20 July 2023 updated

FOOTWEAR BIOMECHANICS GROUP

FOOTWEAR BIOMECHANICS SYMPOSIUM 2023

26-28, July 2023, Osaka, Japan.

MORINOMIYA UNIVERSITY OF MEDICAL SCIENCES

The 16th Biennial Footwear Biomechanics Symposium

Welcome Message

from the Conference Organizer

Natsuki Sato,
The Chair of the FBS2023 Organizing Committee

Hello! It's honorable for us to host the Footwear Biomechanics Symposium 2023. Local committee team members are trying our best to create the most exciting conference ever.

The conference theme is "FOOTWEAR FOR EVERYBODY", the expanding roles of footwear science. Performance of footwear is not only for athletes, but also for children, adults, elderly people, and disabled people. And, performance of footwear is used in not only in competition sports environment, but also in various daily activity environment, various working environment, for example, transportation environment, healthcare delivery environment, and so on. We believe the importance of footwear science and footwear biomechanics is expanding.

The conference will be held here in Osaka. Osaka is well known as the business city, and you can feel the power and energy of Osaka people. Osaka is also well known as the foodie city capital. There are thousands of local foods you must try. We believe you will enjoy the exciting days and nights. We are looking forward to seeing you soon!

Conference Sponsors

Gold Sponsor

Silver Sponsor

Bronze Sponsor

Minor Sponsor

Event Sponsor

Welcome Message

from the FBS executive group

On behalf of the Footwear Biomechanics Group Executive, it is our pleasure to welcome you to the 16th Biennial Footwear Biomechanics Symposium here in Osaka, Japan. We would like to thank the hosts of this meeting, Mizuno, and all the meeting sponsors. The local organizing committee has made a tremendous effort to make this year's Symposium program interesting and inclusive, embracing the theme: Footwear for everybody. As the chair of the Symposium, Natsuki Sato, has described in his welcome message, footwear is not only the realm of athletes and runners but is also a tool used by people with a range of abilities to assist with mobility, facilitate participation in society, for protection, as part of a uniform and to make an individual's feet look great! The science that will be presented over the next 3 days will explore many of these purposes and demonstrate the dynamic and essential role of footwear in our societies. Once again, welcome to the 2023 Footwear Biomechanics Symposium. We hope you find the next three days informative and enlightening.

Kathryn Mills, Sharon Dixon and Nachiappan Chockalingam
On behalf of the FBS executive group

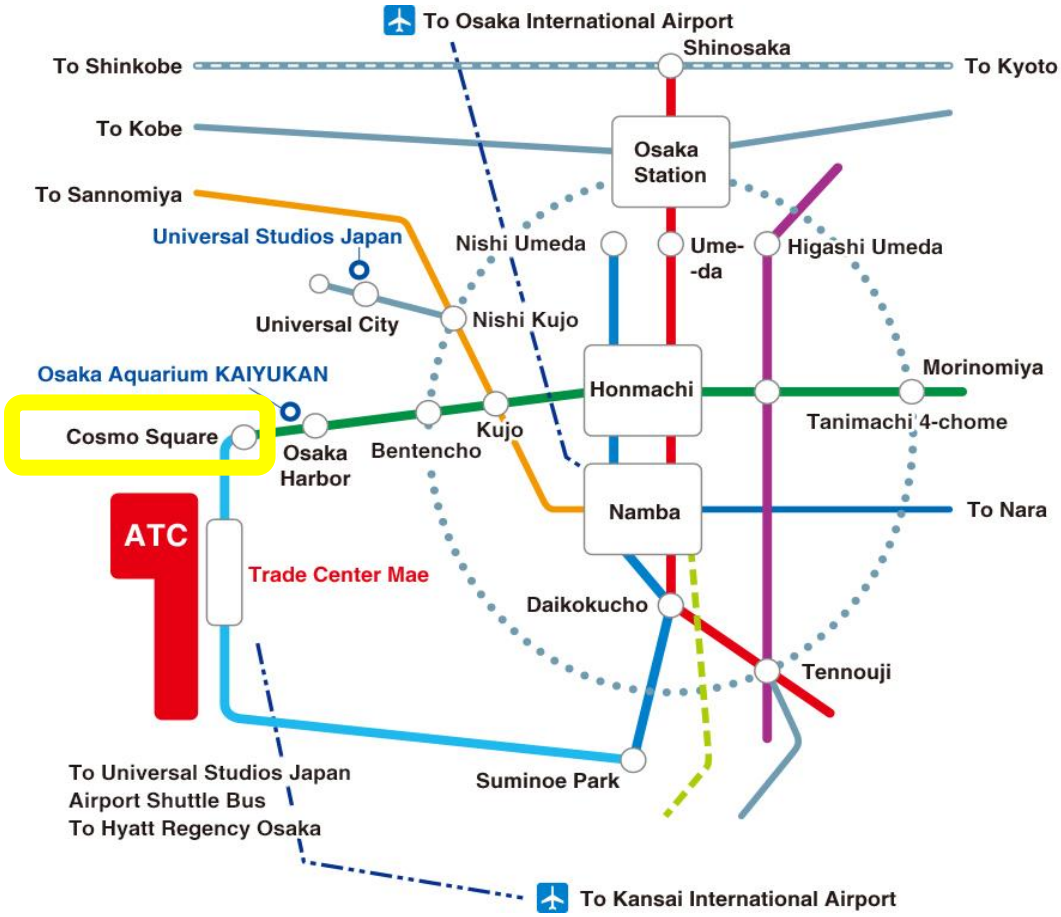
Kathryn Mills

Sharon Dixon

Nachiappan Chockalingam

Access Information

Access to the Cosmosquare Station on the Chu-o Subway Line



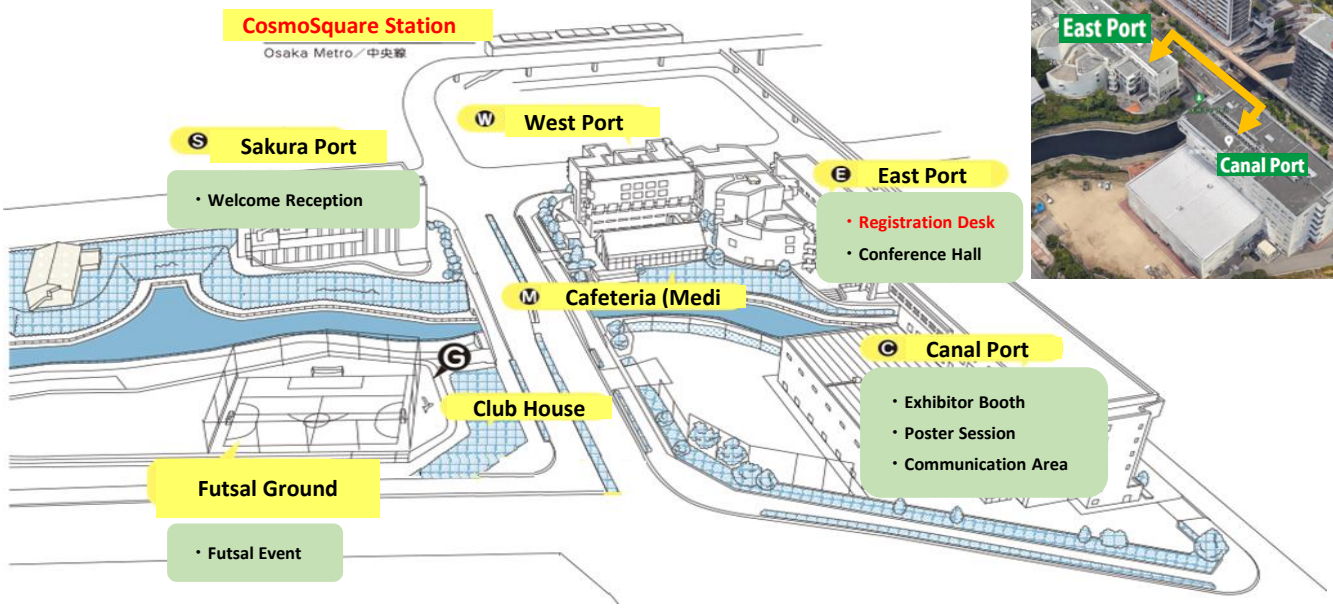
From the major spot of Osaka

Dotonbori	Umeda	Osaka Castle	Osaka Aquarium KAIYUKAN	Universal Studios Japan
Namba Station Osaka Metro Midosuji Line 3min.	Umeda Station Osaka Metro Midosuji Line 4min.	Tanimachi 4-chome Station Osaka Metro Chuo Line 19min.	Osaka Harbor Station Osaka Metro Chuo Line 4min.	Universal City Station JR Yumesaki Line 5min.
Honmachi Station Osaka Metro Chuo Line 15min.	Honmachi Station Osaka Metro Chuo Line 15min.	Cosmo Square Station New Tram 2min.	Cosmo Square Station New Tram 2min.	Nishi Kujo Station Osaka Loop Line 2min.
Cosmo Square Station New Tram 2min.	Cosmo Square Station New Tram 2min.			Bentencho Station Osaka Metro Chuo Line 9min.
				Cosmo Square Station New Tram 2min.

