

2019 RMBS Schedule

Friday, April 12, 2019

Time	Event	Presenter / Chair	Location
7:45-8:05	Registration with Continental Breakfast		Todd Wehr Lobby
8:05-8:10	Welcome from 2019 RMBS Program Chair	Brian Stemper	Todd Wehr
8:10-8:15	Welcome from MSOE President	John Walz	Todd Wehr
8:15-8:20	Welcome from RMBS President	Hamed Benghuzzi	Todd Wehr
8:20-8:25	Keynote 1 Introduction	Jeffrey LaMack	
8:25-9:05	<i>"The Promise of Genetic Research in Congenital Heart Disease in Children"</i>	Aoy Tomita-Mitchell	Todd Wehr
9:15-10:45	Session 1: Gait and Rehabilitation	<i>Jessica Fritz</i> <i>Guido Pagnacco</i>	Todd Wehr
	<ul style="list-style-type: none"> 4567: Surface EMG based Fatigue Index Estimation for Biceps Brachii Muscle with Polynomial Wigner-Ville Marginal Spectrum 4518: Design of Force Measurement System for Pedaling in MR Environment 4512: Wearable Sensor-Based Gait Classification in Idiopathic Toe Walking Adolescents 4525: Application of OpenSim for Visual Biofeedback Propulsion Training in Pediatric Manual Wheelchair Users 4513: Customized Wearable Sensor-Based Insoles for Gait Re-Training in Idiopathic Toe Walkers 4504: Role of the Hip Capsule on Joint Stability During External Rotation 	Edward Jero (via Skype) Benjamin Rappaport Michael Pollind Jacob Rammer Michael Pollind Melinda Choi	
10:45-11:00	Coffee Break		Todd Wehr Lobby
11:00-12:30	Session 2: Brain Injury / Concussion	<i>Kenneth Butler</i> <i>Carolyn Hampton</i>	Todd Wehr
	<ul style="list-style-type: none"> 4527: The Effect of Coaching and Player Position on Head Impact Exposure in Youth Football Players 4541: Consistency in Head Impact Exposure From Year to Year Among High School and Division III College Football Players 4568: Estimates of High-Risk Single and Cumulative Head Impact Doses in American Football 4544: Comparison of Different Measures for Head Impact Exposure in Concussed Amateur Football Athletes 4534: In-Season Concussion Symptom Presentation in Men's and Women's Rugby 4555: The Contribution of Sensorimotor Memories to Implicit Motor Learning After Concussion 	Eamon Campolettano Nicholas Stellpflug Adam Bartsch Brian Stemper Emily Kieffer Devon Lantagne	
12:30-1:45	Lunch featuring Keynote 2 Presentation: <i>"Developing and Ecosystem for Parallel Translation of Medical Devices: Perspectives from a Career in Industry, Government, and Academia"</i>	Kip Ludwig	Todd Wehr

