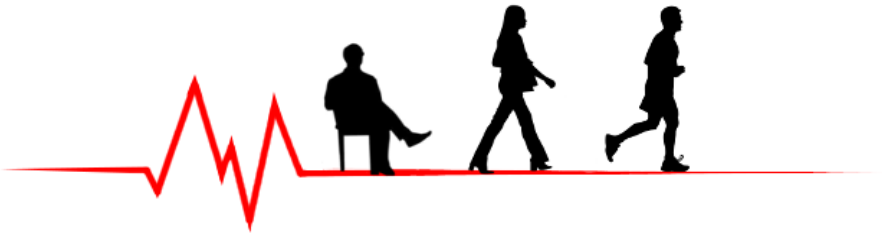
ISMPB

International Society for the Measurement of Physical Behaviour



Newsletter ISMPB

June, 2016

WWW.ISMPB.ORG

IN THIS ISSUE

Highlights

Message from the president

The ISMPB is moving forward! An example is this Newsletter, a means of communicating to the membership. These changes are a result of the efforts of one of our board members (Genevieve Healy), but also the product of a team of enthusiastic ISMPB members who have indicated to be willing to contribute to the development of the ISMPB. This is an example of how we would like the ISMPB to work: not based on the activities of a small group of people, but having its fundamentals in engaged members. Young researchers – the future of our field of research and the society – are felt to be extremely important in our future as a society.

Another big step made last month has been the decision on the organisation and location of the next ICAMPAM conference. We're proud that the National Institutes of Health in Bethesda (USA) will partner with our society to organise the next ICAMPAM in June 2017. Together with NIH the ISMPB will do everything within its reach to organize an exciting and high-quality conference.

I hope you will appreciate the content of this Newsletter. If you've any suggestion for improvement or additional categories, or if you've any other comment or question please let us now.
Hans Bussmann

Member profile

by Miriam Cabrita

Everybody has a unique career path to their current destination. Can you share some of your stops along the way?

I finished both my bachelor and master studies in Biomedical Engineering at Universidade Nova de Lisboa, Portugal. I have always wanted to study abroad and in 2011, within the ERASMUS program, I completed the first year of my master at the University of Twente (UT) in the Netherlands. This experience was extremely rewarding for me on both a personal and professional level. One day, after a lecture on promotion of physical activity, given by prof. Miriam Vollenbroek-Hutten, I asked if it would be possible to perform my master project in her research group. In January 2013 I started my master thesis research at Roessingh Research and Development (RRD), the largest Dutch research center for physical rehabilitation. And there started my research journey. Right after finishing my master's thesis I started my PhD at RRD and UT.

Tell us about a current project you are working on

I am currently in the last year of my PhD, and therefore there is a lot going on. My PhD is integrated in a European project, PERSSILAA (www.perssilaa.com), which aims to screen for and prevent frailty among community dwelling older adults. My task within the project is to develop a monitoring tool to get detailed insight in the daily functioning of older adults, including monitoring and coaching of daily physical activity. In a broader sense, my main research interest is the use of ICT to promote Active and Healthy Ageing in the daily lives of older adults. To do so, I look at the relation between daily physical activity and wellbeing, mainly in regard to positive emotions.

What do you think are the most important research advancements in this area?

Being physically active is trendy; there is no doubt about that! The wearables consumer market is continuously growing and with it the sensors become smaller and less obtrusive. However, access to data hasn't become any easier. You either get raw data and low usability, or good usability and no open access to data. This makes research studies in daily life very difficult.

Have you participated in any ISMBP events? If so, can you please describe your experiences?

I participated in ICAMPAM and immediately wanted to join the ISMPB. It is such a good environment. It is great to associate faces to all the names of researchers and authors you have been following during your PhD.

In the future, what would you like to see from the ISMBP

As Early Career Representative I would like to see ISMPB as a living community, a place to share knowledge, experience and support synergies among members.

