

ESM 2014 Program / Presentations

Wednesday, July 2nd 2014

16:30 - 20:30	Registration, Sheraton Commander Hotel, Lobby
19:00 - 21:00	Opening Reception, Nubar Restaurant, Sheraton Commander Hotel

Thursday, July 3rd 2014

6:30 - 8:30	Breakfast in Nubar Restaurant (sit down), Sheraton Commander Hotel
7:30 - 8:30	Registration
8:30 - 8:45	Welcome <i>Vera Novak, Howard J. Hillstrom, Peter Seitz</i>
8:45 - 9:30	Keynote Lecture 1 Design for Extreme Exploration: Self, Sea and Space <i>Dava Newman, PhD, MIT, Department of Aeronautics and Astronautics and Engineering Systems, Boston MA, USA</i> Chair: <i>Novak, V</i>
9:30 - 10:30	Session I: Rehabilitation Chairs: <i>Mickle, K and Ford, K</i>
9:30 - 10:00	art in science award finalist Retraining the Foot Muscles to Restore Toe Flexor Strength in Older People <i>Mickle, KJ, Caputi, P, Potter, JM, Steele, JR</i>
10:00 - 10:10	The Effect of 6 Weeks Rope Jumping Training on the Plantar Pressure Distribution in Pes Planus, Pes Cavus and Pes Rectus of Secondary Girl Students <i>Mimar, R, Khalil, M, Somayeh, H</i>
10:10 - 10:20	Pedography as Biofeedback System for Correction of Equinovarus Gait in Individuals with Stroke <i>Khallaf, ME</i>
10:20 - 10:30	Gait Speed as an Indicator of Endothelial Dysfunction and Chronic Inflammation <i>Pimentel, DA, Jor'dan, A, Chung, C, Manor, B, Novak, V</i>
10:30 - 11:00	Coffee Break
11:00 - 11:50	Session II: Diabetes I Chairs: <i>Sinacore, D and Song, J</i>
11:00 - 11:10	Reduced Plantar Sensation Leads to Heterogeneous Reactions in Plantar Pressure Distribution During Normal Walking <i>Lange, JS, Milani, TL</i>
11:10 - 11:20	The Efficacy of Removable Devices to Reduce Pressure and Heal Plantar Foot Ulcers in Diabetes: A Randomized Controlled Trial <i>Bus, SA, van Netten, JJ, Manning, E, Bril, A, Spraul, M, and van Baal, S</i>
11:20 - 11:30	The Evaluation of Plantar Pressure Distribution in Type 2 Diabetic Patients Native Chinese – A Follow up Study <i>Yang, L, Hao, F, Chen, W</i>

