

11:00 – 12:00	<b>SESSION 5</b> Analysis Methods Chair: <i>Nurse M.</i>
10:59 – 11:24	<b>art in science award finalist</b> <b>Calculation of pressure time integral, a different approach</b> <i>Melai T., Uzerman H., de Lange T.L.H., Willems P.B., Meijer K., Schaper N. C., Savelberg H.HCM.</i>
11:24 – 11:36	<b>Footprint masks: reproducibility of the Oxford anatomically-based selection by means of novel geometrical masks</b> <i>Giacomozzi C., Stebbins J., Kalpen A.</i>
11:36 – 11:48	<b>A technique to assess plantar soft tissue stiffness during the stance phase of gait</b> <i>Roposh C., Tucker C., Orlin M., Seliktar R.</i>
11:48 – 12:00	<b>Reliability of dynamic foot geometry assessment using a pedobarographic platform and a two-step approach</b> <i>Akins J.S., Keenan K.A., Dugan B.P., Francis M., Abt J.P., Sell T.C., Lephart S.M.</i>
12:00 – 13:00	<b>Lunch, Hotel Providence Lobby</b>
13:00 – 14:00	<b>SESSION 6</b> Data Collection Methods and Gait Chair: <i>Rosenbaum D.</i>
13:00 – 13:12	<b>Comparison of a six degree-of-freedom force sensor and pressure insole measurements in Selected skiing Manoeuvres</b> <i>Kersting U.G., Kurpiers N., Hild E., Kiefmann A., Senner V.</i>
13:12 – 13:24	<b>Data collection from two different pressure platforms using standardised methodology produces comparable results</b> <i>Stebbins J., Giacomozzi C.</i>
13:24 – 13:36	<b>Do motion control running shoes decrease sagittal plane movement of the medial longitudinal arch?</b> <i>McPoil T.G., Cornwall M.W., McNulty M.R.</i>
13:36 – 13:48	<b>Lateral plantar loading during cutting correlates to decreased footwear rating</b> <i>Ford K.R., Manson N.A., Myer G.D., Gwin R. C., Heidt R. S. Jr, Hewett T. E.</i>
13:48 – 14:00	<b>Crossover second toe deformity: A robotic cadaveric study of increased second metatarsal length and plantar pressure</b> <i>Whittaker E. C., Weber J. R., Aubin P.M., Sangeorzan B.J., Ledoux W. R.</i>
14:00 – 14:30	<b>Break</b>
14:30 – 16:30	<b>SESSION 7</b> Dynamic Load Distribution Chair: <i>Abbound R.</i>
14:30 – 14:55	<b>art in science award finalist</b> <b>Hypothener pressure mapping provides insight for reducing ulnar nerve compression in cyclists</b> <i>Slane J., Timmerman M., Ploeg H., Thelen D.</i>
14:55 – 15:07	<b>Using centre of pressure (COP) data to identify golf putting techniques</b> <i>McLaughlin P., Best R.</i>
15:07 – 15:19	<b>Effect of mattress for prevention of decubitus, bed position and subjects' bmi on interface pressure</b> <i>Bae T.S., Mun M.S.</i>
15:19 – 15:31	<b>A study of the effects of gel liner thickness on in-socket residual limb pressures in trans-tibial prosthesis users</b> <i>Stine R., Hansen A., Tucker K., Boutwell E., Edwards M., Gard S.</i>
15:31 – 15:43	<b>Force and impulse of keystroke during piano playing. Differences among professional players in classical passages</b> <i>Gaertner H., Pozzo R., Riehle H.</i>
15:43 – 16:28	<b>Keynote lecture 2</b> <b>The evolution of human running</b> <i>Lieberman D. E., Harvard University</i>
16:30 – 17:00	<b>Podium discussion II</b> The Perfect Running Shoe is the Bare Foot? <i>Pisciotta J., Lieberman D., Davis I., D'Andrea S. E., Wunderlich R., Nurse M.</i> Moderator: <i>Morlock M.</i>
17:00 – 17:15	<b>Closing remarks</b> <i>Peter Seitz, Susan D'Andrea</i>
19:00	<b>Evening event, Aspire Restaurant (Hotel Providence)</b> <b>Banquet Dinner</b> <b>Music by Joe Potenza</b> <b>Award Presentations</b>

## Meeting Overview

### Saturday, August 14th 2010

**Site:** Center for Restorative and Regenerative Medicine  
novel Workshops **12:00 – 17:00**  
Tour of the Neurorehabilitation Lab **15:00 – 15:30**

**Site:** Hotel Providence – Lobby and Blackstone Terrace  
Registration in Lobby **17:30 – 19:30**  
Opening Reception in Blackstone Terrace **17:30 – 19:30**

