

ISG Programming – Mississippi Room; 3rd floor, Coffman Union

Sunday July 25th

12:30 pm: Registration Opens

2:00 – 3:00 pm: Educational Lecture, 'Looking forward while working backward: reverse and anatomic total shoulder', Jonathan P. Braman, MD, Chief of Shoulder Surgery, The University of Minnesota

3:00 – 4:00 pm *Student Travel Award Research Presentations: Moderator - John D. Borstad*

3:00 pm: Seitz, A.L., Reinold, M.M., Gill IV, T.J., Thigpen, C.A.
Scapular Kinematics are Altered in the Throwing Shoulder of Asymptomatic Professional Baseball Players.

3:20 pm: Arnet U., van Drongelen S., van der Woude L.H.V., Veeger H.E.J.
Load on the shoulder in handcycling and hand rim wheelchair propulsion.

3:40 pm: Rankin, J.W., Kwarciak, A.M., Richter, W.M., Neptune, R.R.
The Influence of Altering Push Force Effectiveness on Mechanical Efficiency during Wheelchair Propulsion.

4:00 – 5:00 pm: Discussion/Round Table Session: The Future of Shoulder Motion Measurement
Panelists: Andrea G. Cutti, Kristin D. Zhao, J. Erik Giphart

5:00 – 7:00 pm: Opening Reception: Coffman Plaza

Monday July 26th

8:00 – 8:30 am: Breakfast: Mississippi Room; 3rd floor, Coffman Union

Platform Sessions

Surgical – Moderator: Samuel R. Ward

8:30 am: Cole, P.A., Schroder, L.K., Gauger E.M.
Surgical and Functional Outcomes after Operative Management of Extra-articular Glenoid Neck and Scapula Body Fractures.

8:50 am: Gauger E.M., Cole, P.A., Talbot, M., Schroder, L.K., Anavian, J.
Extra-articular Malunions of the Scapula: A comparison of Functional Outcome Before and After Reconstruction.

9:10 am: Röderer G, Brianza S, Tami A, Schiuma D, Schwieger K, Scola A, Gebhard F.
Mechanical in Vitro Determination of Local Bone Quality in the Proximal Humerus. Technique and Correlation with Xtremect TM.

9:30 am: Suárez D.R., Nerkens W., Valstar E.R., Rozing P.M., van Keulen F. Experimental Evaluation of Compression and Locking Screws in a Cementless Glenoid Component.

9:50 am: Giphart J.E., Dewing C.B., Elser F., Krong J.P., Peterson D.S., Torry M.R., Millett P.J. Does Biceps Tenodesis Increase Glenohumeral Translations During Overhead Motions? An in vivo Biplane Fluoroscopy Study.

10:10 -10:30 am: Break

Kinematics I – Moderator: Andrea Giovanni Cutti

10:30 am: Lagacé P.Y., Billuart F., Ohl X., Skalli W., Tétreault P., de Guise J., Hagemester N. Biplanar X-ray for the study of gleno-humeral translations: preliminary results in healthy and rotator cuff-deficient subjects.

10:50 am: Chopp, J.N., O'Neill, J.M., Hurley, K., Dickerson, C.R. Radiographic Examination of Humeral Head Migration after Fatiguing the Rotator Cuff.

11:10 am: Chopp, J.N., Fischer, S.L., Dickerson, C.R. Evaluating 3-D Scapular Kinematics Following a Fatiguing Protocol which causes Superior Humeral Head Migration.

11:30 am: Camargo P.R., Phadke V., Ludewig P.M., Salvini, T.F. Three-dimensional shoulder kinematics after total clavicle resection: an individual case.

11:50 am: Lunch

12:30- 2:00 pm: Poster Session – Moderator: Jonathan Reynolds

Ribeiro Andrea, Pascoal Augusto Gil. The External Shoulder Rotation Range-of-Motion on Thrower Athletes.

Sarkar S., Ludewig P.M. Comparison of ISB Recommended Humeral Coordinate Systems.

Gauger E.M., Wijdicks C.A., Schroder L.K., Ludewig P.M., Cole P.A. Improved Outcome after Reconstruction of Ipsilateral Scapula Malunion and Clavicle Nonunion Demonstrated by Functional Outcome and Novel Kinematic Technique.

Alexander W. Hooke, Krista A. Coleman Wood, Diane M. Serfling, Meegan Van Straaten and Kenton R. Kaufman. Repeatability of Palpation Dependent Scapular Kinematics.

Petersen, B.W.; Nystrom, C.S.; Pham, T. D.; Hybben, N. M.; Camargo, P. R.; Phadke, V, Braman, J. P.; LaPrade, R. F.; Ludewig, P.M. Effects of Elevation Angle and Plane of Motion on Subacromial and Internal Impingement.

Cieminski, C.J., LaPrade R.F., Phadke V., Klappa S.G., Ludewig P.M. The Validity and Reliability of a Radiographic Technique in the Measurement of Humeral Retroversion.

Platform Sessions

Movement Abnormalities/Motor Control – Moderator: Cort J. Cieminski

2:00 pm: Reynolds, J. F., Leduc, R. E., Kahnert, E. K. R., Ludewig, P. M. Shoulder Joint and Muscle Exposure in Violin Musicians: A Three-Dimensional Kinematic and Electromyographic Exposure Variation Analysis.