11:30 - 11:40	A Retrospective Analysis of Peak Plantar Pressure and Shear Locations and their Association with Diabetic Ulcer Sites <i>Yavuz, M, Brem, R, Richards, SA, Garfield, K, Gray, ST, Jensen, AE, Rao, N, Delvadia, N, Flyzik, M</i>
11:40 - 11:50	Tarsal Bone Density, Alignment & Peak Plantar Stress in Adult-Acquired Neuropathic Mid Foot Deformities <i>Sinacore, DR, Gutekunst DJ, Bohnert, KL, Hastings, MK</i>
11:50 - 12:20	Session III: Shoes Chairs: <i>Pisciotta, J and Woo, H</i>
11:50 - 12:00	Method for Measuring Fluid Pressures in the Shoe-Floor Interface for Evaluating the Adequacy of Tread <i>Beschorner, KE</i>
12:00 - 12:10	The Influence of Boot and Surface Type on In-Sole Pressure and Comfort when Walking on Simulated Coal Mining Surfaces <i>Dobson, JA, Riddiford-Harland, DL, and Steele, JR</i>
12:10 - 12:20	Biomechanical Evaluation of Two Different Forefoot Relief Shoes <i>Lullini, G, Caravaggi, P, Berti, L, Leardini A, Giangrande, A, Giannini, S</i>
12:20 - 13:20	Lunch in Mount Vernon Room, Sheraton Commander Hotel
13:20 - 14:05	Keynote Lecture 2 Epidemiology and Foot Pathology: Bridging the Distance between Populations and Foot Sciences <i>Marian Hannan, ScD, Harvard Medical School and Institute for Aging Research at Hebrew SeniorLife, Boston MA, USA</i> Chair: <i>Hillstrom, HJ</i>
14:05 - 15:05	Session IV: Normative Biomechanics Chairs: <i>Kersting, U and Hillstrom, HJ</i>
14:05 - 14:15	Comparison of Peak Plantar Pressures in the Army Cadet Population: The Impact of a 6 Week Intensive Training Program <i>Thaqi, I, Gibbons, MW, Lenhoff, MW, Song, J, Neary, MT, Zifchock, RA, Pasquale, M, Hillstrom, HJ</i>
14:15 - 14:25	Plantar Loading Differences Between Genders During an Unanticipated Side-Cut <i>Queen, RM, Carpenter AL, Garrett, WE, Butler, RJ</i>
14:25 - 14:35	The Effect of Crossed Responses on Dynamic Stability <i>Gervasio, S, Kersting, U, Farina, D, Mrachacz-Kersting, N</i>
14:35 - 14:45	How Does Step Frequency Influence Plantar Loading During Comfortable Walking? <i>Hollanders, L, Melai, T, de Lange TLH</i>
14:45 - 14:55	Comparison of Foot Length and Width Measurements: Direct in Stance Versus Calculated From Dynamic Plantar Pressure Footprint <i>Song, J, Choe, K, Adams, K, Tango, D, Pettineo, S</i>
14:55 - 15:05	Regional Foot Loading During Unweighted Running in a Lower Body Positive Pressure Treadmill <i>Ford, KR, Wirfel, LA, Doarnberger, M, Smoliga, JM</i>

15:05 - 16:05	Session V: Poster Teaser 1, Posters & Coffee Break Chair: <i>Shultz, S</i>
	Description of Plantar Pressure Parameters in a West Point Cadet Population: Effect of Foot Structure <i>Gibbons, M, Thaqi, I, Lenhoff, MW, Zifchock, RA, Neary, MT, Brechue, WF, Song, J, Hillstrom, HJ</i>
	Baropodometric Evaluation of a "Shock Absorbing" Insole in a Group of Italian Special Forces Soldiers Affected by Overload Pathologies <i>Berti, L, Lullini, G, Ortolani, M, Caravaggi, P, Leardini, A</i>
	Perceived Comfort & Plantar Pressure of an Energy Storing and Returning Orthosis in a Prototype Military Boot: A Pilot Study <i>Goss, DL, Bisagni, FT, Keenan, PG, Call, BP, Harney, NA, Wheelis, IE, Cavanagh, PR, Teyhen, DS, Moore, JH</i>
	The Correlation Between Static Measurement of Medial Longitudinal Arch and Dynamic Measurement of Arch Index <i>Shakibi, B, Mimar, R, Shakibi, V</i>
	Joint Mobilization Forces and Therapist Reliability in Subjects with Knee Osteoarthritis <i>Tragord, BS, Gill, NW, Silvernail, JL, Teyhen, DS, Allison, SC</i>
	Using Auditory Feedback to Standardize Pressure for Assessing Tender Points <i>Degenhardt, BF, Johnson, JC, Webb, SJ, Pamperin, K, Snider, EJ, Snider, KT, Hammond, T</i>
	Time-Varying Patterns Reveal Foot Loading Changes After Foot-Ankle Exercises for Diabetic Polyneuropathy <i>Sartor, CD, Sacco, ICN, Vigneron, V</i>
	Influence of Saddle Pads on the Pressure Distribution of a Well Fitted Equine Saddle: A Pilot Study <i>Crowell, A, Gavin, A</i>
	The Influence of an 8-Week Rider Core Fitness Program on Pressure Distribution on the Equine Back <i>Hampson, AM</i>
	Evaluation of Interface Load by Angle Variation of Mattress Back Support for Automatic Excretion Handling Systems <i>Kim, J, Sim, W, Lim, S, Won, B</i>
	A Comparison Between emed-x and Matscan Plantar Pressure Systems <i>Hannan, MT, Dufour, AB, Lenhoff, M, Awale, A, Gibbons, MW, Hillstrom, HJ</i>
16:05 - 17:15	Session VI: Hands Chairs: <i>Mootanah, R and Hillstrom, HJ</i>
16:05 - 16:35	art in science award finalist Did the Biomechanics of Making and Using Paleolithic Stone Tools Influence the Origin of the Derived Human Thumb? <i>Williams, EM, Richmond, BG</i>