**Site:** Memorial Boulevard Providence  
Providence WaterFire throughout downtown Providence **19:30**

### Sunday, August 15th 2010

**Site:** Hotel Providence  
Breakfast in Lobby **7:30**  
Scientific presentations & poster session **8:30**

**Site:** RISD Museum of Art  
Hors d'oeuvres, drinks and dinner **18:00**  
Music by Henriette Gaertner  
Tour Museum until **21:00**

### Monday, August 16th 2010

**Site:** Block Island  
Activity Day: sport activities, buses departure **6:30**  
Early dinner at The Atlantic Inn

### Tuesday, August 17th 2010

**Site:** Hotel Providence  
Breakfast in Lobby **8:00**  
Scientific presentations in Ballroom **9:00**

**Site:** Aspire Restaurant (Hotel Providence)  
Banquet Dinner, Music and Award Presentations **19:00**

## Venue

**Brown University, Hotel Providence**

### Workshops

The Center for Restorative and Regenerative Medicine  
830 Chalkstone Ave.  
Providence R.I. 02908  
[www.biomed.brown.edu/orthopaedics/CCRM/newsletter\\_jan09.html](http://www.biomed.brown.edu/orthopaedics/CCRM/newsletter_jan09.html)

### Welcome Reception Conference/Presentations Banquet Dinner

Hotel Providence  
139 Mathewson Street  
Providence RI 02903  
tel 401-861-8000  
[www.hotelprovidence.com](http://www.hotelprovidence.com)

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## Program



## ESM 2010

Providence, Rhode Island  
August 14-17, 2010

Brown University  
The Center for Restorative  
and Regenerative Medicine  
in cooperation with  
University of Rhode Island



# ESM 2010 Presentations

## Saturday, August 14th 2010

Welcome to ESM 2010

10:30 – 11:30	<b>Registration for the Workshop attendees in the Hotel Providence Lobby</b>
11:30	<b>Transportation to Workshops from Hotel Providence Lobby</b>
	<b>novel Workshops at Center for Restorative and Regenerative Medicine and tour of Neurorehabilitation Lab</b> Each session will be approximately 45 minutes, with 15 minutes for questions. There will be a 10-15 minute break between each session.
12:00 – 13:00	<b>Workshop I: novel hardware, data collection and analysis software overview</b>
13:10 – 14:10	<b>Workshop II: Project overview including setup of mock data collection and analysis</b>
14:20 – 16:00	<b>Workshop III: pliance sensor applications</b> <b>Tour of the Neurorehabilitation Lab 15:00 – 15:30</b>
16:00 – 17:00	<b>Workshop IV: 3D motion capture systems and pedography</b>
17:00	<b>Transportation from the Workshops to Hotel Providence</b>
17:30 – 19:30	<b>Registration in the Hotel Providence Lobby</b> <b>Opening Reception in Hotel Providence, Blackstone Terrace</b> <b>WaterFire Providence Memorial Boulevard</b>
19:30	

## Sunday, August 15th 2010

7:30 – 8:15	<b>Breakfast, Registration</b> , Hotel Providence Lobby
8:15 – 8:30	<b>Welcome</b> <i>Susan E. D'Andrea, Peter Seitz, Leslie Klenerman</i>
<b>8:30 – 10:00</b>	<b>SESSION 1</b> Foot Deformities  Chair: <i>McPoil T.</i>
8:30 – 8:55	<b>art in science award finalist</b> <b>First ray instability in hallux valgus deformity – a kinematic radiographic and pedobarographic analysis</b> <i>Dietze A., Bahlke U., Martin H., Mittlmeier T.</i>
8:55 – 9:20	<b>art in science award finalist</b> <b>Is hallux valgus associated with different peak plantar pressure and pressure-time integrals?</b> <i>Galica A., Dufour A.B., Hillstrom H.J., Lenhoff M. W., Frey J. C., Casey V.A., Hannan M. T.</i>
9:20 – 9:32	<b>Comparison of geometry hallux angles with radiographic hallux abductus angles for predicting hallux abductovalgus</b> <i>Furmato J. A., Song J.</i>
9:32 – 9:44	<b>Plantar loading in the cavus foot</b> <i>Kraszewski A. P., Chow B., Backus S.I., Deland J.T., Demp P.H., Song J., Heilman B., Rajan S., Woodley A., Hillstrom H.J.</i>
9:44 – 9:56	<b>Foot structure is related to foot function</b> <i>Mootanah R., Song J., Backus S., Deland J., Demp P., Heilman B., Lenhoff M., Frey J., Kraszewski A., Hillstrom H. J.</i>
9:56 – 10:25	<b>Break</b>
<b>10:25 – 12:00</b>	<b>SESSION 2</b> The Evolution of Gait  Chair: <i>Pisciotta J.</i>
10:25 – 11:10	<b>Keynote lecture 1</b> <b>Human Walking: Comparative and evolutionary approaches</b> <i>Wunderlich R., James Madison University</i>
11:10 – 11:35	<b>art in science award finalist</b> <b>Effect of shoe flexibility on plantar loading in children who are learning to walk</b> <i>Hillstrom H., Buckland J.M., McCarthy C., Scher D., Root L., Backus S.I., Kraszewski A.P., Frey J., Song J., Whitney K., Choate C., Scherer P.</i>
11:35 – 11:47	<b>Dynamic plantar pressure changes during loaded gait</b> <i>Teyhen D.S., Goffar S.L., Reber R.J., Christiansen B.C., Miller R.B., Naylor J.A., Rodriguez B.M., Walker M.J.</i>