Straight to ATC Trade Center Mae Station

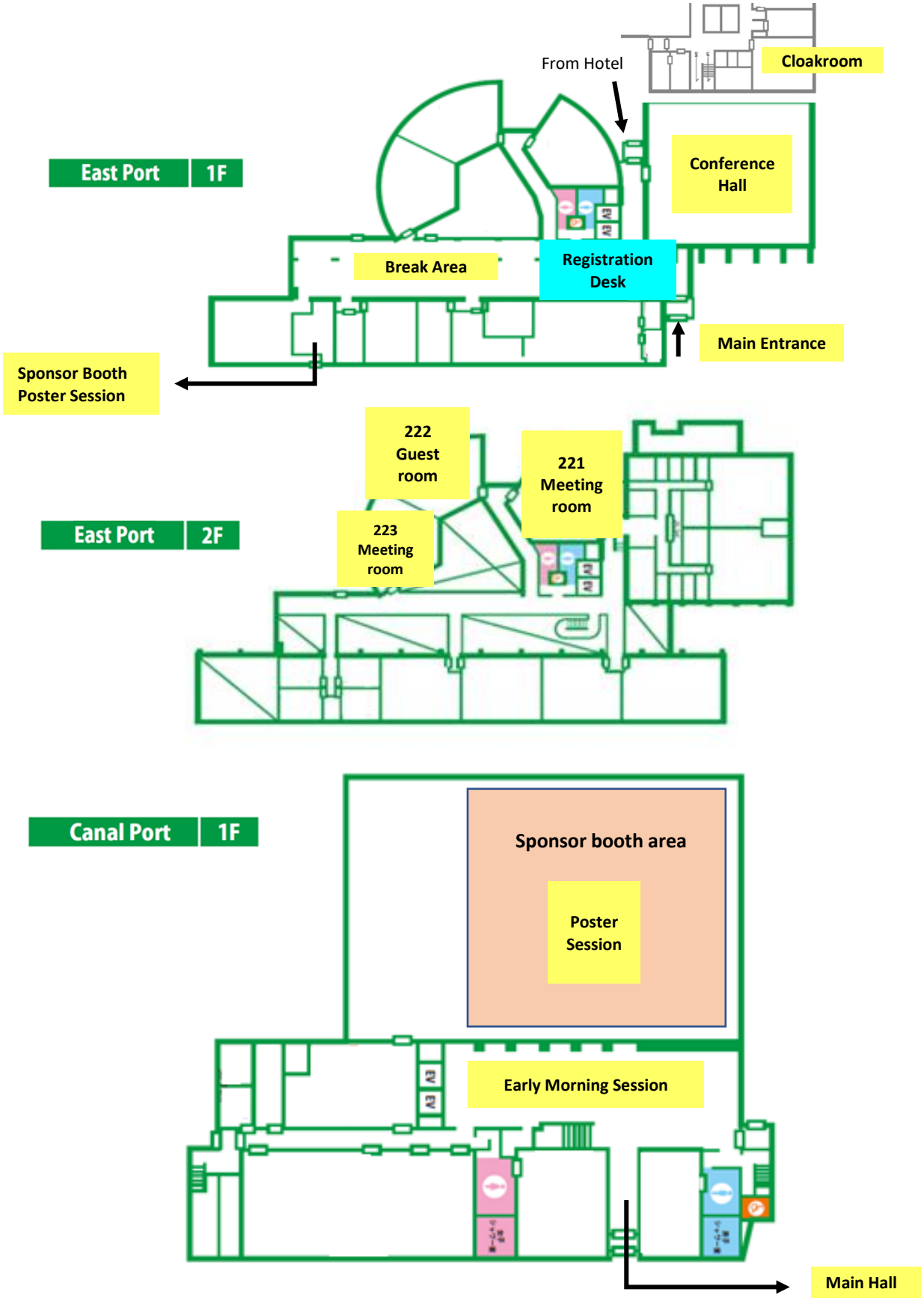
Venue Map

Morinomiya University of Medical Sciences Map



Surrounding Map

Venue Maps


From Hotel
Cloakroom
East Port 1F
Conference Hall
Break Area
Registration Desk
Main Entrance
Sponsor Booth Poster Session
222 Guest room
221 Meeting room
East Port 2F
223 Meeting room
Canal Port 1F
Sponsor booth area
Poster Session
Early Morning Session
Main Hall

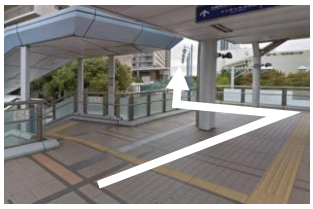
Access Maps

From the CosmoSquare Station

Cosmo square Station
Ticket Gate

Turn left and upstairs

Turn right and go straight.

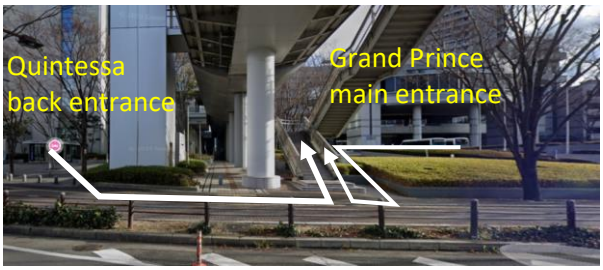


Cross the pedestrian bridge

Go down the stairs on the left

Cross the pedestrian crossing

From the hotel (Grand prince, Quintessa)



Go up the stairs in front of the hotel

Cross the pedestrian bridge

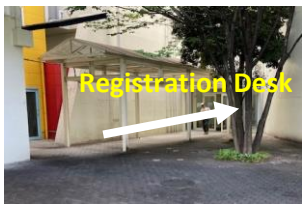
Go down the stairs

Go straight 400m
along the street

Cross the pedestrian crossing twice

Turn right by the clinic

Go straight through the narrow passage



Pass through the door

General Information

Venue
1-26-16 Nanko-kita, Suminoe-ku,
Osaka-shi, Osaka 559-8611.

Registration Desk
The Registration Desk and the Conference Hall are located at the East Port.

Registration
The Registration Desk will be located in the main lobby during the time below.

Wednesday, 26 July: **08:00 a.m. – 17:00 p.m. [JST]**
Thursday, 27 July: **07:40 a.m. – 12:00 p.m. [JST]**
Friday, 28 July: **08:00 a.m. – 17:00 p.m. [JST]**

Sponsor Booth
The Sponsor Booths are located in the Gymnastic at the Canal Port (next building to East Port).

Posters
Posters will be on display from **8:00am on 26th to 12:00am on 28th** in the Gymnastic at the Canal Port. Full poster details can be

Internet
Wireless internet (Wi-Fi) will be available free of charge for delegates of FBS2023. Please connect to " **morinomiya-free** " access point. You can connect without the password.

Electricity
The electrical supply in Japan is 100 vlts, 60Hz.

Dress Code
The conference dress code is casual.

Currency
The Japanese Yen is the currency in Japan. All

Tipping
In general, the service charge is included in the payment in Japan. So there is no need to tip.

Smoking
Smoking is prohibited on the university campus.

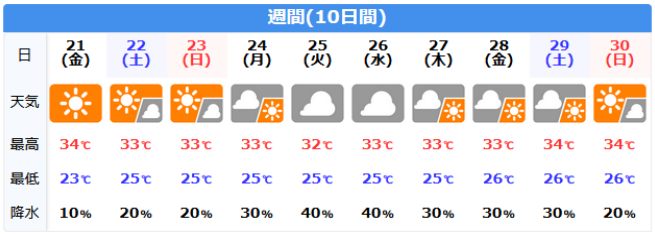
Name Badges
For security purposes, name badges must be worn at all times when attending the congress and social events. If you misplace your name badge, please visit the Registration Desk to arrange a replacement.