16:35 - 17:05	art in science award finalist Feedback on Force, Sound and Video Sequence of Keystroke During Piano Playing <i>Gaertner, H, Pozzo, R</i>
17:05 - 17:15	Load Distribution Within the Hand During Cylinder Grip <i>Mühdorfer-Fodor, M, Ziegler, S, Harms, C, Neumann, J, Kundt, G, Mittlmeier, T, Prommersberger, KJ</i>
18:30 - 21:30	Evening Event Harvard Museum of Natural History Hors d'oeuvres, drinks and light dinner Tour Museum

Friday, July 4th 2014

	Networking day
6:30 - 8:30	Breakfast in Nubar Restaurant (sit down), Sheraton Commander Hotel
	Morning Cambridge Tours (leaving from the Sheraton Commander Hotel Lobby):
	Cambridge Running Tour 8:15 - 9:30
	Harvard Walking Tour 8:30 - 9:30
	Longfellow House and Garden Tours (three in total) 8:45 - 10:15
10:45	Bus Departure from Sheraton Commander Hotel to Fenway Park Yawkey Way activities upon arrival
13:35	Boston Red Sox vs. Baltimore Orioles
16:30	Bus Depart from Fenway Park to Bay State Cruise
17:45	Boat Boarding for Bay State Cruise
18:00 - 22:00	Whale watching cruise with dinner, drinks and fireworks
22:15	Buses return to Sheraton Commander Hotel

Saturday, July 5th 2014

6:30 - 8:30	Breakfast in Nubar Restaurant (sit down), Sheraton Commander Hotel
8:00 - 8:30	Registration, Sheraton Commander Lobby
8:30 - 9:15	Keynote Lecture 3 Mechano-Biology: Employ Physical Cues to Initiate Tissue Regeneration <i>Georg Duda, Julius Wolff Institut at Charité – Universitätsmedizin in Berlin, Germany</i> Chair: <i>Brüggemann, G-P</i>
9:15 - 10:25	Session VII: Diabetes II Chairs: <i>Bus, S and Sacco, I</i>
9:15 - 9:45	art in science award finalist Clinical Value of Temperature in Assessing Foot Loading in Diabetic Patients with and without Neuropathy <i>Yavuz, M, Brem, R, Richards, SA, Garfield, K, Gray, ST, Jensen, AE, Rao, N, Delvadia, N, Flyzik, M</i>

