Meetings:** “Operative versus Non-operative Treatment: Clinical Utility of a Magnetic Resonance Imaging Based Classification System for Injuries to the Ulnar Collateral Ligament” Frangiamore, Schickendantz et al.

**2019 AOSSM Poster Award:** Buckley, Frangiamore et. al “Variations in blood supply from proximal to distal in the ulnar collateral ligament of the elbow. A qualitative descriptive cadaveric study.”

**2015 Charles Neer Award for Basic Science.** Frangiamore et. al “Analysis of cytokine profiles in the diagnosis of periprosthetic Joint Infections of the Shoulder.”ASES Specialty Day, Las Vegas, NV. 3/2015.

**2016 Cleveland Clinic Research Day Basic Science Award.** “Biomechanical Analysis of Elbow Medial Ulnar Collateral Ligament Tear Location and its effect on Rotational Stability: a cadaveric study.” Frangiamore et. al. Annual Cleveland Clinic Resident and Fellow Research Day. Cleveland OH. 6/2016

**Alan Wilde, M.D. Resident and Fellow Research Symposium; 1<sup>st</sup> Prize.** Frangiamore et. al ““Analysis of cytokine profiles in the diagnosis of periprosthetic Joint Infections of the Shoulder.”15<sup>th</sup> Annual New Technology in Upper Extremity Surgery. Cleveland OH. 6/2015

**Mt. Sinai Barry Friedman Orthopaedic Resident Research Award; 1<sup>st</sup> Prize.** Frangiamore et. al “Analysis of cytokine profiles in the diagnosis of periprosthetic Joint Infections of the Shoulder.” Mount. Sinai Reich Lectureship, Cleveland OH. 4/2015

**Cleveland Orthopaedic Society Annual Research Contest; 1<sup>st</sup> Prize.** Frangiamore et. al “Synovial fluid IL-6 as a predictor of infection in revision total shoulder arthroplasty.” Annual New Meeting of the Cleveland Orthopaedic Society, Cleveland OH. 2/2014.

**Alan Wilde, M.D. Resident and Fellow Research Symposium; 2<sup>nd</sup> prize.** Frangiamore et. al “Synovial fluid IL-6 as a predictor of infection in revision total shoulder arthroplasty.”14<sup>th</sup> Annual New Technology in Upper Extremity Surgery. Cleveland OH. 5/2014

**Cleveland Clinic Innovator Award,** 10<sup>th</sup> Annual Cleveland Clinic Innovator Awards Dinner, Cleveland OH. 5/2013.

**Cleveland Clinic Innovator Award,** 9<sup>th</sup> Annual Cleveland Clinic Innovator Awards Dinner, Cleveland OH. 4/2012.

**Treuhaff Award for Excellence in Orthopedics and Rheumatology.** University of Toledo College of Medicine, Toledo OH. 5/2011.

**Gold Humanism Honor Society,** University of Toledo College of Medicine, Toledo OH. 2/2011.

**Retirees Club Scholarship for Academic Excellence.** University of Toledo College of Medicine, Toledo OH. 7/2009.

**Alpha Sigma Nu Jesuit Honors Society.** John Carroll University, University Heights OH. 3/2006.

### **Innovation:**

CCF-022697 US PAT - Dynamically Responsive Bracing

CCF - 025124 US PRO – DAA for Biofilm Eradication

### **Administrative Service/Leadership Roles/Committee Participation**

2021- 2024:	Associate Director, Cleveland Clinic Orthopaedic Sports Medicine Fellowship
2021- present:	AOSSM Emerging Leaders Program, BOLD Leadership Participant
2021- 2024	Assistant Professor of Orthopaedic Surgery, Cleveland Clinic Lerner College of Medicine
2022- present:	AOSSM Self-Assessment Exam Committee
2021-present:	AOSSM Elbow Exam Selection Committee
2018- 2020:	Clinical Instructor of Orthopaedics, Northeast Ohio Medical University
2018- 2020:	Adjunct Professor of Biomedical Engineering, University of Akron.
2015-2020:	AOA Emerging Leaders Program
2013-2016:	Member Executive Board, Ohio Orthopaedic Society
2011-2015:	Cleveland Clinic Resident Liaison to the American Academy of Orthopaedic Surgeons
2010- 2016:	Clinical Instructor Anatomy: Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Dept. of Anatomy; Cleveland, OH

### **Grant Support**

1. SNI2312SF IMPACT Multicenter randomized clinical trial comparing bioinductive patch or repair for high grade partial rotator cuff tears.  
Role: PI
2. R01 AR074131 Spindler (PI)  
BEAR-MOON: A Two Arm Noninferiority Blinded Randomized Clinical Trial Comparing ACL Repair with BEAR™ Device vs. Standard of Care Autograft  
Role: Co- Investigator
3. RO1 NCT04641351 Jones (PI)  
Corticosteroid Meniscectomy Randomized Trial (CoMeT)