11:47 – 11:59	<b>'Kidfoot Muenster' – Nine-year results of plantar pressure measurements in childrens' foot development</b> <i>Rosenbaum D., Bosch K., Gerss J.</i>
12:00 – 13:00	<b>Lunch, Hotel Providence Lobby</b>
<b>13:00 – 15:00</b>	<b>SESSION 3</b> Pressure Distribution Measurements as a Diagnostic Tool  Chair: <i>Ford K.</i>
13:00 – 13:12	<b>Dynamic foot loading patterns in children with juvenile idiopathic arthritis (JIA)</b> <i>Rosenbaum D., Michels H., Hartmann M.</i>
13:12 – 13:24	<b>Plantar fasciitis and pain symptom are related to the longitudinal arch shape and not to the plantar pressure during running</b> <i>Sacco I. C.N., Ribeiro A.P., Trombini-Souza F., Tessutti V., João S.M.A.</i>
13:24 – 13:36	<b>Foot pressure distribution following operative reduction of high grade intra-articular fractures of the calcaneus</b> <i>Ayalon M., Ben-Sira D., Nyska M., Hetsroni I.</i>
13:36 – 13:48	<b>Plantar pressure distribution following operative treatment for proximal femur fractures</b> <i>Brunk M., Emmerich J., Mittlmeier T.</i>
13:48 – 14:00	<b>The Māori foot: static morphology and dynamic function in healthy and diabetic populations</b> <i>Gurney J., Kuch C., Rosenbaum D., Kersting U.</i>
14:00 – 14:12	<b>Asymmetry in plantar loading during gait in Native Americans with and without diabetes and with and without neuropathy</b> <i>Kernozek T.W., Heizler C., Greany J.F.</i>
14:12 – 14:24	<b>Plantar pressure distribution patterns in multiple sclerosis patients with different neurological status</b> <i>Tsvetkova T.L., Stolyarov I. D., Pichugina O.L., Petrov A.M., Ilves A.G., Prakhova L.N., Nikiforova I.G., Lebedev V.V., Yakushev F.V., Tartakovskiy V.N.</i>
14:24 – 14:36	<b>Can gait initiation process be evaluated with pressure platforms?</b> <i>Rosenbaum D., Lobo da Costa P.H., Bosch K.</i>
14:36 – 14:48	<b>The effects of footwear, learning, and fatigue on center of pressure excursion during single limb balance</b> <i>Zaferiou A.M., Zifchock R.A., Brown A.M., Frey J., Hillstrom H.J.</i>
14:48 – 15:00	<b>Relationship between foot range of movement and plantar pressure distribution in diabetic neuropathic patients</b> <i>Sacco I., Sartor C.D., Picon A.P., Roveri M.I., Dinato R.C.</i>
<b>15:00 – 16:00</b>	<b>Posters &amp; Break</b> RISD Room/Johnson & Wales Room, Hotel Providence
	<b>The effect of special shoe insert designed for diabetic patients on plantar foot pressure distribution</b> <i>Ayalon M., Hetsroni I., Nyska M.</i>
	<b>Effect of gait speed changes on foot loading characteristics in children</b> <i>Bosch K., Westhues M., Rosenbaum D.</i>
	<b>Effects of intense running to exhaustion on the in-shoe plantar pressure patterns in young middle-distance athletes</b> <i>Fourchet F., Kelly L., Horobeanu C., Millet G.P.</i>
	<b>Clinical applications of a forefoot conic curve model</b> <i>Hillstrom H., Kraszewski A., Demp P., Chow B., Lenhoff M., Song J., Heilman B., Rajan S., Woodley A.</i>
	<b>Variation of tactile cues reduce nociceptive capacity of plantar irritating stimulus impact on walking gait</b> <i>Janin M., Dupui P.</i>
	<b>Effect of interlocking pattern in electrical bed on the prevention of bedsores</b> <i>Lim D., Choi H., Kim J.H., Hong J.S., Chun K.J.</i>
	<b>Biomechanical factor to be considered during power-lift design to reduce the risk of musculoskeletal disorders</b> <i>Lim D., Choi H., Chun K.J.</i>
	<b>Variations in plantar loading patterns in individuals with soft tissue versus boney rearfoot trauma: a preliminary study</b> <i>McPoil T.G., Albin S., Cornwall M.W.</i>
	<b>Effects of sub-hallucal wedge and medial arch support on dynamic plantar pressure</b> <i>Song J., Nimick C., Banks J., Marroquin R., Hood C., Tango D., Kane R., Furmato J., Whitney K.</i>