9:45 - 9:55	<p>High Plantar Loading and Low Bone Strength Lead to Increased Metatarsal Strain in Individuals with Diabetes and Neuropathy <i>Gutekunst, DJ, Bohnert, KL, Hastings, MK, Kaufman, KR, and Sinacore DR</i></p>
9:55 - 10:05	<p>Predictors of Barefoot Plantar Peak Pressure in Patients with Diabetes, Peripheral Neuropathy and a History of Ulceration <i>Bus, SA, Barn, R, Waaijman, R, Woodburn, J, and Nollet, F</i></p>
10:05 - 10:15	<p>Biomechanical Sequences of Minor Amputations in Patients With Diabetes Mellitus <i>Tsvetkova, TL, Bregovskiy, VB</i></p>
10:15 - 10:25	<p>Clinical and Foot Loading Changes After Foot and Ankle Exercise Intervention for Diabetic Polyneuropathy <i>Sartor, CD, Giacomozzi, C, Sacco, ICN</i></p>
10:25 - 10:50	<p>Coffee Break</p>
10:50 - 12:10	<p>Session VIII: Pressure Assessment Instrumentation <i>Chairs: Steele, J and Yavuz, M</i></p>
10:50 - 11:10	<p>Invited Talk Technical Standards for PMDs <i>Claudia Giacomozzi, PhD, Istituto Superiore di Sanità, Rome</i></p>
11:10 - 11:20	<p>Identifying Pressure Ulcer Risk of Patient Handling Sling Use with Interface Pressure Mapping <i>Peterson, MJ, Gutmann, J, Harrow, J Kerrigan, M, Kahn, J</i></p>
11:20 - 11:30	<p>Feasibility of Wearable Motion Capture System Using Inertial Motion Capture Sensors and In-Shoe Pressure System <i>Kim, HK, Khurelbaatar, T, Dorj, A, Kim, K</i></p>
11:30 - 11:40	<p>Ground Reaction Force Computation Tool for OpenSim Using Zero Moment Point Method <i>Dijkstra, EJ, Gutierrez-Farewik, EM</i></p>
11:40 - 11:50	<p>A Comparative Study of two Methods for Grip Force Monitoring on the Hand: Manugraphy System Versus Jamar Dynamometer <i>Mühlendorfer-Fodor, M, Ziegler, S, Harms, C, Neumann, J, Kundt, G, Mittlmeier, T, Prommersberger, KJ</i></p>
11:50 - 12:00	<p>Investigation on the Effects of Billet Placement on a Well Fitted Equine Saddle: A Pilot Study <i>Crowell, A, Gavin, A</i></p>
12:00 - 12:10	<p>Testing the Pressure Produced Under Compression Garments: Comparison of Measurement Devices Used in the Clinical Setting <i>McLaughlin, P</i></p>
12:10 - 13:10	<p>Lunch in Mount Vernon Room , Sheraton Commander Hotel</p>
13:10 - 13:55	<p>Keynote Lecture 4 Wearable and Home Monitoring Technologies for the Clinical Management of Long-Term Conditions <i>Paolo Bonato, PhD, Harvard Medical School and Motion Analysis Lab at Spaulding Rehabilitation Hospital, Boston MA, USA</i> Chair: Hillstrom, HJ</p>

13:55 - 14:25	Invited Talk Navigating NIH <i>Mary Rodgers, PhD, NIBIB National Institutes of Health</i> Chair: <i>Novak, V</i>
14:25 - 15:25	Session IX: Pathology Chairs: <i>Queen, R and Mootanah, R</i>
14:25 - 14:55	art in science award finalist Does Partial or Complete Wrist Fusion Change the Load Distribution of the Hand During Gripping? <i>Mühlendorfer-Fodor, M, Reger, A, Mittlmeier, T, Prommersberger, KJ</i>
14:55 - 15:05	Kinematic and Footprint-Based Parameters for the Classification of Functional Flatfoot <i>Giacomozzi, C, Leardini, A, Berti, L, Giannini, S, Caravaggi, P</i>
15:05 - 15:15	The Effect of Different Hallux Valgus Angles Upon First Metatarsophalangeal Joint Shear Stress: A Finite Element Study <i>Mootanah, R, Morgan, O, Mazzella, J, Reisse, R, Russell, R, Deland, JT, Ellis, SJ, Baxter, J, Hillstrom, HJ</i>
15:15 - 15:25	Multifractal Characteristics of Sway: A Comparison of Obese and Non-Obese Children <i>Shultz, SP, Fink, PW, D'Hondt, E, Lenoir, M, Hills, AP</i>
15:25 - 16:25	Session X: Poster Teasers 2, Posters & Coffee Break Chair: <i>Mickle, K</i>
	Protocol for 1000 Norms Project: Clinical Catalogue of Plantar Pressure and Musculoskeletal Measures Across the Lifespan <i>Mckay, M, Baldwin, J, Simic, M, Ferreira, P, Hiller, C, Vanicek, N, Nightingale, J, Moloney, N, and Burns, J</i>
	Influence of Shoe Cushioning and Running Experience on Plantar Pressure Distribution in Recreational Runners <i>Ribeiro, AP, Dinato, RC, Tessutti, V, João, SMA, Sacco, ICN</i>
	Research on The Vertical Ground Reaction Force of Midsole Hardness in High Heels <i>Hao, F, Yang, L, He, Y</i>
	Functional and Clinical Evaluation of a Biomechanical Shoe with Semi-Rigid Outsole <i>Berti, L, Lullini, G, Caravaggi, P, Leardini, A, Giangrande, A, Giannini S</i>
	Foot Loading Under the Heel Bone of Subjects Standing in Unstable Shoes <i>Jandová, S</i>
	Evaluation of Balancing Ability in Hemiplegic Patients Using Plantar Pressure Measurement Based on Type of Ankle-Foot Orthosis <i>Sim, W, Kim, J, Lim, S, Won, B</i>
	Data-Driven Directions for Effective Footwear Provision in Diabetic Patients with a History of Foot Ulceration <i>Arts, MLJ, de Haart, M, Waaijman, R, Dahmen, R, Berendsen, H, Nollet, F, and Bus, SA</i>
	Anthropo-Dynamic Research of Diabetics' Feet in Georgia <i>Shalamberidze, M, Grzelidze M, Shalamberidze K</i>
	Forefoot Plantar Pressures in Mild, Moderate and Severe Hallux Valgus <i>Hurn, SE, Vicenzino, BT, Smith, MD</i>