Role: Site Primary Investigator

4. Arthrex Investigator Research Grant “Predictive Analytic Model to Determine Functional Outcomes of Arthroscopic Rotator Cuff Repair.” (\$70,581 Nov. 2016- Nov. 2017).  
Role: Primary Investigator
5. CCF Orthopaedic Operating Room of the Future Grant “Cytokine levels in primary shoulder arthroplasty.” (\$55,000; July 2015-July 2016)  
Role: Co-investigator
6. ASES Research. Analysis of cytokine profiles in the diagnosis of periprosthetic Joint infections of the shoulder.” Grant (\$20,000; Jan. 2014-Jan-2015)  
Role: Co-investigator
7. CCF Orthopaedic Operating Room of the Future Grant. “The role of synovial fluid interleukin 6 levels in prosthetic joint infection.” (\$50,000; completed- May 2013)  
Role: Co-investigator

### **Publications**

1. Grosso, MJ. **Frangiamore, SJ**, Ricchetti, ET. Bauer, TW. Iannotti, JP. Performance of Implant Sonication Culture for the Diagnosis of Periprosthetic Shoulder Infection. *J Shoulder Elbow Surg.* 2017 Oct 13. pii: S1058-2746(17)30514-1.
2. Iannotti, JP. **Frangiamore, SJ**. Fate of large structural allograft for treatment of severe uncontained glenoid bone deficiency. *Journal of Shoulder and Elbow Surgery / American Shoulder and Elbow Surgeons ... [et al.]*. 2012; 21 (6): 765-71.
3. Ricchetti, ET. **Frangiamore, SJ**. Saleh, A. Grosso, MJ. Bauer, TW. Alolabi, B. Iannotti, JP. Diagnosis of Periprosthetic Infection After Shoulder Arthroplasty: A Critical Analysis Review. *JBJS Rev.* 2013 Nov 19;1(1)
4. Grosso, MJ. **Frangiamore, SJ**, Ricchetti, ET. Bauer, TW. Iannotti, JP. Sensitivity of Frozen Section Histology for identifying Propionibacterium Acnes infections in revision shoulder arthroplasty. *J Bone Joint Surg Am.* 2014 Mar 19;96(6):442-7
5. Grosso, MJ, **Frangiamore, SJ**. Saleh, A. Kovac, MF. Hayashi, R. Ricchetti, ET. Bauer, TW. Iannotti, JP. Poor utility of serum interleukin-6 levels to predict indolent periprosthetic shoulder infections. *J Shoulder Elbow Surg.* 2014 Sep;23(9):1277-81
6. **Frangiamore, SJ**. Saleh, AR. Grosso, MJ. Farias-Kovacs, M. Zhang, X. Daly, T. Ricchetti, ET. Iannotti, JP. Synovial fluid interleukin-6 as a predictor of periprosthetic shoulder infection. *J Bone Joint Surg Am*, 2015 Jan 07;97(1):63-70.
7. **Frangiamore, SJ**. Saleh, AR. Grosso, MJ. Farias-Kovacs, M. Iannotti, JP. Higuera, CA. Ricchetti, ET.  $\alpha$ -defensin as a predictor of periprosthetic shoulder infection. *J Shoulder Elbow Surg.* 2015 Jul;24(7):1021-7
8. **Frangiamore, SJ**. Saleh, A. Gross, MJ. Bauer, TW. Daly, T. Alolabi, B. Iannotti JP. Ricchetti, ET. Early versus late culture growth characteristics in P. acnes positive periprosthetic shoulder

infections. *J Bone Joint Surg Am*, 2015 Jul 15; 97 (14): 1149 -1158.