Abstracts
Abstracts for FBS2023 can be found in the special issue of Footwear Science included in your welcome bag. If you are a member of the Footwear Biomechanics Group, abstracts are also available online at:
https://fbs2023.footwearbiomechanics.org/2657-2/

In response to the COVID-19
Not nessesary to wear a mask on campus. However, Infected persons and persons with fever cannot participate in the conference.

No Photo and Videos
Please refrain from taking photos or videos inside the Conference Hall.

Weather
Summer in Japan is extremely hot and humid, Please be careful of heatstroke.



Emergency Details
In case of emergency, please contact the secretariat (+81-70-7822-8887).

Hotel Contact
Grand Prince Hotel Osaka Bay
1-13-11 Nanko-Kita, Suminoe-Ku, Osaka, 559-0034, Japan
Tel: +81-6-6612-1234
Quintessa Hotel Osaka Bay
1-13-65 Nankokita, Suminoe-ku, Osaka
Tel: +81-6-6613-7007

Keynote Speakers

"The rich research tapestry that foreshadowed Advanced Footwear Technology and what it suggests for the future."

Wednesday, July 26th, 1:00pm

Dr, E. C. "Ned" Frederick[a]
Exeter Research, Inc.,
Brentwood, NH USA

For more than 45 years, Dr. Frederick has been actively investigating the links between performance, biomechanical adaptations, and the mechanical characteristics of sport shoes. His meandering career has led him through stints as a key executive at two major footwear brands, four academic appointments, and long-term consulting partnerships with several sport shoe companies. Over the years he has been a collaborator on more than 100 scientific reports, seven books, and several book chapters. He has been granted 18 US and foreign patents and has designed and developed widely used instruments for measuring biomechanically relevant mechanical characteristics of footwear and materials. He was chair of the Footwear Biomechanics Group in 2006-7, is the current editor-in-chief of Footwear Science and was the inaugural recipient of the Career Excellence Award in Footwear Science in 2019.

Dr. Darren J. Stefanyshyn[b]
Human Performance Laboratory, University of Calgary, AB, Canada

Darren Stefanyshyn obtained his PhD in Mechanical Engineering with a Specialization in Biomechanics from the University of Calgary. He is a Professor in the Human Performance Laboratory and holds an Adjunct appointment in Mechanical and Manufacturing Engineering in the Schulich School of Engineering. His research interests include footwear biomechanics, sport equipment, performance and injury. For over twenty-five years he has collaborated on a wide variety of basic and applied footwear projects with numerous industry partners. He is a past Chairperson of the Footwear Biomechanics Group, and past Executive Board Member of the Canadian and International Societies of Biomechanics. He previously served as an Associate Editor of Footwear Science and has authored approximately 150 journal research papers and over 300 technical industry reports.

Dr. Wouter Hoogkamer[c]
Department of Kinesiology,
University of Massachusetts
Amherst, MA USA

Wouter Hoogkamer, Ph.D. is an assistant professor in the Department of Kinesiology at the University of Massachusetts, Amherst, where he runs the Integrative Locomotion Laboratory (UMILL). His lab uses a comprehensive approach to study human locomotion, integrating neurophysiology, biomechanics and energetics. Dr. Hoogkamer's work covers the full health spectrum, from gait neuromechanics in older adults with increased fall risk to running energetics in sub-elite marathon runners. His lab is currently studying robotic footwear for gait rehabilitation, road running shoes, track spikes and trail running shoes. He runs daily and is probably the only person to have run both a sub 49 seconds 400m and a sub 6 hours 50 mile.

Keynote Speakers

"Low Running offers a way to make recreational distance running a viable physical activity option for more people."

Thursday, July 27th, 10:00am

Dr. Dirk De Clercq
Biomechanics of Human Movement
Ghent University

Em. Prof. dr. Dirk De Clercq is doing collaborative research at the Laboratory for Biomechanics and Motor Control of Human Movement, part of the Sport Science Laboratory Jacques Rogge in the Department for Movement and Sport Sciences, Ghent University (Belgium). Prof dr. Veerle Segers is head of the Biomechanics lab. Our research targets individuals of all ages and of all physical abilities and involves both laboratory and field testing. A first research line is on locomotion biomechanics and focuses on better understanding and the modulation of loading in distance running. In a second line, locomotion related injury risk factors are determined and translated to broader intervention studies. Subsequently, primary preventions of sports injuries, e.g. by augmentation of intrinsic loading capacities, are designed (IMP protocol), tested (RCT studies) and evaluated (RE-AIM). In a third line of research we perform sports biomechanical analysis in situ. Last years, Dirk combines these insights and methods for "tuning" distance running as a life-long healthy physical activity.
Funding comes from EU, National scientific funding agencies, Ghent University and Charities. Services research is conducted for several international athletic footwear companies. Dirk is founding member of the ISB Working Group on Functional Footwear, former board member of the Footwear Biomechanics Group and member of the Editorial board of Footwear Science. Co-author of the 2005 and 2009 NIKE Footwear Research Award from the FBG.
Publications and PhD's: https://biblio.ugent.be/person/801000542045
University-business collaborations and tech transfer activities are facilitated in the framework of the Ghent University consortium www.victoris.be
dirk.declercq@dirk-declercqugent-be

"The importance of prescription footwear for children with neurological conditions"

Friday, July 28th, 10:00am

Dr Nicky Eddison
Associate Professor / Consultant Orthotist
Staffordshire University and the Royal Wolverhampton NHS Trust.

Dr Nicky Eddison received her PhD in biomechanical optimisation of ankle-foot orthoses and footwear combinations in 2018 from Staffordshire University and currently holds the position of Association Professor at the Centre for Biomechanics and Rehabilitation Technologies at Staffordshire University. In 2021, Dr Eddison became the first Consultant Orthotist in the history of the UK National Health Service and was recently appointed as the Vice Chair/Chair-elect of the British Association of Prosthetists and Orthotists.
Dr Eddison has a portfolio of peer-reviewed publications, achieving impact within the orthotics profession both nationally and internationally and across the wider healthcare domain of Allied Health Professions. Her research interests include biomechanical optimisation, prescription footwear, gait analysis, digitalisation in healthcare, and health inequalities.

Invited Speakers

"Human augmentation researches toward Digital Servitization of Healthcare and Sports business"

Thursday, July 27th, 11:40am

Dr. Masaaki Mochimaru
Human Augmentation Research Center
The National Institute of Advanced Industrial Science and Technology

Masaaki Mochimaru studied Mechanical Engineering and Ergonomics at Keio University in Japan, where he received his Master in Mechanical Engineering and PhD in Engineering. In 1993, he joined The National Institute of Advanced Industrial Science and Technology (AIST) as a researcher. In 2001, he was assigned as the deputy director of Digital Human Laboratory of AIST. In 2010, he launched and directed Digital Human Research Center of AIST. Through 2015-2018, he directed Human Informatics Research Institute of AIST. After November 2018, he directs a new research center, Human Augmentation Research Center of AIST. His research interests are related to measurement and modeling of human functions and their applications. In recent years, his research interests are expanded to service engineering and servitization. Through 1997 to 2016, he was the chair of ISO TC159 (ergonomics)/SC3 (anthropometry and biomechanics). He was appointed as the chair of ISO TC 324 (sharing economy) in 2019, and also appointed as the chair of ISO PC 329 (consumer incident investigation guideline).

Presentation Guidelines

Oral Session Guidelines

Presentation time : 10 minutes total (include introduction, setup, etc.)

- 7 mins for presentation, 2 mins for discussion, 1 min for changeover.
- The bell ring at 6 mins (1min before end) and 7 mins.

Equipments :

- projector (HDMI-A type cable)
- screen (recommended slides with 16:9 ratio)
- platform
- microphone
- laser pointer (with presentation clicker function)
- pc for the presentation (If you present other than Microsoft PPT, you can use your own PC)

Others :

- Presenters should gather on the left front of the conference hall 10 mins before your session.