	<p>Pyramidal Tract Neuroaxonal Integrity Predicts Functional Status in Chronic Stroke Patients with Mild Primary Infarction <i>Dubey, P, Lioutas VA, Manor, B, Bhadelia, R, Novak, P, Selim, M, Novak V</i></p>
	<p>The Rule and Its Exceptions for Computing the Center of Pressure Excursion Index (CPEI) <i>Song, J, Pasquale, MR, Hillstrom, HJ</i></p>
	<p>Different Running Shoe Heel Designs Influence Force Distribution at the Heel Upon Impact <i>Trudeau, MB, Vienneau, J, Nigg, SR, Oda, T, Kaneko, Y, Nigg, BM</i></p>
16:25 - 17:00	<p>MPP, Most Promising Proposal Award Presentations Chair: <i>Kersting U</i></p>
17:00	<p>Closing Remarks <i>Vera Novak, Howard J. Hillstrom, Peter Seitz</i></p>
18:30 - 19:30 (please be seated at 18:20) 19:30 - 23:30	<p>Evening Event Concert by Henriette Gärtner <i>The Edward M. Pickman Concert Hall at the Longy School of Music</i> Award Presentations & Banquet Dinner with Dancing <i>Sheraton Commander Hotel, George Washington Ballroom</i></p>

Sunday, July 6th 2014

	<p>novel Workshops in Mount Vernon Room, Sheraton Commander Hotel</p>
6:30 - 8:30	<p>Breakfast in Nubar Restaurant (for full conference attendees), Sheraton Commander Hotel</p>
8:30 - 9:15	<p>Workshop I: How to measure load distribution correctly</p> <ul style="list-style-type: none"> - sensor physics - biomechanical concepts
9:15 - 9:30	<p>Break</p>
9:30 - 10:15	<p>Workshop II: Practical applications for load distribution measurements in complex environments</p> <ul style="list-style-type: none"> - measurements inside joints, "harsh" environments such as Ergonomics, etc. - long term monitoring of total forces in daily life
10:15 - 11:00	<p>Break with snacks & coffee</p>
11:00 - 11:45	<p>Workshop III: Data evaluation in clinical routine and research</p> <ul style="list-style-type: none"> - data acquisition with emed and data evaluation with novel projects, expert rules & reports - Manugraphy for functional hand diagnostics in the clinic
11:45 - 12:00	<p>Break</p>
12:00 - 12:45	<p>Workshop IV: novel support tools and applications with various hardware systems</p> <ul style="list-style-type: none"> - educational videos and web based assistance - calibration of novel systems and synchronization with peripheral systems
13:00 conclusion	<p>Wrap up/catch up</p>