9. **Frangiamore, SJ**, Farias-Kovacs, M, Gajewski, N, Daly, T, Barsoum, W, Higuera C. Utility of  $\alpha$ -defensin in the diagnosis of periprosthetic hip and knee infection. *J Arthroplasty*. 2016 Feb;31(2):456-60
10. **Frangiamore SJ**, Siqueira MB, Saleh A, Daly T, Higuera CA, Barsoum WK. Synovial Cytokines and the MSIS Criteria Are Not Useful for Determining Infection Resolution After Periprosthetic Joint Infection Explantation. *Clin Orthop Relat Res*. 2016 Jul;474(7):1630-9.
11. Shahi A, Parvizi J, Kazarian GS, Higuera C, **Frangiamore SJ**, Bingham J, Beauchamp C, Valle CD, Deirmengian C. The Alpha-defensin Test for Periprosthetic Joint Infections Is Not Affected by Prior Antibiotic Administration. *Clin Orthop Relat Res*. 2016 Jul;474(7):1610-5
12. Mehdi SK, **Frangiamore SJ**, Schickendantz, MS. Latissimus Dorsi and Teres Major Injuries in Major League Baseball Pitchers: A Systematic Review. *Am J Orthop*. 2016;45(3):163-167
13. Siqueira MB, **Frangiamore SJ**, Klika AK, Gajewski N, Barsoum WK, Higuera CA. Comparison of Synovial Fluid Cytokine Levels between Traumatic Knee Injury and End-Stage Osteoarthritis. *J Knee Surg*. 2017 Feb;30(2):128-133
14. Marshall T, **Frangiamore SJ**, Schickendantz MS. Medial Ulnar Collateral Ligament Reconstruction: Restoring the Ulnar Footprint. *Techniques in Shoulder & Elbow Surgery*: June 2017 - Volume 18 - Issue 2 - p 62–64
15. Egger AC, **Frangiamore SJ**, Rosneck J. Femoroacetabular Impingement: A review. *Sports Med Arthrosc*. 2016 Dec;24(4):e53-e5
16. **Frangiamore, SJ**, Lynch, TS, Vaughn, M, Styron, J, Schickendantz, MS. MRI Predictors of Failure in Nonoperative Management of Ulnar Collateral Ligament Injuries in Professional Baseball Pitchers. *American Journal of Sports Medicine* 2017. Jul;45(8):1783-1789
17. Provencher MT, Sanchez G, Ferrari M, DelNegro S, **Frangiamore SJ**, Mannava S. Anatomic Humeral Head Reconstruction With Fresh Osteochondral Talus Allograft for Recurrent Glenohumeral Instability With Reverse Hill-Sachs Lesion. *Arthro Tech*. Feb. 2017. Feb 27;6(1):e255-e261
18. **Frangiamore, SJ**, Saleh, A, Gross, MJ, Bauer, TW, Daly, Iannotti, JP, Ricchetti, ET, Neer Award 2015: Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. *J Shoulder Elbow Surg*. 2017 Feb;26(2):186-196.
19. Sanchez G, Ferrari M, DelNegro S, **Frangiamore SJ**, Mannava S, Provencher MT. Pectoralis Major Repair With Unicortical Button Fixation And Suture Tape. *Arthro Tech* 2017. Jun 5;6(3):e729-e735.
20. Mannava S, Chahla JA, Geeslin AG, Cinque M, Whitney KE, Evans TA, **Frangiamore SJ**, LeBus G, Godin J, LaPrade RF, Philippon MJ. Platelet rich plasma (PRP) augmentation of hip arthroscopy. *Arthro Tech*. Jun 12;6(3):e763-e768.
21. Godin JA, **Frangiamore SJ**, Chahla J, Cinque ME, DePhillipo ND, LaPrade RF. Tibial Allograft

Transfer for Medial Tibial Plateau Resurfacing. *Arthrosc Tech*. 2017 May 29;6(3):e661-e665

22. **Frangiamore SJ**, Mannava S, Godin J, Fritz EM, Millett PJ. Arthroscopic pancapsular shift for the surgical treatment of multidirectional shoulder instability. *Arthro Tech*. July 2017 (2017) Arthroscopy Techniques. Aug 2017; 6 (4), pp. e1113-e1117
23. Provencher MT, Sanchez G, Ferrari M, DelNegro S, **Frangiamore SJ**, Mannava S. Arthroscopic rotator cuff repair of the supraspinatus with mini-open subpectoral biceps tenodesis. *Arthro Tech*. Oct 2017; 6 (5), pp. e1667-e1674
24. Provencher MT, Sanchez G, Ferrari M, **Frangiamore SJ**, Mannava S. Arthroscopic Labral Repair in the Setting of Recurrent Posterior Shoulder Instability. Accepted for publication *Arthro Tech*. Oct 2017; 6 (5), pp. e1789-e1794
25. **Frangiamore SJ**, Mannava S, Geeslin AG, Geeslin MG, Chahla JA, Philippon MJ. Comprehensive Clinical Evaluation of Femoroacetabular Impingement: Part 1, Physical Examination. *Arthro Tech*. Oct 2017; 6 (5), pp. e1993-e2001
26. Mannava S, Geeslin AG, **Frangiamore SJ**, Geeslin MG, Chahla JA, Philippon MJ Comprehensive Clinical Evaluation of Femoroacetabular Impingement: Part 2, Plain Radiography. *Arthro Tech*. Oct 2017; 6 (5), pp. e2003-e2009
27. Geeslin AG, Geeslin MG, Mannava S, **Frangiamore SJ**, Chahla JA, Philippon MJ. Comprehensive Clinical Evaluation of Femoroacetabular Impingement: Part 3, Magnetic Resonance Imaging. *Arthro Tech*. Oct 2017; 6 (5), pp. e2011-e2018
28. Grosso, MJ. **Frangiamore, SJ**, Ricchetti, ET. Bauer, TW. Iannotti, JP. Performance of Implant Sonication Culture for the Diagnosis of Periprosthetic Shoulder Infection. *J Shoulder Elbow Surg*. 2017 Oct 13. pii: S1058-2746(17)30514-1.
29. Lawrenz J, **Frangiamore SJ**, Rayne AJ, Vallier HA. Treatment approach for infection of healed fractures after internal fixation. *J Orthop Trauma*. 2017 Nov;31(11):e358-e363
30. **Frangiamore SJ**, Moashe G, Krukenburg BM, Civitarese DM, Chahla J, Cinque M, Provencher MT, Hackett TR, Laprade RF . Qualitative and Quantitative Analysis of the Dynamic and Static Stabilizers of the Medial Elbow: An Anatomic Study. *Am J Sports Med*. 2017 Dec 1:363546517743749.
31. **Frangiamore SJ**, Mannava S, McNamara S, Briggs KK, Philippon MJ. Return to play and career length following hip arthroscopy in professional baseball players. *Am J Sports Med*. 2018 May 1:363546518775420
32. The Short-Term Impact of Concussion in the NHL: An Analysis of Player Longevity, Performance, and Financial Loss. Navarro SM, Pettit RW, Haeberle HS, **Frangiamore SJ**, Rahman NM, Farrow LD, Schickendantz MS, Ramkumar PN. *J Neurotrauma* 2018 Mar 6
33. Magnetic Glycol Chitin-Based Hydrogel Nanocomposite for Combined Thermal and d-Amino-Acid-Assisted Biofilm Disruption. Abenojar EC, Wickramasinghe S, Ju M, Uppaluri S, Klika A, George J, Barsoum W, **Frangiamore SJ**, Higuera-Rueda CA, Samia AC. *ACS Infectious Diseases* May 2018.