Upload Guidelines

- The presenters must upload the presentation materials to the designated folder in advance.
  Upload your materials from following link by 25th July, 2023.
  Link ➡ https://mizuno.app.box.com/f/72bdce94365d455790d5dd06196f9b01
- Set the name of the file as following rule : Present Date_Presentation ID_Your name.pptx
  (ex) 230726_O1-1_Daisuke Kogawa.pptx)

Poster Session Guidelines

Display guidelines :

- The poster session will be taken place at **Gymnastic hall** at the Canal Port.
- The poster panels set up are for **A0 size** poster (Height 1189 mm x Width 841 mm).
- **Pins** will be provided for you to affix your poster to the board.
- You can post your poster from the first day of the symposium (26th July) until 13:00 on the last day of the symposium (28th July).
- Please refer to the venue map on the page 19 for the layout.

Others :

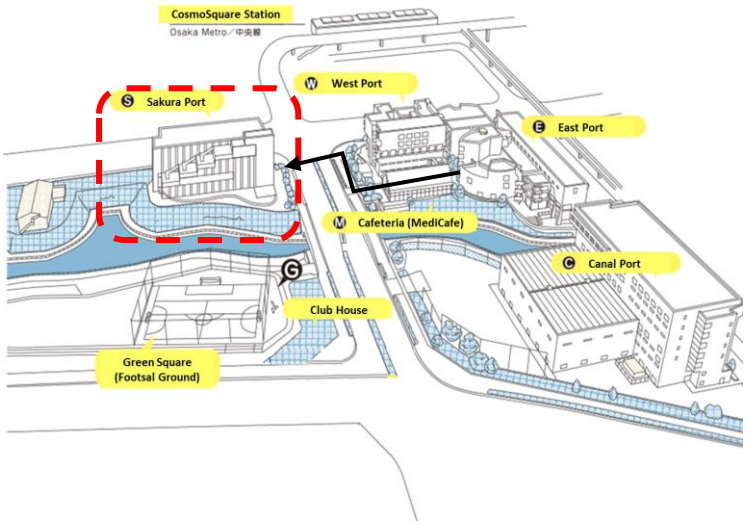
- Removal and collection of poster is the responsibility of the presenter. Posters not removed by the 13:00 on the last day will be removed and disposed of by the conference staff.

Welcome Reception & Closing Banquet

Participation fees for these events are included in the registration fee.
Please wear the Name Card and Conference Strap to be recognized as a conference participant.

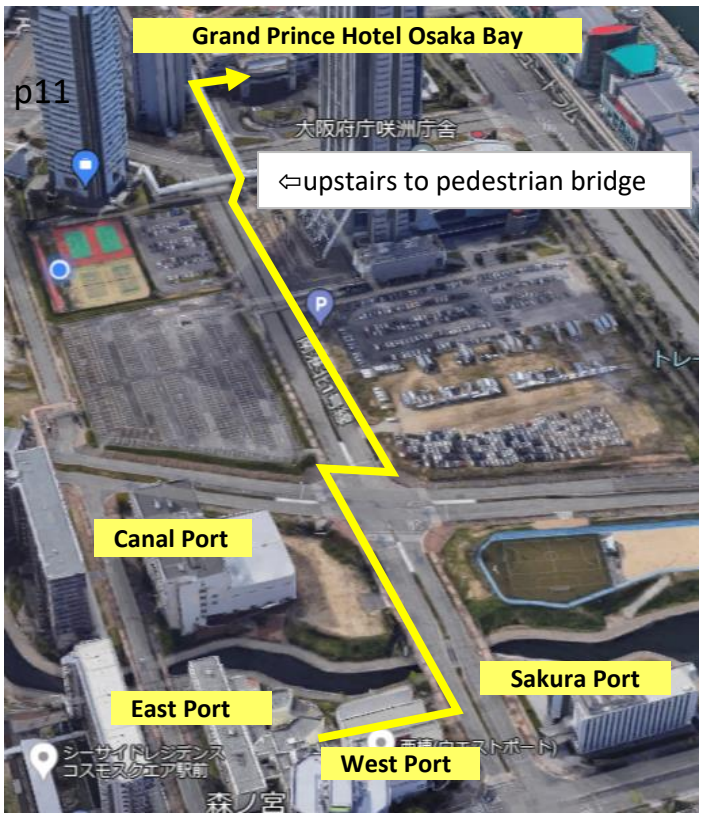
Welcome Reception

Date: 18:00 - 19:30 on Wednesday, July 26th
Venue: SAKURA Café at Sakura Port
Style: Standing Buffet
Attire: Casual
5mins walk from the Conference hall



Closing Banquet

Date: 19:00 - 21:00 on Friday July 28th
Venue: Grand Prince Hotel Osaka Bay
(Former name : Hyatt Regency Osaka)
3rd Floor, Prince Ball room A/B.
Style: Seated Buffet
Attire: Smart Casual
10mins walk from the Conference hall



Social Events

Additional application required to participate Social Events.

Excursion 1

Cup Noodles Museum and KUCHU TEIEN Observatory Tour

・6,000 JPY / per person

・Departure time　14：00

・**Meeting Time　13：45**

・Meeting Location : In front of the Grand Prince Hotel Osaka Bay (Hyatt Hotel)

*The exact meeting place will be announced in the final information.

14:45～16:30　　17:00～18:00(Disbanding)

=== Cup Noodles Museum === KUCHU TEIEN Observatory　　※===by bus

Excursion 2

Takoyaki Cooking and Aquarium (KAIYU-KAN) Tour

・7,500 JPY / per person Minimum number of participants: 25

・Departure time　14：30

・**Meeting Time　14：15**

・Meeting Location : In front of the Grand Prince Hotel Osaka Bay (Hyatt Hotel)

*The exact meeting place will be announced in the final information.

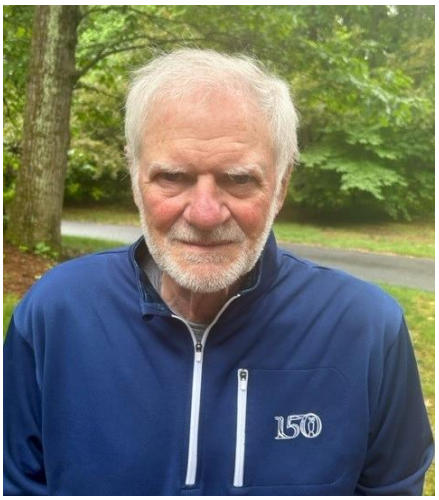
14:45～15:45　　16:00～18:00　　18:30 (Disbanding)

=== Takoyaki Cooking at MUGEN ---- KAIYU-KAN / Free time === Dotonbori Area

※=== : by bus ---- on foot

*The order of visiting Takoyaki Experience and Kaiyukan is subject to change. Please understand this in advance.

FBG Career Excellence Award



Dr. Joseph Hamill
University of Massachusetts Amherst

It is with great honor that the Footwear Biomechanics Group present the Career Excellence Award in Footwear Science to Dr. Joseph Hamill. Dr. Joseph Hamill completed his undergraduate degrees at York University (BA) and Concordia University (BS) and graduate work in Biomechanics at the University of Oregon (M.S., Ph.D.). He is a Professor Emeritus in the Department of Kinesiology at the University of Massachusetts Amherst and holds visiting positions at the Universities of Edinburgh (Scotland), Limerick (Ireland), Staffordshire (England), and Ostrava (Czech Republic). Over his career, he has authored over 500 research papers, proceedings and abstracts, 21 book chapters and 11 books in addition to presenting over 300 papers at both national and international conferences. He has been an invited speaker at numerous universities in the United States and around the world. He is a Fellow of the Research Consortium, ISB, ASB, CSB, ISBS, ACSM and the National Academy of Kinesiology. He has been awarded the James G. Hay Award from ASB, the Ruth Glassow Award from the Biomechanics Academy and a Career Achievement Award from ACSM. During his academic career, he has mentored over 60 PhD and MS students and 10 honors' students. His research interests are focused on lower extremity biomechanics during normal and pathological locomotion. His current projects include studies on coordination variability in the determination of cumulative micro-trauma injuries and the interaction of biomechanical and anatomical factors in overuse injuries. Professionally, he has served as the Chair of the Footwear Biomechanics Group and as President of the International Society of Biomechanics and the International Society of Biomechanics in Sports, as well as playing a key role as Associate Editor of the journal Footwear Science during its formative stages for more than ten years. Over his career, his ideas have been foundational for many of the theoretical constructs in Footwear Science.
Previous recipients of this prestigious award include Dr. Ned Frederick (2019) and Dr. Benno Nigg (2021).