IS THERE ANYTHING YOU WANT TO FOLLOW UP WITH MIRIAM

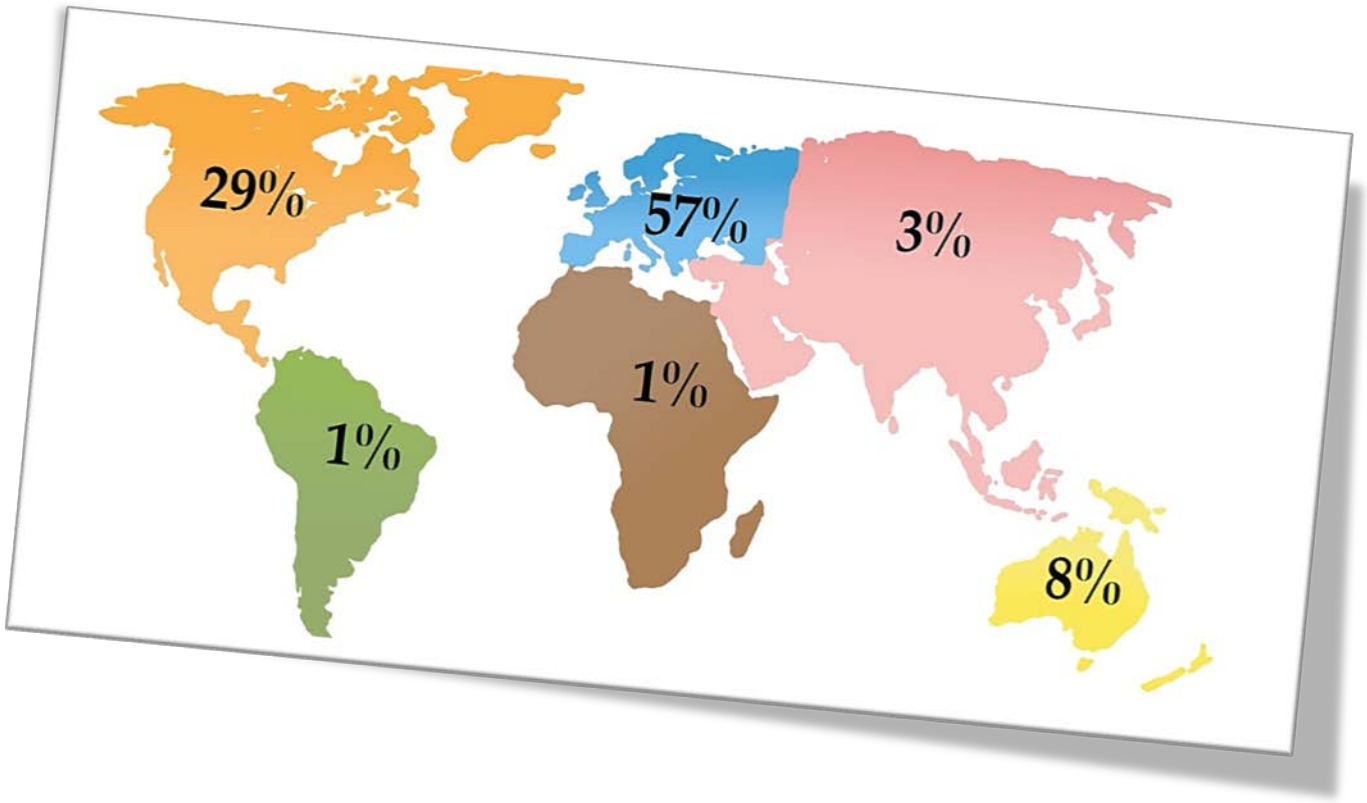
m.cabrita@rrd.nl
Contact Info

Here are the ISMPB board members

Meet the Board

1. Hans Bussmann (President)
2. Malcolm Granat (Vice-resident)
3. David Bassett (Secretary)
4. Alan Donelly (Treasurer)
5. Patty Freedson
6. Genevieve Healy
7. Jeff Hausdorff

Where are our members from?



A word from the membership committee

Greetings from the Membership Committee!

It is an exciting time for ISMPB. Our aim is to be a vibrant society that brings together people who have an interest in measuring free-living physical behaviour. We are currently exploring a range of activities that we will be offering to society members to ensure that there are opportunities to find out what's new in the world of measurement, and to provide a platform for researchers and practitioners to connect and share cutting-edge information. Over the next couple of months we are looking to ask ISMPB members about what they would like the society to offer. We would be delighted to hear your thoughts.

We have already established a Facebook page (https://www.facebook.com/ISMPB.org/) and Twitter account (@ismpb_org) where information about some of the latest measurement studies and the next ICAMPAM conference are provided. We also have some member events in the pipelines, so make sure you keep an eye out for these!

Nicky Ridgers

Chair, Membership Committee

Meeting at NIH

by Malcolm Granat

Hans Bussmann, David Bassett, and Malcolm Granat visited the NIH facilities in Bethesda early February of this year.