34. **Frangiamore SJ**, Morris ER, Scibetta A, Moashe G, Chahla J, Civitarese DM, Chahla J, Provencher MT, Hackett TR, Schickendantz MS, Huard J, LaPrade RF. Evaluation of Microvascular Density and Regenerative Cell Populations in the Proximal and Distal UCL of the Elbow: A Comparative Study. *Orth J Sports* 2018 June. 10.1177/2325967118777825
35. Mannava S, **Frangiamore SJ**, Murphy CP, Sanchez A, Sanchez G, Dornan GJ, Bradley JP, LaPrade RF, Millett PJ, Provencher MT. Prevalence of Shoulder Labral Injury in Collegiate Football Players at the National Football League Scouting Combine. *Orthop J Sports Med.* 2018 Jul 9;6(7):2325967118783982.
36. Murphy CP, **Frangiamore SJ**, Mannava S, Sanchez A, Beiter ER, Whalen JM, Price MD, LaPrade RF, Provencher MT. Effect of Anterior Glenoid Labral Tears and Glenoid Bone Loss at the NFL Combine on Future NFL Performance. *Orthop J Sports Med.* 2018 Jul 16;6(7):2325967118784884.
37. Mannava S, Horan MP, **Frangiamore SJ**, Fritz EM, Godin JA, Pogorzelski J, Millett PJ. Return to Recreational Sporting Activities Following Total Shoulder Arthroplasty. *Orthop J Sports Med.* 2018 Jul 5;6(7):2325967118782672.
38. Millett PJ, Fritz EM, **Frangiamore SJ**, Mannava S. Arthroscopic management of glenohumeral arthritis—a joint preservation approach. *J Am Acad Orthop Surg.* 2018 Sep 28. doi: 10.5435/JAAOS-D-17-00214.
39. Murphy CP, **Frangiamore SJ**, Mannava S, Sanchez A, Beiter E, Whalen JM, Price MD, Bradley JP, LaPrade RF, Provencher MT. Effect of Posterior Glenoid Labral Tears at the NFL Combine on Future NFL Performance *Orthop J Sports Med.* 2018 Oct 4;6(10):2325967118787464
40. **Frangiamore SJ**, Nagle T, Colbrunn R, Bigart K, Millis A, Schickendantz MS. Biomechanical analysis of elbow medial ulnar collateral ligament tear location and its effect on rotational stability. *J Shoulder Elbow Surg.* 2018 Nov;27(11):2068-2076.
41. Ramkumar PN, **Frangiamore SJ**, Navarro SM, Lynch TS, Forney MC, Kaar SG, Akhavan S, Moutzouros V, Westermann RW, Farrow LD, Schickendantz MS. Interobserver and Intraobserver Reliability of an MRI-Based Classification System for Injuries to the Ulnar Collateral Ligament. *Am J Sports Med.* 2018 Sep;46(11):2755-2760
42. Mannava S, **Frangiamore SJ**, Murphy CP, Sanchez A, Sanchez G, Dornan GJ, Bradley JP, LaPrade RF, Millett PJ, Provencher MT. Prevalence of Shoulder Labral Injury in Collegiate Football Players at the National Football League Scouting Combine. *Orthop J Sports Med.* 2018 Jul 9;6(7):2325967118783982.
43. Peterson E, Handwork P, Soloff L, Schickendantz MS, **Frangiamore SJ**. Effects of Ulnar Collateral Ligament Reconstruction on Pitch Selection in Major League Baseball Pitchers. *Orthop J Sports Med.* 2018 Nov 20;6(11)
44. Ramkumar PN, Navarro SM, Luu BC, Haberle HS, Soloff L, **Frangiamore SJ**, Schickendantz MS. The Short-Term Outcomes of Concussions in Major League Baseball: A Historical Cohort Study of Return-to-Play, Performance, Longevity, and Financial Impact. *Orthop J Sports Med.* 2018 Dec 13;6(12).