	<b>The effects of slippers and lower limb positioning on plantar pressures in selected ballet balances</b> <i>Valenti É.E., Lobo da Costa P.H., Bosch K., Rosenbaum D.</i>
	<b>Dynamic effects of different alternating cycle time conditions on soft tissue perfusion recovery</b> <i>Won B.H., Choi Y.J., Chun K.J., Song C.</i>
	<b>A novel approach using a FE-foot model for clinical applications</b> <i>Wyss C.</i>
	<b>Reliability of in-sole plantar pressure using simple and detailed masks of the forefoot, midfoot, and hindfoot</b> <i>Akins J.S., Keenan K.A., Dugan B. P., Francis M. F., Abt J.P., Sell T.C., Lephart S.M.</i>
	<b>The influence of fatigue, ligament laxity and hormonal fluctuation on plantar pressure in female athletes</b> <i>Silke K.T., Wunderlich R. E., Cebulski S. F.</i>
	<b>Comparison of plantar pressure measurements obtained during barefoot and shod conditions</b> <i>Akins J.S., Keenan K.A., Dugan B.P., Francis M., Abt J.P., Sell T.C., Lephart S.M.</i>
<b>16:00 – 17:00</b>	<b>Podium discussion I</b> Pedography as a Diagnostic Method for Determining Foot Function: Technical, Methodological and Other Requirements <i>Hillstrom H., Kalpen A., Giacomozzi C., McPoil T., Rosenbaum D.</i>  Moderator: <i>Bus S.</i>
18:00 – 21:00	<b>Evening event</b> <b>RISD Museum of Art</b> Hors d'oeuvres, drinks and dinner Music by Henriette Gaertner Museum Tour

## Monday, August 16th 2010

	<b>Block Island Activity Day</b>
<b>6:00</b>	Breakfast pickup
<b>6:30</b> (be in the lobby by 6:15)	Buses depart MUST BE in lobby by 6:15
<b>8:00 – 9:30</b>	Ferry Ride from Point Judith to Block Island Arrival on Block Island, distribution of bikes and lunches, activities begin
<b>16:00 – 19:00</b>	Clam Bake at The Atlantic Inn
<b>19:00</b>	Walk back to Old Harbor
<b>19:30</b>	Ferry Departure

## Tuesday, August 17th 2010

8:00 - 9:00	<b>Breakfast, Hotel Providence Lobby</b>
<b>9:00 – 10:25</b>	<b>SESSION 4</b> Gait and Orthoses  Chair: <i>Stine R.</i>
9:00 – 9:25	<b>art in science award finalist</b> <b>Cast-boot ankle-foot orthoses yield greater forefoot load reduction than total contact casts</b> <i>Gutekunst D.J., Bohnert K.L., Hastings M.K., Sinacore D.R.</i>
9:25 – 9:50	<b>art in science award finalist</b> <b>Preservation of the first rocker is related to increases in gait speed in individuals with hemiplegia and AFO</b> <i>Nolan K.J., Yarossi M.</i>
9:50 – 10:02	<b>Effect of CAD designed pedorthosis with build-in wedge for children with clubfoot</b> <i>Liu X.C., Rizza R., Thometz J., Lyon R., Tassone C., Tarima S.</i>
10:02 – 10:14	<b>Intraarticular and muscle force reactions of the leg using different insoles</b> <i>Wyss C., Roethlisberger M., Gerber H.</i>
10:14 – 10:26	<b>Ratios of lateral to medial patellofemoral forces and pressures in a simulated operative environment of total knee arthroplasty</b> <i>King J.J., Cerynik D.L., Peretz J.I., Black A., Johanson N.A.</i>
10:26 – 10:59	<b>Break</b>