During our stay the weather was sunny yet very cold, temperatures of around -10˚C (14˚F) during the day, not what Europeans are used to! However, our warm reception from Rick Troiano [NCI, Program Director] and other folk at NIH and NCI (Amy Subar [NCI, Program Director], Adrienne Overton [NCI, Meeting Support], Christine Kaefer [NCI, Communications Coordinator], Audrey Wellons[NIH, Communications Consultant] and Dana Wolff-Hughes [NCI post-doctoral fellow]), more than made up for the cold weather. During our stay we agreed that NIH would partner with ISMPB to organise the next ICAMPAM in June 2017, and this would be based at the excellent NIH facilities in Bethesda. Our tour of the facilities at the NIH campus and our planning meetings with local NIH and NCI staff demonstrated that ICAMPAM 2017 would be a meeting to look forward to; we have ideal conference facilities, a great location and very enthusiastic and active local research groups.

SAVE THE DATE!

2017 Bethesda

The International Society for the Measurement of Physical Behaviour (ISMPB) and the National Institutes of Health (NIH) are pleased to announce the 5th International Conference on Ambulatory Monitoring of Physical Activity and Movement (ICAMPAM) conference

ICAMPAM 2017

June 21 – 23, 2017

National Institutes of Health (NIH),

Bethesda, Maryland

KEEP UP TO DATE ON OUR WESITE
http://www.ismpb.org/2017-bethesda/

SEAN HURLEY WAS THE PRIZE WINNER FOR THE TOP ORAL PRESENTATION AT ICAMPAM 2015

Have something to share?

Each issue of the newsletter will contain a list of selected recent publications, a profile of a current member and other information and announcements will be included as they develop. The newsletter will be published four times a year. If you are interested in having your article profiled for the literature scan or being the profiled member, or if you have anything that you would like to share with the ISMPB community, please contact:

Nicky Ridgers (nicky.ridgers@deakin.edu.au)

Cheryl Howe (howec@ohio.edu)

FAST FACTS

28%

Members of ISMPB who are students

28°C

Average maximum temperature (C) in June in Bethesda – perfect for a conference.

Literature

What's new in the world of physical activity measurement? We hear from the ICAMPAM 2015 prize winners

Physical activity in knee Osteoarthritis sufferers

Maintaining mobility and physical activity (PA) is an important component of knee osteoarthritis (OA) management and is fundamental to address chronic co-morbidities found in those with knee OA. This study compared moderate-to-vigorous physical activity (MVPA) and physical activity guideline (PAG) adherence between those with knee OA versus asymptomatic individuals using both self-reported and accelerometer assessed PA.

The majority of asymptomatic (55%) and moderate OA (92%) participants did not meet PAG based on accelerometer data, with the OA group less active overall. In contrast, OA participants self-reported more bouted-MVPA, and most participants in both groups reported meeting the guidelines. This substantial overestimation of PA questions the value of self-reported measures in this clinical population. Accelerometer data supports the need to develop effective and safe interventions to increase MVPA in those with knee OA to achieve health benefits.

Sean Hurley

Predicting physical activity energy expenditure in wheelchair users

Last Summer I had the pleasure of presenting a poster (The merit of individual calibration: estimating physical activity energy expenditure in wheelchair users) at ICAMPAM in Limerick. The purpose of this study was to evaluate the validity of a multi-sensor device, the Actiheart™ (which incorporates acceleration signals and heart rate), in predicting physical activity energy expenditure (PAEE) in wheelchair users. We also wanted to determine whether the accuracy of this device could be improved through the use of an individual heart rate calibration. The accuracy of predicted PAEE was assessed against corresponding criterion PAEE (indirect calorimetry) measured during a laboratory protocol which consisted of wheelchair propulsion across a range of velocities and gradients. Associations between 24 hr self-reported free-living PAEE (activity log) and Actiheart™ predicted PAEE were also evaluated. The main outcome of this study was that PAEE in wheelchair users can be accurately and precisely estimated using the Actiheart™ device, with integration of an individual heart rate calibration. Considering the inter-individual variance in cardiovascular responses to exercise is high among wheelchair users (due to factors intrinsic to the disability), individual calibration is strongly advocated. We found that the individual calibration approach offered approximately a threefold improvement in the accuracy of predicting PAEE in wheelchair users in comparison to manufacturers' proprietary prediction equations. This validated PAEE assessment method is currently being used to measure changes in free-living physical activity behaviours of participants with chronic paraplegia in an ongoing randomised controlled trial (ISRCTN57096451). We hope that future use of this methodology will contribute to our understanding of the volume and intensity of physical activity necessary to achieve optimal health in at risk populations who use wheelchairs. More

details about the study presented in this abstract can be found in a subsequent publication (Nightingale et al., 2015, BMJ Open Sport Exerc Med. 0:e000008).