2:20 pm: Jaspers E., Feys H, Bruyninckx H, Molenaers G., Harlaar J, Klingels K., Desloovere K. Upper Limb Kinematic Characteristics in Children with Hemiplegic Cerebral Palsy and Typically Developing Children

2:40 pm: Phadke V., Ludewig P.M. Study of the scapular muscle latency and deactivation time in people with and without shoulder impingement.

3:00 pm: Spinelli B.A., Ebaugh D.D Cannella M. Measures of Scapular Control and Coordination: A Pilot Study.

3:20 – 3:40 pm: Break

Tissue/Muscle Mechanics – Moderator: Dirk Jan Veeger

3:40 pm: Borstad J.D., Dashottar A. Evaluating Five Posterior Shoulder Tightness Measurements

4:00 pm: Silldorff, M.D., Lane J.G., Lieber, R.L., Ward S.R. Passive Mechanical Properties of the Human Supraspinatus and Infraspinatus Muscles.

4:20 pm: Lake S.P., Miller K.S., Elliott D.M., Soslowsky L.J. Inhomogeneous Multiaxial Tensile Properties, Fiber Alignment and Realignment Under Load of Human Supraspinatus Tendon.

Tuesday July 27th

8:00 -8:30 am: Breakfast: Coffman Union

Platform Sessions

Sports/Wheelchair – Moderator: Kristin D. Zhao

8:30 am: Frère J., Göpfert B., Slawinski J., Tourny-Chollet C. Wavelet-EMG-Analysis of Shoulder Muscles During a Power Backward Giant Swing on High Bar.

8:50: Hurd WJ, Hooke A, Morrow MM, Kaufman KR. Shoulder Characteristics in a Youth Baseball Pitcher Diagnosed with Little Leaguer's Elbow: A Case Study Comparison.

9:10 am: Shashank Raina, Jill L. McNitt-Gray, Sara Mulroy, Philip S. Requejo. Effect of Increased Load on Scapular Kinematics During Wheelchair Propulsion in Users with Paraplegia and Tetraplegia

9:30 am: van Drongelen S., van der Woude, L.H.V., Veeger H.E.J. Load on the Shoulder Complex During Wheelchair ADL.

9:50 am: Morrow M.M., Kaufman K.R., An K.N. Scapula Kinematics in Wheelchair Propulsion.

10:10 -10:30 am: Break

Kinematics II/Measurement – Moderator: Augusto Gil Pascoal

10:30 am: Cutti, A.G, Ulrich, M.J.H., van Tuijl, E.A.B., Garofalo P., Veeger, D.J. Ambulatory Measurement of the Scapulothoracic Motion: Accuracy of a Protocol Based on Inertial and Magnetic Sensors.

10:50 am: Warner, M.B., Chappell, P.H., Stokes, M.J. A Comparison Between the Acromion Marker Cluster and Scapular Locator Techniques for Measuring Scapular Kinematics During Upper Limb Elevation and Lowering.

11:10 am: Shorter, K., Lake, J., Smith, N., Lauder, M. Acromion Cluster Reliability Under Dynamic Loading Conditions.

11:30 am: Szucs K.A., Borstad J.D. Capturing 3D Clavicle Kinematics: Validation of Surface Sensor.

11:50 am – 1:00 pm: Lunch & Business Meeting

Stability, Modeling, and Electromyography – Moderator: Ed Chadwick

1:00 pm: Krystyna Gielo-Perczak. Static Middle Deltoid Muscle restraint to Superior-Inferior Translation of the Glenohumeral Joint.

1:20 pm: Lemieux P.O., Hagemester N., Tétreault P., Nuño N. Relationship Between the Proximal Humerus Anatomy and the Glenohumeral Joint Stability: A Numerical Sensitivity Study.

1:40 pm: P.B. de Witte, W. Visch, J. Schut, R.G.H.H. Nelissen, J.H. de Groot. Arm ADductor Activation during ABduction in patients with rotator cuff tears - Validation of a new measuring instrument.

2:00 pm: Nikooyan A.A., Veeger H.E.J., Bolsterlee B., Westerhoff P., Graichen F., Bergmann G., Van der Helm F.C.T. Development of an EMG-Assisted Musculoskeletal Model of the Shoulder and Elbow.

2:20 – 2:40 pm: Break

Controllers and Neural Networks – Moderator: John D. Borstad

2:40 pm: Blana, D., Chadwick E.K., Kirsch R.F. Performance of a feedforward-feedback FES controller in an individual with high tetraplegia.

3:00 pm: W.H.K. de Vries, H.E.J. Veeger, C.T.M. Baten, F.C.T. van der Helm. Shoulder Joint Reaction Forces can be Estimated by Neural Networks

3:20 pm: Kirsch, R.F., Blana, D., Donoghue, J.P., Hochberg, L.R., Simeral, J.D., Chadwick, E.K. Control of a simulated human arm via an intracortical brain-computer interface.

3:45 -4:45 pm: Keynote Lecture: ‘Biplane X-ray Analysis of In-Vivo Shoulder and Tendon Function’, Dr. Michael J. Bey, PhD, Henry Ford Hospital

6:00 pm: Conference Closing Dinner

Wednesday July 28th

Optional Lab Tours – Mayo Clinic Biomechanics Labs – contact Kristin Zhao at Zhao.kristin@mayo.edu