

12th International Shoulder Group Meeting

Sunday, August 12, 2018

Phillips Hall, Siebens Building, Mayo Clinic Downtown Campus

8:00 AM Registration and breakfast, Phillips Hall, Siebens Building

9:00 AM Welcome remarks: *Missy Morrow and Meghan Vidt*

9:15 AM Podium session 1: Rotator Cuff and Scapular Kinematics
Session Chair: *Andrea Cutti, PhD*

9:15 The Coupled Mechanics of Scapulothoracic Upward Rotation
Rebekah Lawrence

9:27 Anterior and Posterior Supraspinatus Activation Differences During Elevation Tasks Using Indwelling Electromyography
Alan Cudlip

9:39 Shoulder Complex Kinematics Pre- and Post- Rotator Cuff Repair Surgery
Brooke Slavens

9:51 Muscle compensation helps maintain glenohumeral joint stability after rotator cuff tear: a simulation study
Sujata Khandare

10:03 Scapular Kinematics Following a Closed-Chain Rehabilitation Program in Patients with Rotator Cuff Tears
Hillary Plummer

10:15 Contribution and activity patterns of sub-regions of supraspinatus and infraspinatus during isokinetic activities
Ronelle Calver

10:30 AM Coffee break & Visit Industry Exhibition

10:50 AM Keynote 1: Katherine Saul, PhD, North Carolina State University
Making a Clinical Impact with Shoulder Modeling

11:50 AM Lunch (provided), Phillips Hall

12:45 PM Podium session 2: Wheelchair 1
Session Chair: *Jill Mcnitt-Gray, PhD*

12:45 The effect of fatigue on applied forces during constrained wheelchair propulsion: Implications for shoulder loads
Fransiska Bossuyt

12:57 Restoration of elbow flexion by tendon transfer: effect on wheelchair propulsion characteristics and shoulder load
Ursina Arnet

1:09 Estimating supraspinatus proximity to the coracoacromial arch during unilateral reaching tasks in manual wheelchair users
Stefan Madansingh

1:21 Shoulder impingement during free-living wheelchair propulsion
Emma Fortune

1:35 PM Stretch break

1:45 PM Podium session 3: Athletics and Sports
Session Chair: *Gretchen Oliver, PhD, FACSM, ATC*

1:45 Kinematic assessment between wind-up and stretch pitching among upper extremity electromyographical evaluation
Megan Marie Smidebush

1:57 Functional characteristics of softball pitchers with and without pain
Gretchen Oliver

2:09 Returning to Cycling Following Shoulder Surgery
Emma Boutcher

2:21 Using a Four-Axis Humero-Thoracic System to Study Arm-Swing Techniques Used During the Volleyball Spike
Antonia Zaferiou

2:35 PM Coffee break & Visit Industry Exhibition

2:45 PM Exhibitor Presentations (4 minutes per exhibitor, 12 minutes total)

3:00 PM Podium session 4: Arthroplasty Session Chair: Andreas Kontaxis, PhD
3:00 Testing of a robotic platform for the evaluation of prosthetic stability of the glenohumeral joint <i>Matteo Mancuso</i>
3:12 Biomechanical Comparison between Reverse Shoulder Arthroplasty and Total Shoulder Arthroplasty on Biconcave Glenoid <i>Xiang Chen</i>
3:24 Pre-operative Reverse Total Shoulder Arthroplasty Shoulder Function: Using an Acromion Marker Cluster to Analyze Scapular Dynamics <i>Antonia Zaferiou</i>
3:36 Overcorrected implants to avoid shoulder subluxation: a patient-specific finite element study <i>Yasmine Boulanaache</i>
4:00 PM ISG meeting, Open to all membership
5:00 PM Mayo/Lab tour
6:30 PM Conference dinner (provided), Mathews Grand Lobby, Mayo Building