45. Godin JA, Horan MP, **Frangiamore SJ**, Fritz EM, Mannava S, Pogorzelski J, Millett PJ. Return to recreational sporting activities following reverse shoulder arthroplasty. *OJSM Jun 2019*
46. Provencher MT, **Frangiamore SJ**, Godin J, Fritz EM, Pogorzelski J, Mannava S, Millett PJ. Current treatment in anterior shoulder instability. *Am J Ortho Surg.* July 2017
47. Ramkumar PN, Navarro SM, Luu BC, Haberle HS, Soloff L, **Frangiamore SJ**, Schickendantz MS. Operative versus Non-operative Treatment: Clinical Utility of a Magnetic Resonance Imaging Based Classification System for Injuries to the Ulnar Collateral Ligament. *JSES Oct 2018*
48. Buckley PS, Morris ER, Robbins CM, Kemler BR, **Frangiamore SJ**, Noonan T, Ciccotti MG, LaPrade RF, Arnoczky SP, Hackett TR. The Proximal Ulnar Collateral Ligament is More Well Vascularized than the Distal Ulnar Collateral Ligament. *AJSM May 2019.*
49. Ramkumar PN, Navarro SM, Luu BC, Haberle HS, Soloff L, **Frangiamore SJ**, Schickendantz MS. The Epidemiology and Impact of Prior Musculoskeletal Injury and Orthopaedic Surgery on Draft Position, Availability, and Short-Term Performance in Major League Baseball: A Summative Analysis and Matched Cohort of 1,890 Predraft Players. *OJSM May 2019*
50. Ramkumar PN, Navarro SM, Haeberle HS, Luu BC, Jang A, **Frangiamore SJ**, Farrow LD, Schickendantz MS, Williams RJ. Concussion in American Versus European Professional Soccer: A Decade-Long Comparative Analysis of Incidence, Return to Play, Performance, and Longevity. *Am J Sports Med.* 2019 Aug.
51. Hooper PO, Warren J2, Silko C, **Frangiamore SJ**, King D, Farrow LD, Schickendantz MS. Establishing Safe Extra-articular Parameters for Cortical Button Distal Fixation During Ulnar Collateral Ligament Reconstruction. *Am J Sports Med.* 2019 Aug.
52. Godin JA, Pogorzelski J1, Horan MP, Lacheta L, Hussain ZB, Altintas B, **Frangiamore S**, Mannava S., Fritz EM, Millett PJ, Impact of Age and Subscapularis Tendon Reparability on Return to Recreational Sports Activities and 2-Year Outcomes After Reverse Total Shoulder Arthroplasty. *Orthop J Sports Med.* 2019 Oct 14
53. Cinque M, Schickendantz, MS, **Frangiamore SJ**. Review of Anatomy of the Medial Ulnar Collateral Ligament Complex of the Elbow. *Current Reviews in Musculoskeletal Medicine.* *Current Reviews in Musculoskeletal Medicine (2020) 13:96–102.*
54. Mckernan MJ, Schickendantz MS, **Frangiamore SJ**. Diagnosis and Management of Subcoracoid Impingement. *J Am Acad Orthop Surg.* *J Am Acad Orthop Surg.* 2021 Feb 1;29(3):100-107
55. **Frangiamore SJ**, Godin JA, Dornan G, Millett PJ. Predictive Modeling to Determine Functional Outcomes Following Arthroscopic Rotator Cuff Repair. *Am J Sports Med.* 2020 Jun;48(7):1559-1567
56. Frantz T, Ramkumar PN, **Frangiamore S**, Jones G, Soloff L, Kvit A, Curriero FC, Schickendantz M. Epidemiology of acromioclavicular joint injuries in professional baseball: analysis from the Major League Baseball Health and Injury Tracking System. *J Shoulder Elbow Surg.* 2021 Jan;30(1):127-133