Program Overview

Start	End	Day1 26th July (Wed.)	Day2 27th July (Thu.)		Day3 28th July (Fri.)
7:40	7:50	-	07:45-08:45 Ealry Morining Session for Student	07:40-(12:00) On site registration	-
7:50	8:00				
8:00	8:10	08:00-(17:00) On site registration			08:00-(17:00) On site registration
8:10	8:20				
8:20	8:30				
8:30	8:40				
8:40	8:50				
8:50	9:00				
9:00	9:10	09:00- Opening	09:00-09:30 Load & Injury(3)		09:00-09:40 Clinical(4)
9:10	9:20	Short Break (10mins)			
9:20	9:30	09:20-10:20 Novel technics & Performance(6)			
9:30	9:40		Coffee Break (20mins)		Coffee Break (20mins)
9:40	9:50				
9:50	10:00		09:50-10:30 Keynote② ; Dr. Dirk De Clercq		10:00-10:40 Keynote③ ; Dr. Nicky Eddison
10:00	10:10				
10:10	10:20				
10:20	10:30	Coffee Break (20mins)	Coffee Break (20mins)		Coffee Break (20mins)
10:30	10:40				
10:40	10:50	10:40-11:40 Bending stiffness & Midsole property(6)	10:50-11:20 Traction & Fall prevention(3)		11:00-11:40 Fitting(4)
10:50	11:00				
11:00	11:10				
11:10	11:20				
11:20	11:30		Coffee Break (20mins)		
11:30	11:40				
11:40	11:50	11:40-13:00 Lunch & Sponsor introduction	11:40-12:20 Invited① ; Dr. Mochimaru		11:40-13:00 Lunch
11:50	12:00				
12:00	12:10				
12:10	12:20				
12:20	12:30		12:20-13:40 Lunch		
12:30	12:40				
12:40	12:50				
12:50	13:00				
13:00	13:10	13:00-13:40 Keynote① ; Dr. NED group			13:00-14:30 Shoes Brands Session
13:10	13:20				
13:20	13:30				
13:30	13:40				
13:40	13:50	Coffee Break (20mins)	13:45- (or 14:15-) Social Events & FreeTime		
13:50	14:00				
14:00	14:10	14:00-15:00 AFT & Racing(6)			Short Break (10mins)
14:10	14:20				14:40-15:20 Comfort & Perception(4)
14:20	14:30				
14:30	14:40				
14:40	14:50				Coffee Break (20mins)
14:50	15:00				
15:00	15:10	Coffee Break (30mins)			15:40-16:40 Nike Award Presentation(3)
15:10	15:20				
15:20	15:30				
15:30	15:40	15:30-17:00 PosterSession (at Gynastic Hall)			Coffee Break (20mins)
15:40	15:50				
15:50	16:00				
16:00	16:10				17:00-18:00 FBG Annual General Meeting
16:10	16:20				
16:20	16:30				
16:30	16:40				
16:40	16:50				
16:50	17:00				
17:00	17:10	-			
17:10	17:20				
17:20	17:30				
17:30	17:40				
17:40	17:50				
17:50	18:00				
18:00	18:10	18:00-19:30 (17:45 open) Welcome Reception (at Sakura Café)	-		-
18:10	18:20				
18:20	18:30				
18:30	18:40				
18:40	18:50				
18:50	19:00				
19:00	19:10				19:00-21:00 (18:30 open) Closing Banquet Award Ceremony (at Grand Prince Hotel)
19:10	19:20				
19:20	19:30				
19:30	19:40	-			
19:40	19:50				
19:50	20:00				
20:00	20:10				
20:10	20:20				
20:20	20:30				
20:30	20:40				
20:40	20:50				
20:50	21:00				

Oral Sessions

Day1

Session:	Novel technics & Performance		
Chairman:	Prof. Mike Hahn		
Time	Title	Author	Presentation ID
9:20-9:30	Machine learning material classification from ground reaction force during gait with polyurethane and styrene-butadiene rubber midsole military boots	Adriane Mara de Souza Muniz	O1-1
9:30-9:40	Prediction of the effect of stack height on running biomechanics using optimal control simulation	Chuyi Wang	O1-2
9:40-9:50	Towards the Application of Digital Twin in the Research and Development of Sport Footwear,	Qichang Mei	O1-3
9:50-10:00	Can contemporary racing spikes improve sprint running performance?	Sunil Prajapati	O1-4
10:00-10:10	Technological Advances in Track Spike Design Facilitate Enhanced Running Performance	Ethan Wilkie	O1-5
10:10-10:20	A 6-week short foot exercise intervention enhances barefoot and shod vertical but not horizontal jump performance in team sports players	Matthew Stoner	O1-6
Session:	Bending stiffness & Midsole property		
Chairman:	Dr. Sasha Cigoja		
Time	Title	Author	
10:40-10:50	The Influence of Midsole Thickness on Running Biomechanics and Performance in Female and Male Runners, Does Size Matter?	Zach B. Barrons	O2-1
10:50-11:00	Peak Plantar Pressures in Running Footwear with Increased Longitudinal Bending Stiffness	Christian A. Clermont	O2-2
11:00-11:10	Interaction of running shoe midsole hardness and bending stiffness on the lower-limb joints mechanics	Tomohiro Miyazaki	O2-3
11:10-11:20	Effects of Longitudinal Bending Stiffness and Midsole Foam on Running Energetics and Biomechanics	Herlandt Lino	O2-4
11:20-11:30	Understanding gait transition during running in different cushioned footwear conditions	Embla Jóhannesdóttir	O2-5
11:30-11:40	Effect of midsole cushioning on ankle, knee, and hip joint work during running	Kathy Reyes	O2-6
Session:	AFT & Racing		
Chairman:	Prof. Toni Arndt		
Time	Title	Author	
14:00-14:10	Effect of the Racing Shoes with the Special Heel Structure on the Elite Runners' Lower Limb Biomechanics	Fengqin Fu	O3-1
14:10-14:20	Evaluation of running economy in runners wearing shoes that elicit natural forefoot strikes	Shotaro Yokoyama	O3-2
14:20-14:30	Influence of foot posture focused racing shoes on running motion	Shunsuke Tazawa	O3-3
14:30-14:40	Different heel strike patterns change the impact of the whole body during running	Young-Seong Lee	O3-4
14:40-14:50	Insights into the energy returning properties of "super shoes" from a novel, highly accurate, biplanar videoradiography dataset	Quinn Yetman	O3-5
14:50-15:00	Effects of midsole stack height and foam on the metabolic cost of running	Montgomery Bertschya	O3-6