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1:45-3:15	Session 3: Basic and Injury Biomechanics	<i>Alok Shah</i> <i>Sajal Chirvi</i>	Todd Wehr
	<ul style="list-style-type: none"> • 4521: A Comparison of Strain Rate Dependency Between Human Prostate and Other Organs in Unconfined Compression Blake Johnson • 4549: Characterization of Porcine Cardiac Tissue Compressive Viscoelastic Properties in Human Models Devin Wozniak • 4553: Effect of Time on the Mechanical Properties of Caprine Organ Tissue Jared Koser • 4570: Preliminary Comparison of Projectile Size and Material for Penetration Thresholds in Porcine Leg Tissue Maria Paris • 4545: Development of an Experimental Apparatus to Produce Intervertebral Disc Herniation in a Human Cadaver Specimen using Repetitive Combined Compression and Flexion Loading John Derosia • 4539: Comparative Lumbar Spine Acceleration Data During Daily and Dynamic Activities, Tasks of Daily Driving, and Low Speed Lateral Vehicle Impacts Anne Mathias 		
3:15-3:30	Coffee Break		Todd Wehr Lobby
3:30-4:00	Rapid Communications (from posters)	<i>Brian Stemper</i>	Todd Wehr
	<ul style="list-style-type: none"> • 4503: Kinematic Model for Assessment of In Vivo Hindfoot Motion During Gait Using Biplane Fluoroscopy (Cross) • 4571: A Comparison of Wearable Head Impact Sensors (Chiariello) • 4510: The Impact of Hydroxyapatite Sintering Temperatures on the Structural and Functional Capacity of Embryonal Lung Fibroblasts (Benghuzzi) • 4517: Recurrence Period Density Entropy- A Phase Space Method for Tracking Pivot Point of a Numerically Simulated Meandering Rotor (Arunachalam) • 4516: A Multiscale Frequency Analysis of Phonocardiogram Discriminates Normal and Extra Heart Sound (Sundaram) • 4531: Morphomic and Material Properties of Female Human Foot-Ankle Specimens (Dausman) • 4562: The Effect of Duration of Kinesiology Tape Application on Endurance of Vastus Lateralis During an Isotonic Fatiguing Knee Flexion/Extension Exercise (Wu) • 4551: Methods for Quantifying Gait Kinetics in Children with Hypermobility Ehlers-Danlos Syndrome (Qashqai) • GLBC: Near Infrared Pen for Image Guided Tissue Analysis (Lynch) 		
4:00-5:30	Poster Viewing and Judging Session	<i>Elena Oggero</i>	Todd Wehr Lobby
5:30-6:30	<p>Plenary Panel Session, in affiliation with HealthTechMKE</p> <p><i>Founders Forum: What You Know Now that You Wish You Knew Then</i> Moderated by Milton Hwang, Senior Director at Connecture, member of HealthTechMKE leadership team</p> <p><u>Panelists</u> Scott Bolte, Founder of Trailhead Clinical Strategies, LLC Lars Olson, Founder of Cortina Medical Devices, LLC, Associate Professor of Biomedical Engineering, Marquette University and Medical College of Wisconsin Will Tesch, Founder & CEO of TeschGlobal and HealthLX Amanda Baltz, Founder & CEO of Spalding Medical</p>		Todd Wehr
6:30-8:30	Cocktail Reception with Heavy Hors d'oeuvres		Grohmann Museum

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Saturday, April 13, 2019			
Time	Event	Presenter	Where
7:45-8:15	Registration with Continental Breakfast		Todd Wehr Lobby
8:15-8:30	Welcome back, announcements	Stemper	Todd Wehr
8:30-10:45	Session 4: Extremity Biomechanics	<i>Joseph Cameron</i> <i>Mei Wang</i>	Todd Wehr
	<ul style="list-style-type: none"> 4552: Evaluation of Hand-rim and Wrist Joint Kinetics During Geared Manual Wheelchair Propulsion in Veterans with Spinal Cord Injury 4546: A Novel Design of a Single Actuator Differential Mechanism to Control a Prosthetic Hand 4522: A Finite Element Based Approach for Estimating the per Muscle Percent Contribution to Upper Limb Motion 4542: Biomechanical Evaluation of Overhead Throwing in Able-Bodied and Wheelchair Lacrosse Players 4514: Geometry Sensitivity in Finite Element Models of Long Bones in Osteogenesis Imperfecta 4530: Morphometric Analysis of Hind Foot Ankle Bones 4563: Influence of Trabecular Bone Density on Calcaneus Fracture in Axial Impacts 4505: Design of a Novel Ankle Joint for an AFO for Individuals with Drop-Foot Evaluated on Able-Bodied Subjects 4520: Comparative Analysis of Anatomic Coordinate Systems to Calculate Hindfoot Kinematics Using Biplane Fluoroscopy 	<p>Omid Jahanian</p> <p>Fadi Gerges</p> <p>Karan Devane</p> <p>Matthew Hanks</p> <p>Jessica Fritz</p> <p>Sajal Chirvi</p> <p>Carolyn Hampton</p> <p>Eileen Baker</p> <p>Karen Kruger</p>	
10:45-11:00	Coffee Break		Todd Wehr Lobby
11:00-12:15	Session 5: Brain Injury / Concussion	<i>Brian Stemper</i> <i>John Humm</i>	Todd Wehr
	<ul style="list-style-type: none"> 4519: A Methodology for Reconstructing Real-World Damage to Bicycle Helmets using Oblique Impacts: A Case Study 4535: Assessing the Interchangeability of Different Impact Devices to Replicate a Football Helmet Testing Protocol 4547: Laboratory Validation of Helmeted and Non-Helmeted Wearable Sensors 4532: Validation of a Helmet Shell-and-Liner Finite Element Model in Dynamic Frontal and Lateral Impacts 4538: Head Acceleration Measurements During Vehicle Driving Tasks and Lateral Impacts Relative to Head Accelerations During Daily and Dynamic Activities 	<p>Megan Bland</p> <p>Teresa Reiber</p> <p>Alok Shah</p> <p>Dale Johnson</p> <p>Alyson Light</p>	
12:15-1:30	Lunch featuring Keynote 3 Presentation: "Advances in Vehicle Safety and the Role of Biomechanics"	Frank A. Pintar, PhD	Todd Wehr