57. Maier J, Oak S, Soloff L, Schickendantz M, **Frangiamore SJ**. Management of common upper extremity injuries in throwing athletes: a critical review of current outcomes  
*2021 JSES Reviews, Reports & Techniques*, Volume 1, Issue 4, 295 - 300
58. Karnuta, J, **Frangiamore SJ**, Ramkumar PN. Machine Learning Outperforms Regression Analysis to Predict Next-Season Major League Baseball Injuries. *Orthop J Sports Med.* 2020 Nov 11;8(11)
59. Haeberle HS, Ramkumar PN, Frantz TL, Jones GL, Curriero FC, Corrigan A, Soloff L, Schickendantz MS, **Frangiamore SJ**. Pectoralis muscle injuries in Major and Minor League Baseball. *J Shoulder Elbow Surg.* 2022 Aug;31(8):e363-e368. doi: 10.1016/j.jse.2022.01.134. Epub 2022 Feb 18. PMID: 35183743.
60. Harris J, Maier J, Freeston J, Soloff L, Himmerick D, Pipkin A, Genin JA, Schickendantz MS, **Frangiamore SJ**. Differences in Glenohumeral Range of Motion and Humeral Torsion Between Right-Handed and Left-Handed Professional Baseball Pitchers. *Am J Sports Med.* 2022 Jul;50(9):2481-2487. doi: 10.1177/03635465221092115. PMID: 35833921.
61. Erickson BJ, Hurley ET, Mojica ES, Jazrawi LM; **Frangiamore, SJ** Ulnar Collateral Ligament – Delphi Consensus Group (UCL-DCG). Elbow Ulnar Collateral Ligament Tears: A Modified Consensus Statement. *Arthroscopy.* 2023 May;39(5):1161-1171. doi: 10.1016/j.arthro.2022.12.033. Epub 2023 Feb 14. PMID: 36796550.
62. DeFoor M., Frangiamore SJ., Sheean AJ. Patient Resilience Does Not Conclusively Affect Clinical Outcomes Associated With Arthroscopic Surgery but Substantial Limitations of the Literature Exist. *Arthroscopy, Sports Medicine, and Rehabilitation*, Volume 6, Issue 2, 2024,
63. Rossi L, Pasqualini I, Dickens J, **Frangiamore SJ**... Screw Fixation versus Suture-Button Fixation for the Latarjet Procedure – A Systematic Review & Meta-Analysis" accepted in *Shoulder and Elbow* Jan 2024
64. Jones MH, Gottreich JR, Jin Y, Kattan MW; Cleveland Clinic Sports Health; Spindler KP, Farrow LD, **Frangiamore SJ** et. al. Surgeon Performance as a Predictor for Patient-Reported Outcomes After Arthroscopic Partial Meniscectomy. *Orthop J Sports Med.* 2024 Apr 19;12(4): PMID: 38646604.
65. Hurley ET, Aman ZS, Doyle TR, **Frangiamore SJ**, CS, Anakwenze O, Dickens JF; Posterior Shoulder Instability International Consensus Group. Posterior Shoulder Instability, Part I- Diagnosis, Nonoperative Management, and Labral Repair for Posterior Shoulder Instability-An International Expert Delphi Consensus Statement. *Arthroscopy.* 2024 May PMID: 38735410.
66. Hurley ET, Aman ZS, Doyle TR, Levin JM, Matache BA, Chalmers PN, Waterman BR, **Frangiamore SJ** BJ, Klifto CS, Anakwenze OA, Dickens JF; Posterior Shoulder Instability International Consensus Group. Posterior Shoulder Instability, Part II-Glenoid Bone Grafting, Glenoid Osteotomy, and Rehabilitation/Return to Play-An International Expert Delphi Consensus Statement. *Arthroscopy.* 2024 May PMID: 38735411.
67. Sheean AJ, DeFoor MT, Spindler KP, Arner JW, Athiviraham A, Bedi A, DeFroda S, Ernat JJ, **Frangiamore SJ**, Nuelle CW, Sheean AJ, Spindler KP, Bedi A. The Psychology of ACL Injury, Treatment, and Recovery: Current Concepts and Future Directions. *Sports Health.* 2024 Feb PMID: 38374636.



## **Presentations/Abstracts**

1. Single versus double row repair for supraspinatus tendon tears: A Biomechanical Study. Presented at 2009 National Meeting of the American Association of Biomechanics; Hershey, PA. 05/14/2009.
2. Identifying infections in revision shoulder arthroplasty. Presented at 2013 Ohio Shoulder and Elbow Society Annual Meeting; Columbus, OH. 01/26/2013.
3. Use of serum and synovial fluid IL-6 levels in diagnosis of prosthetic joint infections of the shoulder. Presented at 2013 AAOS Annual Meeting; Chicago, IL. 03/18/2013.
4. Sensitivity of frozen section histology for identifying *P. acnes* infections in revision shoulder arthroplasty. Presented at 2013 AAOS Annual Meeting; Chicago, IL. 03/22/2013.
5. Orthopaedic infections following shoulder arthroplasty. Presented at 2013 NE Ohio Society of Clinical Microbiologists Biannual Meeting; Cleveland, OH. 05/09/2013.
6. IL-6 as a marker of infection in failed shoulder arthroplasty. Presented at 2013 Annual Meeting of the Ohio Orthopaedic Society; Columbus, OH. 05/17/2013.
7. Synovial Fluid Interleukin-6 as a predictor of periprosthetic shoulder infection. Presented at Annual Resident Research Symposium; Cleveland, OH. 02/15/2014.
8. Early versus late culture growth characteristics in *P. acnes* positive periprosthetic shoulder infections. Presented at 2014 American Academy of Orthopaedic Surgery Annual Meeting; New Orleans, LA. 03/14/2014.
9. Early versus late culture growth characteristics in *P. acnes* positive periprosthetic shoulder infections. Presented at AOA/COA Combined Meeting Montreal, QC, Canada; Montreal, QC, Canada. 06/18/2014.
10. Early versus late culture growth characteristics in *P. acnes* positive periprosthetic shoulder infections. Presented at 2014 MAOA Annual Meeting; San Antonio, TX. 04/25/2014.
11. Synovial fluid IL-6 as a predictor of infection in revision total shoulder arthroplasty. Presented at 14th Annual New Technology in Upper Extremity Surgery: The Cutting Edge with Advancing Translational Research. 05/04/2014.
12. Trends of synovial fluid cytokines in non-arthritis, arthritis and painful hip and knee arthroplasty. Presented at: 2014 Annual Meeting of the Academy of Hip and Knee Surgeons; Dallas, TX. 11/2014
13. Utility of  $\alpha$ -defensin in the diagnosis of periprosthetic hip and knee infection. Presented at: 2014 Annual Meeting of the Academy of Hip and Knee Surgeons; Dallas, TX. 11/2014
14. Synovial fluid cytokines changes between 1st and 2nd stage revision arthroplasty. Poster presentation: 2014 Annual Meeting of the Academy of Hip and Knee Surgeons; Dallas, TX. 11/2014

15. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 2015 ASES Specialty Day at the Annual Meeting of the American Academy of Orthopaedic Surgery; Las Vegas, NV. 03/2015.
16. Synovial fluid cytokines changes between 1st and 2nd stage revision arthroplasty. Presented at: 2015 Annual Meeting of the Academy of Orthopaedic Surgery; Las Vegas, NV. 03/2015.
17. Synovial fluid IL-6 as a predictor of infection in revision total shoulder arthroplasty. Presented at: 2015 Annual Meeting of the Academy of Orthopaedic Surgery; Las Vegas, NV. 03/2015.
18. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 2105 Annual Meeting of the American Academy of Orthopaedic Surgery; Las Vegas, NV. 03/2015.
19.  $\alpha$ -defensin as a predictor of periprosthetic shoulder infection. Presented at: 2015 Annual Meeting of the American Academy of Orthopaedic Surgery; Las Vegas, NV.
20. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 2015 ASES Specialty Day at the Annual Meeting of the American Academy of Orthopaedic Surgery; Las Vegas, NV. 03/2015.
21. Synovial fluid cytokines changes between 1st and 2nd stage revision arthroplasty. Presented at: 2015 Annual Meeting of the Mid America Orthopaedic Association; Hilton Head, SC.
22. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 2015 Reich Lectureship, Barry Friedman Resident Research Award presentation; Cleveland, OH. 04/2015.
23. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 15<sup>th</sup> Annual New Technology in Upper Extremity Surgery. Cleveland OH. 6/2015.
24. Utility of  $\alpha$ -defensin in the diagnosis of periprosthetic hip and knee infection. Presented at: 2015 Annual Meeting of the Musculoskeletal Infection Society; Cleveland, OH 7/2015.
25. Analysis of cytokine profiles in the diagnosis of periprosthetic joint infections of the shoulder. Presented at: 2016 OREF/ORS Resident Research Symposia; Chicago, IL. 05/2016.
26. MRI Predictors of Failure in Nonoperative Management of Ulnar Collateral Ligament Injuries in Professional Baseball Pitchers. Presented at: 2016 Meeting of the Ohio Orthopaedic Society; Columbus, OH. 05/2016.
27. Efficacy of Preoperative Aspirates in Periprosthetic Infections of the Shoulder. Annual Meeting of the American Academy of Orthopaedic Surgeons. San Diego CA, March 2017.
28. Shoulder injuries in collediate football athletes: impact on draft status and professional performance. American Orthopaedic Society for Sports Medicine 2017 Annual Meeting. Toronto, Canada. July 20-23, 2017.

29. Return to play and career length following hip arthroscopy in professional baseball players. American Orthopaedic Society for Sports Medicine 2017 Annual Meeting. Toronto, Canada. July 20-23, 2017.
30. Effect of Shoulder Labrum Injury on Future Performance in Collegiate Football Players Entering the National Football League (NFL) Combine. AANA Annual Meeting. Chicago, IL. April 2018.
31. Establishing Safe Extra-articular Parameters for Cortical Button Distal Fixation During Ulnar Collateral Ligament Reconstruction” Major League Baseball Winter Meetings. Dec 2019
32. The Epidemiology and Impact of Prior Musculoskeletal Injury and Orthopaedic Surgery on Draft Position, Availability, and Short-Term Performance in Major League Baseball: A Summative Analysis and Matched Cohort of 1,890 Predraft Players. Major League Baseball Winter Meetings. Dec 2019

### **Lectures, Grand Rounds, Instructional Courses**

1. Current Management of Infection after Shoulder Arthroplasty” Steadman Philippon Research Institute Grand Rounds. Nov. 2016.
2. “2018 Willam Moats Lecture: ACL injury management, past present and future” Summa Health Sports Medicine Symposium, Feb 2018
3. “Elbow ulnar collateral ligament anatomy, diagnosis, and management” AOSSM 2019 Instructional course lecture. July 2019
4. “Throwing Injuries in Elite Level Athletes” Cleveland Indians Annual Medical Meeting. Dec. 2019
5. “Management of Ulnar Collateral Ligament Injuries in Elite Athletes” Ohio Shoulder and Elbow Society Annual Meeting. Jan 2020.
6. “Round Table Ulnar Collateral Ligament Injuries: 2020 Treatment Strategies” AOSSM 2020 Instructional course lecture. July 2020
7. “Management of Ulnar Collateral Ligament Injuries” Cleveland Clinic Orthopaedic Surgery Grand Rounds, Sept. 2020.
8. “Elbow Anatomy and Physical Examination in the Overhead Athlete” 2020 Cleveland Clinic Sports Summit, Nov. 2020
9. “Ulnar collateral Ligament Anatomy and Reconstruction Techniques” Stanford University Orthopaedics Visiting Professor Guest Lectureship Jan 2021
10. “Round Table Ulnar Collateral Ligament Injuries: 2020 Treatment Strategies” AOSSM Instructional course lecture. July 2020
11. “Diagnosis and Treatment of Shoulder Instability” AAOS Webinar August 2021
12. “Management of ulnar collateral ligament injuries of the elbow”. AAOS Webinar Series 2023

