



Key dates

23rd April 2018

Paper submission closes (midnight NZ time)
New Investigator Award application closes

21 May 2018

Delegates advised of paper presentation format (10-mins podium
or 1-min poster)
Student Travel Grant application closes (midnight NZ time)

11 Jun 2018

Standard registration NZ\$895 full, NZ\$665 student (after this date
20% increase in fee)

9 Jul 2018

Late registration closes (papers deleted if delegates are not regis-
tered)

10 Sept 2018

ISBS 2018 Auckland conference opens

14 Sept 2018

ISBS 2018 Auckland conference closes

AUTRESEARCH &
INNOVATION

Professor Patria Hume FISBS — ISBS 2018 Chair

ISBS 2018 conference AUCKLAND, NEW ZEALAND



With a combination of city sophistication and world-class facilities set in a stunning natural playground, Auckland has everything we need to create an exceptional ISBS 2018 conference.

Why travel to the “land of the long white cloud”, down under? Apart from an excellent academic programme with international keynote speakers, delegates’ oral and poster presentations, we have some novel aspects that you won’t have experienced at other conferences.

In keeping with our Kiwiana theme, we will have a **Wise Wizards Panel** (yes, think Lord of the Rings movie) joining Associate Professor Jacqueline Alderson to answer interactive questioning from the delegates via social media feeds. Panel members are prestigious previous Geoffrey Dyson awardees, Life members, and ISBS Fellows: Professors Joe Hamill, Bruce Elliott, Juris Terauds, Walter Herzog, Patria Hume.

Following each keynote panel there will be lunch round table sessions in the main atrium. Delegates will actively participate in **Luncheon Round Tables** that pose questions such as “What can biomechanists do to use technology more effectively to help improve sport performance?” Information collected during these eat, meet and discussion sessions will be used to inform the creation of new initiatives for ISBS members.

The **Sports Technology Forum and Showcase**, and the **Industry Playing Field** events, will give delegates interactive experiences with new industry technology companies. The aim is for delegates to think outside their usual sphere of practice and to consider how they might work better with industry in their research, education and community service.

The **AUT Millennium Applied Programme** is an interactive half day of sessions delivered by High Performance Sport New Zealand (HPSNZ) and Auckland University of Technology (AUT) biomechanists, performance analysts and other biomechanics relevant sport facing practitioners. Coaches and athletes will be an integral part of these sessions. Sessions will enable you to experience the interactive model where education, research and community service (developmental to elite to masters’ level athletes) occurs in the one facility.

INTERNATIONAL SOCIETY OF BIOMECHANICS IN SPORTS CONFERENCE

TE HŌKAI TAPUWAE
THE BREATH OF STRIDE

ISBS 2018
Auckland, New Zealand
10-14 September

For information:
isbs2018.com or isbs2018@aut.ac.nz

Your hosts: **AUT** **AUT MILLENNIUM** **HIGH PERFORMANCE SPORT NEW ZEALAND**



ISBS 2018 Conference KEYNOTES

For information see: isbs2018.com

Associate Professor Jacqueline Alderson, (University of Western Australia) and Professor Barry Wilson (Conference Co-Chairs) are responsible for the academic content of the conference, the oral and poster scheduling and the keynotes and invited speakers.



Conference keynotes include Mounir Zok (USA), Sophia Nimphius (Australia), James Selfe (United Kingdom), Geoffrey Dyson 2018 Awardee Professor Hermann Schwameder (Austria) and Hans Gros 2018 Awardee Steffen Willwacher (Germany).

Dr Mounir Zok - Director of Technology and Innovation for the US Olympic Committee

Mounir is the Director of Technology and Innovation for the U.S. Olympic Committee. He helps bring emerging technologies to Team USA. Zok's expertise areas of wearable technology, smart textiles and fabric, Internet of Things, artificial intelligence and cognitive computing are of interest to sports biomechanists in their goal of improving sports performance. Zok's keynote will stimulate biomechanists to think of new ways to help improve athlete's results with technology. Silicon Valley based, born and raised in Beirut, Mounir is a world citizen having lived and worked in UK, Italy, Spain, and USA. Mounir is passionate about sports, technology, innovation and entrepreneurship, is constantly challenging the status quo, and has 15 years' experience in leading sports technology initiatives with the most prominent sports teams in the world. He sits on the working board of Women in Sports Technology, and advises and invests in several emerging technology companies.