Day2

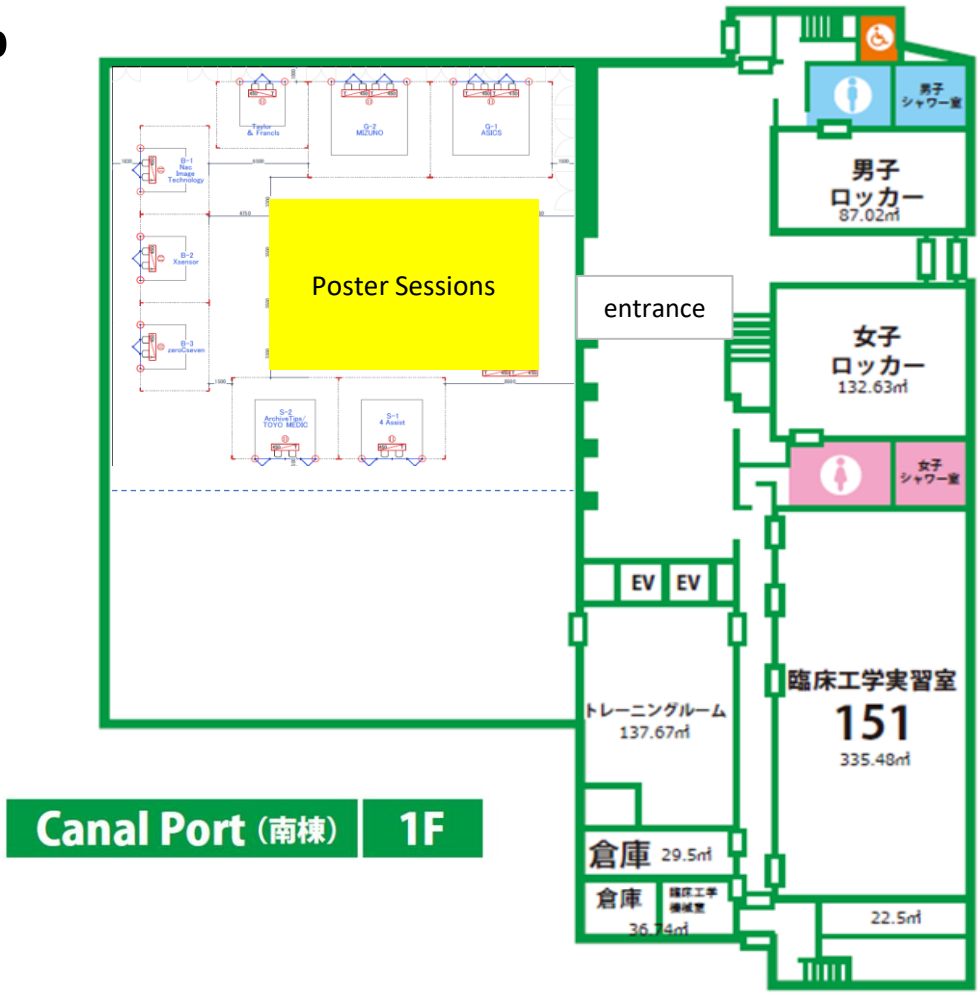
Session:	Loading & Injury		
Chairman:	Prof. Brent Edwards		
Time	Title	Author	
9:00-9:10	Relationships between pronation-related kinematics and musculoskeletal loadings during running: Implications for footwear	Nicolas Flores	O4-1
9:10-9:20	Extracting principal pressure pattern under the foot arch during prolonged running	Satoru Abe	O4-2
9:20-9:30	Is the energy loss of footwear related to Achilles tendon loading during treadmill walking?	Lloyd Reed	O4-3
Session:	Traction & Fall prevention		
Chairman:	Dr. Sarah Hemler		
Time	Title	Author	
10:40-10:50	Grip mechanisms and mechanical characterization of outsole materials: Toward shoe slip resistance prediction	Dimitri Ferré Sentis	O5-1
10:50-11:00	Evaluation of tread pattern by observing interface between shoe sole and sliding surface	Yusuke Yoshikawa	O5-2
11:00-11:10	Shoe-floor friction is predicted by high-frequency material properties and small-scale floor topographical features	Kurt Beschorner	O5-3

Day3

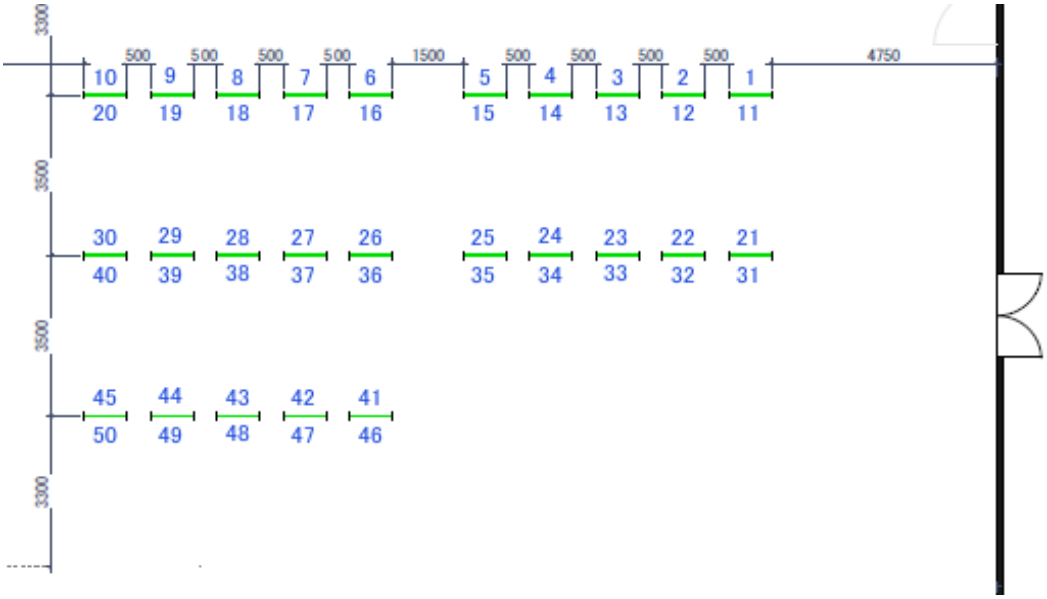
Session:	Clinical		
Chairman:	Dr. Karen Mickel		
Time	Title	Author	
9:00-9:10	Foot shape modeling of older adults with and without diabetes mellitus	Sarah Hemler	O6-1
9:10-9:20	The immediate effect of a prototype shoes for restraining body mechanics of knee osteoarthritis	Katsutoshi Nishino	O6-2
9:20-9:30	Effects of prototype shoes for knee osteoarthritis in female adults - Evaluations of gait, clinical outcome, and body composition –	Remi Hayashi	O6-3
9:30-9:40	The effect of design characteristics on the mechanical stiffness of children's off-the-shelf stability therapeutic footwear	Matthew Hill	O6-4
Session:	Fitting		
Chairman:	Prof. Julie Steele		
Time	Title	Author	
11:00-11:10	A Wrapping Fit of Ski Boots Improves Performance and Fit in Skiers	Daniel Feeney	O7-1
11:10-11:20	Shoe upper and baseball throwing performance	Kate Harrison	O7-2
11:20-11:30	Do sex differences exist in foot shape?: A hierarchical cluster analysis	Masanori Sakaguchi	O7-3
11:30-11:40	Quantifying foot shape and sensitivity to understand footwear comfort in aging adults	Emily Matijevich	O7-4
Session:	Comfort & Perception		
Chairman:	Dr. Chris Bishop		
Time	Title	Author	
14:40-14:50	Biomechanics and perceptions of recreational runners wearing novel shoes	Kim Hébert-Losier	O8-1
14:50-15:00	Relationship between individual differences in runners' running shoe preferences and biomechanical characteristics.	Hideya Okamoto	O8-2
15:00-15:10	Run Signature 2.0: Advancing our ability to quantify habitual motion path deviations	Evan Day	O8-3
15:10-15:20	Cluster analysis to identify possible subgroups in recreational runners and their preferred running shoes characteristics	Wan Muhammad Farid Amirul Hisham Wan Azmi	O8-4