### **Books and Book Chapters:**

1. **Frangiamore, SJ.** Miniaci, A. *Chapter 11: Anterior Instability for Severe Humeral Bone Loss: Grafting and Prosthetic Options.* AAOS/ASES Advanced Reconstruction of the Shoulder 2. (Abrams et. al, 2016)
2. **Frangiamore, SJ.** Grosso, MJ. Iannotti, JP. Ricchetti, ET. *Chapter 4: Prevention, diagnosis and treatment of P. acnes infections of the shoulder.* World Clinics in Orthopaedics: Current Controversies in Shoulder and Elbow Surgery. (Getz et. al 2015)
3. **Frangiamore, SJ.** Grosso, MJ. Iannotti, JP. Ricchetti, ET. *Chapter 22: RSA in the setting of infection.* Reverse Shoulder Arthroplasty. (Frankle et. al 2015)
4. Mitchell JJ, Katthagan JC, **Frangiamore S**, Mannava S, Millett PJ. Comprehensive Arthroscopic Management of Glenohumeral Osteoarthritis. In Imhoff A, Ticker J, Mazzocca A, Voss A (eds): An Atlas of Advanced Shoulder Arthroscopy. In Press.
5. Mannava S, **Frangiamore SJ**, Fritz E, Millett PJ. Comprehensive Arthroscopic Management (CAM)
6. Procedure for the Treatment of Glenohumeral Osteoarthritis. Shoulder Surgery: Tricks of the Trade Thieme Publishers. New York, NY. Editors: Dines JS; Dines DM; Gulotta LV. September 2016
7. **Frangiamore SJ**, Chang A, Fox J, Murphy CP, Sanchez A, Provencher MT. *Revision Shoulder Instability.* Invited chapter: DeLee & Drez's Orthopaedic Sports Medicine: Principles and Practice. 5th Ed. 2019
8. Mannava S. **Frangiamore SJ**, Fritz EM, , Millett PJ. "Chapter 1 Patient Positioning, Portals, Fluid Management, and Diagnostic Arthroscopy" *Advanced Techniques in Shoulder Arthroscopy.* Millett et. al 2019
9. **Frangiamore SJ**, Ramkumar PN, Fritz EM, Mannava S, Millett PJ. "Chapter 12 Multidirectional Instability" *Advanced Techniques in Shoulder Arthroscopy.* Millett et. al 2019
10. **Frangiamore SJ**, Ramkumar PN, Fritz EM, Mannava S, Millett PJ. "Chapter 13 Posterior Shoulder Instability" *Advanced Techniques in Shoulder Arthroscopy.* Millett et. al 2019
11. Frantz T, **Frangiamore SJ**, Schickendantz MS. "Anatomical Considerations of Throwing Elbow Injuries" *Operative techniques in sports medicine.* in press
12. Pelton M, **Frangiamore SJ**. Schickendantz MS. "Anatomy and Biomechanics of the Medial Ulnar Collateral Ligament" *Elbow Ulnar Collateral Ligament Injury: A guide to diagnosis and Treatment, edn 2.* In press.
13. **Frangiamore, SJ.** Maier J. Schickendantz MS. "Management of SLAP tears in Overhead Athletes" *Operative Techniques in Sports Medicine: The Overhead Athlete.* In press
14. **Churchill, J. Frangiamore SJ.** "Medial Ulnar Collateral Ligament Insufficiency" 2020 AAOS Resident Curriculum: *Elbow Instability and Throwing Elbow*

### **Professional Society Membership**

2018- present: American Shoulder and Elbow Society (Candidate Member)  
2015-present: American Orthopaedic Society of Sports Medicine  
2014- present: American Orthopaedic Association; Emerging Leaders Program  
2011-present: American Academy of Orthopaedic Surgeons, member  
2010- present: Arnold P. Gold Humanism Honors Society  
2005-present: Alpha Sigma Nu Honors Fraternity

### **Team Coverage**

2017- 2024 Assistant Team Physician, Cleveland Guardians Organization  
2020- 2024 : Team Physician, Notre Dame College (DII)  
2019 -2020: League Physician, Premiere Lacrosse League  
2016- 2020: United States Ski and Snowboard Association, Burton Snowboarding Co. Medical Team  
2015- 2016: St. Edwards High School Football  
2014- 2016: Lake County Captains Professional Baseball  
2014- 2015: Chagrin Falls High School Football  
2012- 2016: Mahoning Valley Scrappers Professional Baseball  
2012-2013: Brush High School Football

### **International Volunteer Experience**

2010 CURE Dominicana Hospital, Santo Domingo, Dominican Republic  
2008- El Ayudante Medical Mission, Leon, Nicaragua