Associate Professor Sophia Nimphius - Associate Professor at Edith Cowan University, Australia



Sophia leads High-Performance Services for Softball Western Australia. Previously she was the Sport Science Manager at Surfing Australia Hurley High-Performance Centre. She has received awards for her contribution to the field such as the 2017 Female Leader in Exercise & Sports Science by Exercise and Sports Science Australia, the 2016 ECU's Vice Chancellor Staff Award for Inspirational Individual (Personal Excellence), and the 2014 NSCA Terry J Housh Outstanding Young Investigator (2014). She is a passionate advocate and mentor for women and minorities in an effort to enhance their representation in science, technology, engineering and math as well as driving to increase their representation in high-performance sport positions. Sophia's keynote is titled: Re-evaluating what we "know" about female athletes in biomechanics research: Across the continuum from capacity to skill.

Professor James Selfe - Professor of Physiotherapy, Manchester Metropolitan University

James is Professor of Physiotherapy, Manchester Metropolitan University. In 2008 James was honoured by the Chartered Society of Physiotherapy by being awarded a fellowship for his outstanding contribution to musculoskeletal physiotherapy, particularly in the field of patellofemoral pain dysfunction. He won the UK Technology Strategy Board's 2014 Knowledge Transfer Partnership Sports award. James will lead the ACC SportSmart Panel to discuss injury prevention from head to toe using a biomechanics perspective.

Joining James on the panel will be Isaac Carlson (ACC Senior Injury Prevention Manager), Dr Ken Quarrie (NZ Rugby Senior Scientist - Biomechanist & Epidemiologist), Dr Mark Fulcher (NZ Football Medical Dr), Ms Sharon Kearney (NZ Netball Physiotherapist). The panel will be chaired by Natalie Hardaker (ACC Senior Injury Prevention Manager).



ISBS 2018 AUT MILLENNIUM APPLIED PROGRAMME

For information see: isbs2018.com isbs2018@aut.ac.nz



The AUT Millennium applied programme with elite biomechanists, scientists, athletes and coaches, will be a highlight of the conference.

Mr Martin Dowson from High Performance Sport New Zealand (HPSNZ) is leading the applied programme held at the AUT Millennium precinct in Albany, north of Auckland, on Wednesday 13 September with the support of AUT Millennium and HPSNZ.

The AUT Millennium precinct where the AUT Sports Performance Research Institute New Zealand (SPRINZ) is based, is also home to HPSNZ supported sports such as athletics, sailing, canoe sprint, swimming. These sports and others (cycling, rowing, snow sports etc.) will be represented in the sessions you can choose from for the AUTM applied half day. These sessions will involve practical demonstrations of aspects of analysis and/or tools used to deliver in the field to directly positively impact athletes performances on the world stage.

Each delegate will attend one common session showcasing how we – SPRINZ and HPSNZ scientists, elite coaches and athletes – work together to improve sport performance and reduce injury risk. The state of the art facilities will be used for the interactive sessions. You will then attend two out of the sessions, which you will indicate when you register:

1. Biomechanics in Canoe Racing
2. Rowing Stroke Analysis
3. Paralympic Swimming Technique Analysis and Technology Development
4. Utilising Biomechanics in Track and Field Throwing Events
5. Biomechanics Related to Athlete Development
6. Sprinting—Performance and Rehabilitation
7. Running Biomechanics
8. Cycling Biomechanics - Forces and Physiology
9. The Impact of Innovation on Biomechanics
10. Sports Medicine and Biomechanics
11. Analysis in a Challenging Environment (Sailing)
12. Wearable Technology in Snow Sports Load Monitoring



Following these engaging sessions, the day will finish with the **Sir Graeme Avery Event** with award winning New Zealand wine and cheese, to allow for further discussion and networking. Sir Graeme Avery, a founder of AUT Millennium, will attend the event where he will receive a recognition award for his contribution to AUT Millennium and the integrated use of sport science, in particular for athletics.