Monday, August 13, 2018

8:00 AM Registration and breakfast
8:15 AM Podium session 5: Functional Assessment & Pain Session Chair: Paula Ludewig, PhD, PT, FAPTA
8:15 Composite Injury Risk Measure for Sign Language Users <i>Gretchen Roman</i>
8:27 Biomechanical and Patient-Reported Functional Outcomes of the Shoulder Following Mastectomy and Breast Reconstruction <i>Joshua Leonardis</i>
8:39 Measuring posterior shoulder tightness: the influence of posterior capsule and humeral retroversion <i>Dayana Patricia Rosa</i>
8:51 A pilot study for characterizing dual-task shoulder capability in chronic moderate/severe stroke <i>Joseph Kopke</i>
9:03 Clinical predictors can better explain shoulder function in comparison to pathoanatomical findings Rodrigo Py Goncalves Barreto
9:15 Temporal summation of pain is altered in patients with shoulder pain <i>Melina Haik</i>
9:30 AM Stretch break
9:45 AM Podium session 6: Wheelchair 2 Session Chair: Kristin Zhao, PhD
9:45 4-axis net joint moment power distribution <i>Jill McNitt-Gray</i>
9:57 Shoulder muscle activity in individuals with spinal cord injury using geared manual wheelchairs during start-up <i>Omid Jahanian</i>
10:09 The effect of increased rolling resistance on shoulder kinematics and impingement during manual wheelchair propulsion <i>Joseph Mozingo</i>
10:21 A Comparison of Forwards versus Backwards Wheelchair Propulsion <i>Martin Warner</i>
10:35 AM Coffee break & Visit Industry Exhibition
11:00 AM Keynote 2: Lori Michener, PhD, PT, ATC, FAPTA, University of Southern California Jonathan Barlow, MD, Mayo Clinic Rotator Cuff Tear: Rehab and Repair
12:00 AM Lunch (provided)

12:45 PM Podium session 7: Methods/Modeling**Session Chair: Clark Dickerson, PhD**

- 12:45 Scapular orientation estimation performance of the acromion marker cluster in a clinical population during arm elevation
Angelica Lang
- 12:57 Finite element model of the supraspinatus tendon during simulated functional reach
John Looft
- 1:09 The Evolution of Postoperative Monitoring: Continuously Capturing Shoulder Elevation with Inertial Measurement Units
Ryan Chapman
- 1:21 Kinematics and Utility of Shoulder Joint Laxity Tests as Diagnostic Criteria in Multidirectional Instability
Justin Staker
- 1:33 Comparison of Simple and Complex Shoulder Exoskeleton Models for Musculoskeletal Dynamic Simulation
Allison Nelson

1:45 PM Coffee break & Visit Industry Exhibition**2:15 PM Podium session 8: Muscle****Session Chair: DirkJan Veeger, PhD**

- 2:15 Hand and Plane of Movement Influence Shoulder Muscle Recruitment
Tea Lulic
- 2:27 Upper Extremity Usage in Adults with Traumatic Brachial Plexus Injuries
Christina Webber
- 2:39 The influence of hand location and exertion direction on electromyographic signals in maximal efforts
Jacquelyn Maciukiewicz
- 2:51 Biomechanics of lower trapezius and latissimus dorsi transfers in rotator cuff deficient shoulders
Andreas Kontaxis
- 3:03 Electromyography activation of shoulder muscles during open and closed chain exercises for the upper extremity
Hillary Plummer
- 3:15 Three-dimensional Assessments of Strength for Clarifying Shoulder Capabilities
Emma Baillargeon

3:30 PM Stretch/Setup Break**3:45 PM Session 9: Posters & Reception (wine & cheese provided)**

- 3:45-4:00 1 MINUTE PODIUM INTRODUCTION FOR ALL POSTERS
- 1 Shoulder, Elbow, and Wrist Joint Excursions for Touchscreen Gestures
Deanna Asakawa
 - 2 Bilateral scapular kinematics, asymmetries and shoulder pain in wheelchair athletes
Barry Mason
 - 3 The impact of scapulothoracic exercise training on individuals with shoulder pain: An EMG and kinematic Investigation
Gaura Saini
 - 4 Feasibility of using the HTC Vive for Upperlimb Kinematic data collection
Kate Spitzley
 - 5 Relationship between myofascial trigger points and shoulder mobility and muscle strength in subjects with unilateral subacromial
Catarina de Oliveira Sousa
 - 6 Shoulder tendon macromorphology and impairments in dental hygienists
Catarina de Oliveira Sousa
 - 7 Relative activity of sub-regions of supraspinatus and infraspinatus during dynamic tasks performed with free weights
Ronelle Calver
 - 8 Shoulder Muscle Activation Changes in Patients Receiving Subacromial Injection and Physical Therapy
Jennifer Cooper

9 A Quantitative Approach to Clinical Glenohumeral Laxity Assessment

Constantine Nicolozakes

10 Development of a pediatric shoulder model to evaluate obstetric brachial plexus palsy

Asma Salhi

5:00 PM Award Ceremony & reception continued

5:30 PM Closing remarks