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1:30-2:45	Session 6: Imaging, Biosensing and Automated vehicles	<i>Hamed Benghuzzi</i> <i>Paul Licato</i>	Todd Wehr
	<ul style="list-style-type: none"> • 4523: Lane Change and Merging Related Crashes Have Diverse Outcomes: A CIREN Case Review • 4506: Selection of Patient-Specific Boundary Conditions with Application to Anomalous Aortic Origin of a Coronary Artery Under Resting and Stress Conditions • 4548: Microwave Ablation Versus Plasmonic Nanoparticle-Mediated Photothermal Therapy for Treatment of Liver Tumors • 4560: High Resolution Lymphovascular Imaging with a Dual Camera NIR-SWIR Multispectral Imaging System • 4572: Sodium Bicarbonate Remediation of Antropogeic Contamination of Water at the GBNERR in Mississippi 	<p>Lauren Eichaker</p> <p>Atefeh Razavi</p> <p>Mir Hadi Razeghi Kondelagi</p> <p>Chris Hansen</p> <p>Ibrahim Farah</p>	
2:45-3:00	Coffee Break		Todd Wehr Lobby
3:00-4:30	Session 7: Computational Bioengineering	<i>Jeffrey LaMack</i> <i>Michelle Tucci</i>	Todd Wehr
	<ul style="list-style-type: none"> • 4564: Effect of Grey Level Transformation Technique on Keypoint Based Differentiation of Intermediate Indirect Immunofluorescence Images • 4565: A Virtual Reality Game That Enhances Educational Outcomes For a Surface Energy Laboratory • 4550: Design of a Rapid-Prototyped Smart Robotic Exoskeleton for Power Wheelchair Users • 4556: Decreased Functional Connectivity in Sensorimotor Brain Networks in Persons with Multiple Sclerosis and Upper Extremity Dysfunction • 4507: A Computational Study Assessing Threshold Criteria for the Treatment of Left Main Coronary Artery Bifurcation Containing Multiple Stenosis • 4526: Compressed Sensing MRI Reconstruction using Weighted Thresholding of Wavelet Tree Structure 	<p>Kanchana Devanathan (via Skype)</p> <p>Aleksander Niemiec</p> <p>Bridget Schabron</p> <p>Julie Wagner</p> <p>Arash Ghorbanniahassankiadeh</p> <p>Craig Chin</p>	
7:00-9:00	President's Banquet & Student Awards		Todd Wehr