Buses will transport delegates from the city centre to the venue and back **therefore your registration for the applied programme (free as part of your registration) is essential.**



ISBS 2018 Conference WORKSHOPS

For information see: isbs2018.com

isbs2018@aut.ac.nz



A WORD FROM OUR PLATINUM INDUSTRY PARTNER

Alex Muir - Vicon Asia Pacific Manager



"We are truly excited about being a part of ISBS in Auckland. The spirit in which athletes, coaches, scientists and technology partners are working together means this is a unique era of collaboration in the Australasian and Asian regions. Auckland is perfectly placed to showcase these exciting times at ISBS 2018. From our sneak preview, we can confirm the organising committee are sculpting an extraordinary and intimate conference. I would recommend all ISBS's industry partners and potential delegates to commit early; it will be a sensational conference!"

There are 12 one and a half hour workshops available.

The workshops will be held Monday 10 September at the AUT Conference Centre. Further details will be provided on the website as industry partners confirm their sessions.

Workshops are provided to help delegates:

- increase their likelihood of success in publishing in journals such as *Sports Medicine* (Steve McMillan, Journal Editor at Adis, SpringerNature);
- interact with media to be able to amplify their work (Dylan Cleaver, award-winning sports editor-at-large for the NZ Herald);
- improve their ability to attract and create commercialisation and funding opportunities (Dr Philip Graham-Smith, Aspire Academy, Qatar);
- consider pushing their boundaries of biomechanics and sport science by embracing artificial intelligence (Dr Boris Bačić and Assoc. Prof Russel Pears, Auckland University of Technology, NZ).

Commercialisation & funding – Dr Philip Graham-Smith (Aspire Academy)

This workshop will challenge delegates to identify their real areas of expertise and consider ways in which they can attract and create funding opportunities. The aim is to help academics of all ages to focus their expertise, to manage their time more effectively and to explore new avenues to make their careers more rewarding, fulfilling and hopefully less stressful. Having been a former Head of Department and Associate Head of School (Business & Engagement), Dr Graham-Smith has been in the trenches and acknowledges the increasing demands and pressures of working in academia. The workshop will help delegates to strip back the various aspects of their roles, and to examine ways in which their teaching, research, consultancy and funding expectations can be managed successfully. Phil will be reflective on his own career and share experiences of working in academia, professional sport and private industry.



Dr Philip Graham-Smith has a long and established career as a biomechanist working in academia, professional sport and private industry. He is currently Head of Biomechanics at Aspire Academy in Qatar and was formerly Head of Department and Associate Head of School for Business and Engagement at the University of Salford. He was consultant to UK Athletics, the English Institute of Sport, the footwear company FitFlops, and he is co-founder of the ForceDecks system. He is passionate about making biomechanical techniques usable and meaningful in the applied world, aligning with the ISBS 2018 ethos of 'bridging the gap'.

ISBS 2018 Conference WORKSHOPS

For information see: isbs2018.com

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What makes a successful paper – an Editor’s perspective – Steve McMillan (Springer)



From a compelling cover letter to a concise conclusion, Sports Medicine’s Co-Editor in Chief, Steve McMillan, will provide an editor’s perspective on what makes a successful paper. Sports Medicine receives over 600 submissions a year and can publish only a quarter of these ... How do the editors decide which manuscripts to send to peer review? Which manuscripts survive peer review? What details are essential to enable readers to best understand your research and allow for potential replication? What information is required from an ethical perspective? Why do word counts matter anyway?! This interactive workshop will guide you on how to produce an impressive manuscript and increase your chances of getting published in a reputable journal.