Poster Session Layout

Map



Layout

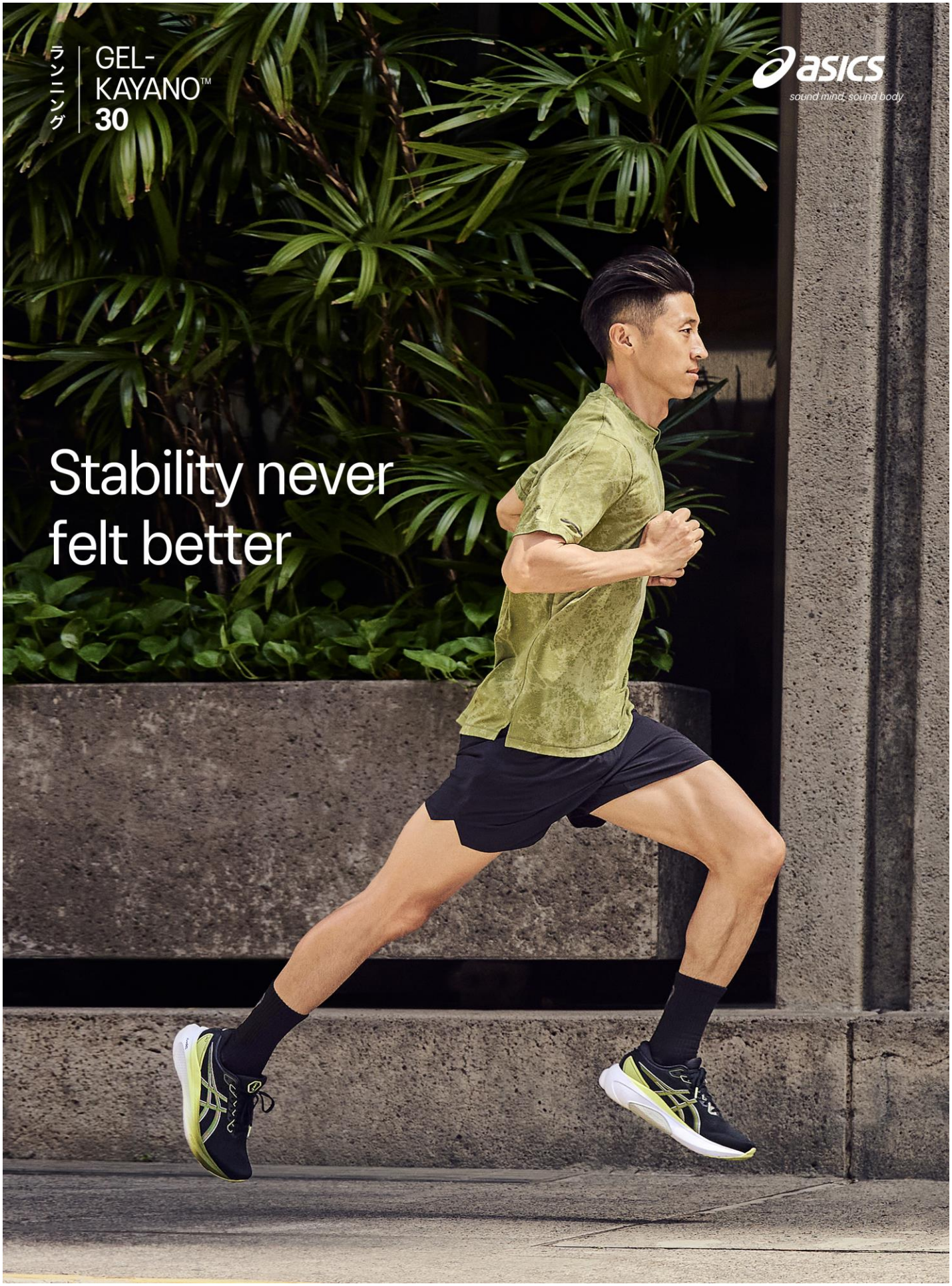


Poster Sessions

Poster Session

Chairman Prof. Sekiya Koike

No	Title	Author	Presentation ID
1	Preliminary work on the determination of mechanical power during running based on kinetic data	Dominik Krumm	P-1
2	Calculations of the optimised corrugated structure utilised in high heels	Saba Eshraghi	P-2
3	The correlation of ground reaction forces between different simplified pressure sensor layouts and the full layout in flatfoot	Wei-Han Chen	P-3
4	Biomechanical Features of Fit of a Trail Shoe with Different Uppers during Graded Running	Eric C. Honert	P-4
5	Increased Shoe Bending Stiffness Changes Ankle Kinematics During High Degree Cutting Movements	Timo Bagehorn	P-5
6	Does an analysis of the world top 100 track and road running performances provide an indication for the effects of super shoes and spikes?	Johanna Robbin	P-6
7	Use of textured footwear as an intervention for falls in healthy older adults	Helen Branthwaite	P-7
8	Foot shape does not differ across preferred hockey skate fit groups	Emily Matijevich	P-8
9	The influence on a non-linear bending stiffness profile on sprint acceleration performance and MTP biomechanics	Michael J. S. Esposito	P-9
10	Ground reaction force analysis of a prototype military boot with carbon-fibre plate mixed in midsole during gait: a preliminary study	Adriane Mara de Souza Muniz	P-10
11	Time and Frequency Domain Analysis of Ground Reaction Force in Highly Cushioned Shoes with a Carbon-Fiber Plate	Xinxin Wang	P-11
12	Shoe cushioning perception after a 38-km trail running race	Cedric Y.M. Morio	P-12
13	Plantar pressure comparison between running and tennis ground impacts	Alexis Herbaut	P-13
14	Duty factor and stride frequency as (potential) load magnitude determinants of slow, female runners' habitual running pattern	Van der Meulen Lennert	P-14
15	Systematic and Proportional Bias using Loadsol during Stationary Cycling	Walter Menke	P-15
16	Does altering the lateral edge friction of the shoes when used on two different playing surfaces can affects agility test performance among netball players?	Shariman Ismadi Ismail	P-16
17	Biomechanical Variables Associated with Cleated Footwear Slipping	John W. Wannop	P-17
18	The Biomechanical Effects of Shoe Drop on Foot Strike and Injury Risk during Running	Hui Tanga	P-18
19	Effect of running shoes with a carbon plate on running biomechanics	Sihyun Ryu	P-20
20	The effect of different insole stiffness on ankle joint moment during walking	XiaoJiao Xu	P-21
21	Effect of carbon plate inserted in trail running shoes on foot and shank acceleration at different slopes	Darren Stefanyshyn	P-22
22	Talus shape predicts subtalar running kinematics in minimalist shoes	Anja-Verena Behling	P-23
23	Cycling cleat positioning affects Achilles tendon strain, but at what cost?	Colin R. Firminger	P-24
24	A Pilot Study: Effects of an 8-week training intervention in carbon-plated running shoes	Justin R. Matties	P-25
25	Pilot study on foot movement in daily life gait for fall prevention	Shunsuke Yamagata	P-26
26	Effect of changes upper elongation of running shoes and various movements on the dorsal pressure distribution	Jaejin Ryue	P-27
27	Simultaneous evaluation method of segments and joints angle in the latter half of contact phase during running	Shin Hirai	P-28
28	Influence of spiked shoes with soft and bouncy midsole material on sprint performance	Shingo Sudo	P-29
29	Effect of muscle fatigue on metabolic cost in running and implications for footwear design	Key Nahan	P-30
30	Effects of midsole cushioning on biomechanical and physiological performance measures in an elite ultra-trail runner: a case study	Julian Fritz	P-31
31	Benefits of a Curved Forefoot Plate in a Women's Walking Shoe	Jay Worobets	P-32
32	Recognizing the specific footwear needs of older females playing court sports	Joanna Reeves	P-33
33	Does running experience influence static and dynamic measures of foot function?	Joshua PM. Mattock	P-34
34	Influence of Golf Shoes on Performance Compared to Barefoot Golfing	Joshua Isherwood	P-35
35	Influence of shoe and athlete on 100 m sprint acceleration biomechanics	Sanghyuk Han	P-36
36	The effect of modified friction by the outsole tread patterns on joint biomechanics during tennis specific movements	Jaewon Kang	P-37
37	Determination of optimal rear sole geometry for tennis shoes: a finite element analysis	Lisa Paillard	P-38
38	The effect of transverse arch support on peak plantar pressure and foot pronation before and after prolonged running	Yi-Jia Lin	P-39
39	Tibial Acceleration Peaks and Integrals on Three Different Surfaces During M-Drill	Sean A. Brown	P-40
40	Biomechanism of the impact force of the lead hook to the body in boxing and distributions of pressure under the foot	Radivoj Vasiljev	P-41
41	Effect of footwear on lower extremity net joint moments and barbell kinematics in weightlifting: a case study	Robert A. Needham	P-42
42	Footwear reduces and redistributes lower extremity joint work in women runners	Emily M. Farina	P-43
43	Foot length and width variety of shoppers who purchased the same style and size of running shoes	Ales Jurca	P-44
44	Spraino reduces impact coefficient of friction and inversion moment during mechanical simulations of the initial contact of a lateral ankle sprain injury in Badminton	Filip G. Lysdal	P-45
45	Does Deconstructing the Nike Vaporfly 4% Affect Running Mechanics?	Ashna Subramanium	P-46
46	Stability perception impact by a low-friction lateral shoe edge	Thor Groenlykke	P-47
47	The Influence of Midsole Rocker Geometry on Walking Biomechanics	Yannick Denis	P-48
48	No changes in knee and hip running biomechanics after a 6-week transition to maximal shoes	J.J. Hannigan	P-49
49	Effects of stud design on performance and joint loading during agility tasks including ball handling in soccer	Uwe G. Kersting	P-50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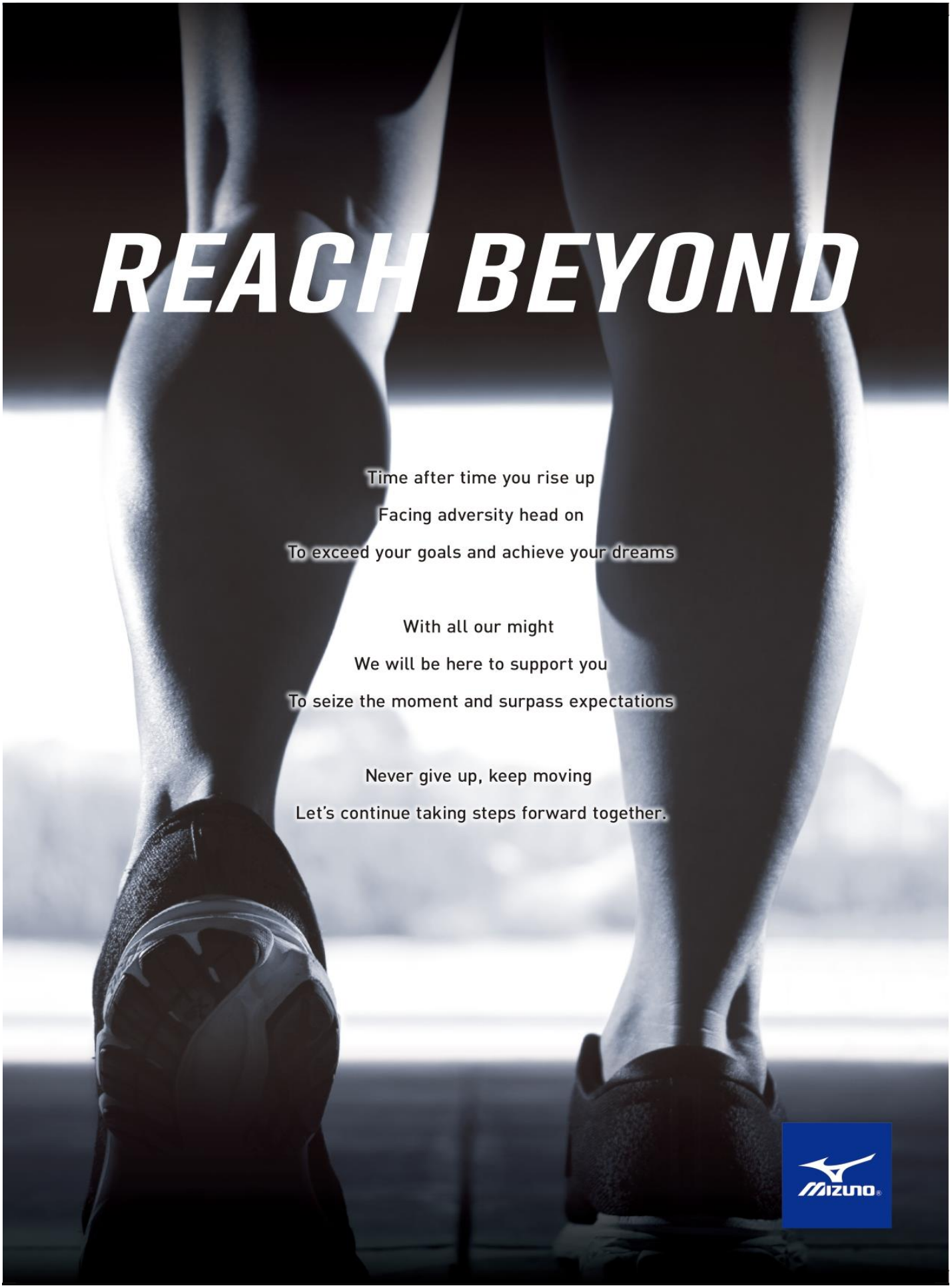
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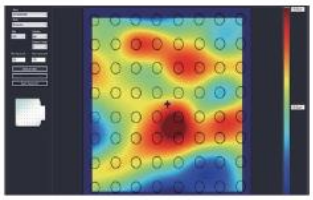