Tom Nightingale: DisAbility Sport and Health (DASH) research group, Department for Health, University of Bath, UK.

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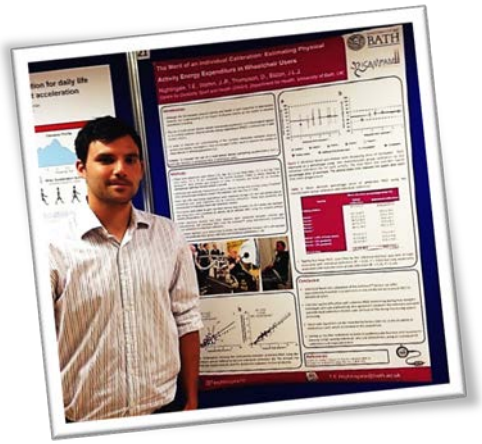


Tom Nightingale with his prize winning poster presentation at ICAMPAM 2015

Detecting tremor in MS patients

Over 25% of people with MS have tremor. Tremor considerably affects daily function and quality of life. There is currently no method of objectively measuring tremor characteristics. This project used a wrist worn accelerometer to establish a measurement of tremor in people with MS.

12 participants with tremor due to MS and 10 healthy controls performed a standardised tremor assessment wearing a tri-axial accelerometer (100Hz, ±8g) on their wrist. Frequency content of the signal was examined in Matlab using Fast-Fourier analysis based on a 2 and 3s window in all three axes and for the resultant signal. Content above 3Hz was identified. It was hypothesised that this content would only be apparent in those with MS during periods of observed tremor and not in control subjects. Video observation (Occupational Therapist) was used as the gold standard for tremor detection.

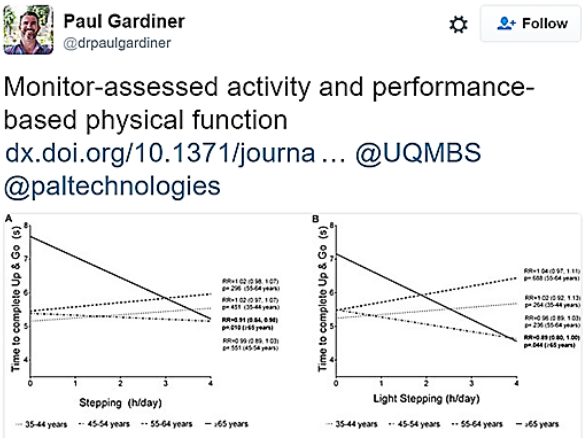
Where tremor was observed to occur in those with MS it was possible to detect it using a simple frequency cut-off. A 100% detection rate with no false positives was achieved. None of the control subject data produced false positive results for tremor occurrence.

Examination of all three axes for evidence of tremor ensured all occurrences of tremor were detected, while use of the resultant acceleration signal did not allow the detection of all instances of tremor.

The results provide encouragement that a simple tremor detection algorithm may be possible in those with MS. Analysis should be implemented for each axis of acceleration data and not be based upon an analysis of the resultant signal. The algorithm must be tested in a wider group of people with MS associated tremor to ensure wide applicability. When fully validated, this solution will allow multi-day, free-living tremor monitoring.

Stefan Teufl: stefan.teufl@gcu.ac.uk

What's happening for ISMPB on social media?



Become a member of ISMPB

Who can become a member?

Membership in ISMPB is open to everyone from around the world involved in the measurement of free-living physical behaviour.

Membership fees support the mission of ISMPB in creating a vibrant community bringing together people from a wide variety of backgrounds and expertise, including researchers, clinicians, therapists, signal analysts, computational scientists and commercial companies.

What are some of the benefits for members?

- Register for Society Meetings at reduced registration rates
- Support a new, young and independent Society
- Become connected with leading experts in the field
- Opportunity to get involved as an ISMPB Committee member
- Vote in annual elections for the Board of Directors
- Stand for election to the Board of Directors
- Eligible for student awards at the Society Meetings (best oral and best poster)
- Access to online resources and conference proceedings
- Opportunity to post news and information on related events

Member Categories

Regular / Post Doc Members
Open to any person who is engaged in research related to areas of interest of the Society (US$100)

Student Members
Open to any student enrolled in degree granting programs at institutions of higher education (US$65)

Link http://www.ismpb.org/membership/

Newsletter
ISMPB

www.ismpb.org

www.facebook.com/ISMPB.org

https://twitter.com/ismpb_org