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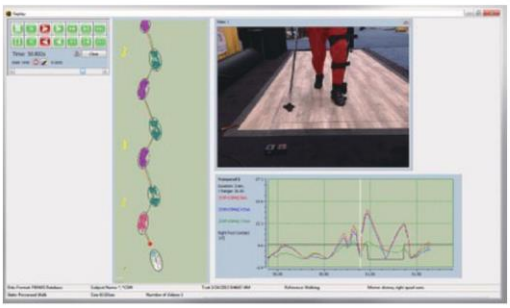

歩行解析装置

Zeno Walkway

ProtoKinetics の歩行解析システムは、PKMAS ソフトウェアシステムと Zeno Walkway(センサーシート) と組み合わせることで、多彩な歩行とバランス評価に有効です。
この歩行解析システムは、時間、空間、および圧力のデータを収集し、分析するための最適なプラットフォームと言えます。

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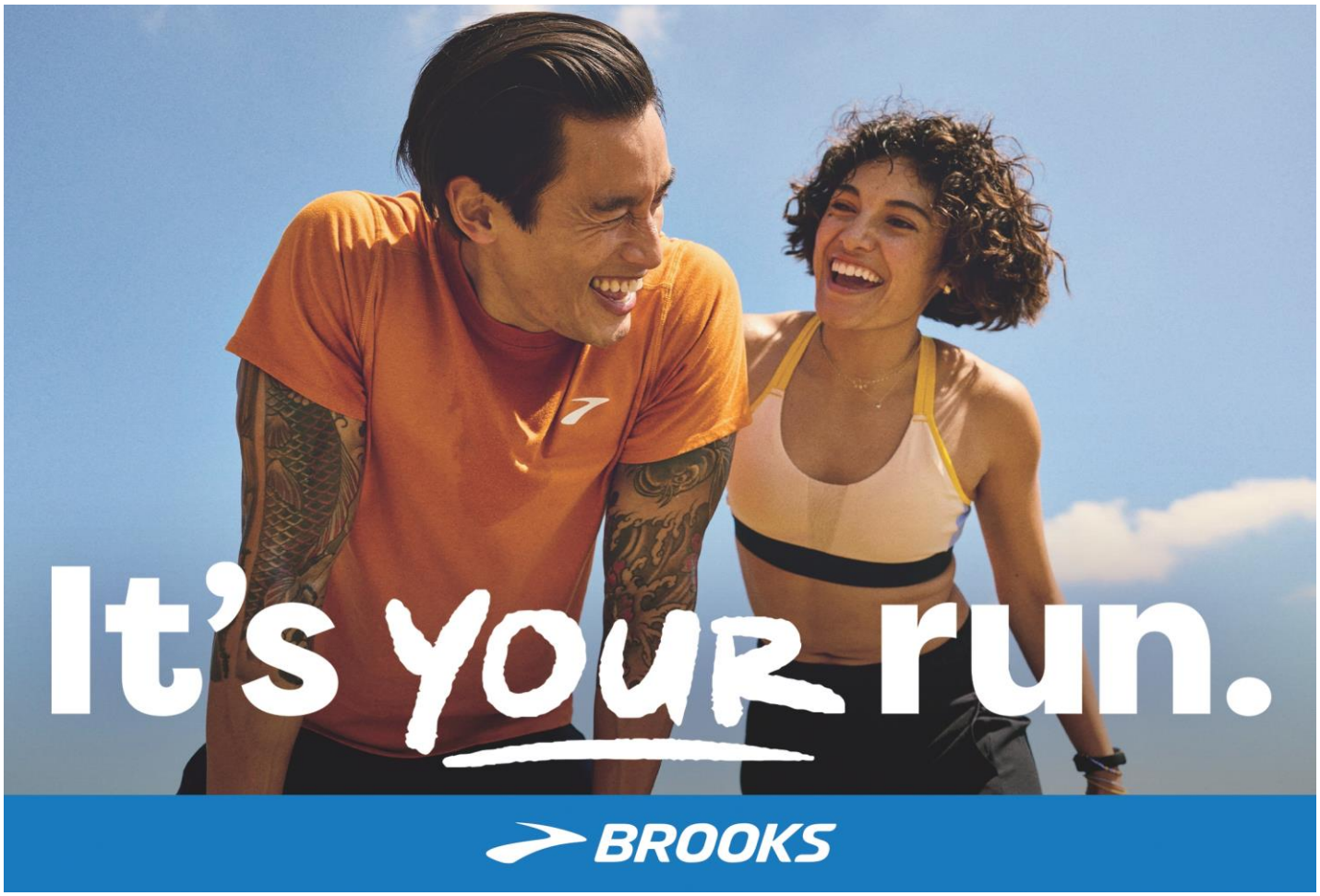


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