Steve McMillan is a Journal Editor at Adis, part of SpringerNature. He is currently Co-Editor-in-Chief of three journals: Sports Medicine, Sports Medicine - Open and Drug Safety - Case Reports. Steve started at Adis straight out of university, having completed an MSc in Sport & Exercise Science in 2005. Prior to becoming a Journal Editor, Steve gained experience as a Medical Writer, involved in reporting on and critically evaluating clinical drug trials, and as a writer/editor of newsletters in the fields of drug safety and pharmacoeconomics. Outside of work, Steve enjoys spending time with his young family.

AI challenges – Dr Boris Bačić (Auckland University of Technology, NZ) and Assoc. Prof Russel Pears (Auckland University of Technology, NZ)

Pushing the boundaries of biomechanics and sport science also means embracing artificial intelligence (AI) to advance and augment ways in which sport is coached, played, promoted, broadcasted and commercialised. Technologies capable of capturing human motion enable the advancement of research and can create strategic differences in elite sport, which is reflected by their increasing presence in the growing market of sport gadgets, exergames and rehabilitation technologies. Data-driven machine-learning AI approaches have the potential to provide insights from data, find patterns in specific contexts, generate knowledge, validate expert’s common-sense rules, and offload support decisions and automate cognitive activities.

The workshop will provide a theoretical introduction and a set of analytical and model-designing visual tools for getting started. For those interested in Matlab or other languages, code samples will be provided. The participants will be able to use free open source software alternatives as part of hands-on exercises in a supervised lab.

Boris has multidisciplinary research interest in Computational Intelligence (CI), data analytics combined with sport science, rehabilitation, health, active life advancements and supporting technology. Russel has taught in various topics in computer science, while practicing as a consultant in the IT industry in the areas of database systems and data mining.



Registration for the free workshops, via the conference website, is essential as places will be filled on a first-registered, first-placed basis.

ISBS 2018 WORKSHOPS & DELEGATE PAPERS

The **deadline** to submit papers is **23rd of April**

Journalist Dylan Cleaver will be looking for interesting stories to highlight from the conference - so attending his workshop will provide an opportunity for you to learn how you might get your research stories covered.

How to work with the media to amplify your work – Dylan Cleaver (NZ Herald)

Never before has there been so much attention given to the injury toll in elite sport, with the spotlight firmly centered on head injuries and the potential for long-term cognitive damage to those afflicted. With so much important research being done in the field of sports injury, it is important to know how to work with the media to highlight it. This workshop aims to give a brief overview of the fast-changing modern media landscape. It will offer advice as to how to establish contacts in the media and how to use those contacts wisely. It will demonstrate how to get your key messages across using simple language, without dumbing down the issue. It will traverse ethical issues and, finally, what to do when the message goes wrong. Attendees will use the lessons learnt from the examples, to workshop during the session how they can work with media to amplify their work.

Dylan is an award-winning journalist who specializes in reporting on the intersection between sport and society and currently works as sports editor-at-large for Herald titles. For the past two decades he has worked for some of the biggest media companies in New Zealand. He has authored three books and has work published in an anthology of New Zealand's best non-fiction writing. Dylan was the journalist who worked on the stories on concussion in rugby that Professor Patria Hume outlined in her 2016 Geoffrey Dyson Keynote lecture.

Submissions of conference papers (for all oral and poster presentations)

Please remember the **deadline to submit papers is the 23rd of April** (midnight NZ Time). Remember these are 4-page papers.

PLEASE NOTE this deadline will NOT be extended (as some other conferences do), as aspects of the organisation depend on the academic programme, and the number of registered delegates. This will ensure the quality half day tours, delegate pack items, conference beverages, can be confirmed and purchased ahead of the conference opening.



ISBS 2018 Conference—Auckland New Zealand

ECO-FRIENDLY MANAAKITANGA CONFERENCE

Kaihāpai Dr Valance Smith, leads the ISBS 2018 Conference manaakitanga



Auckland University of Technology (AUT), Sports Performance Research Institute New Zealand (SPRINZ), High Performance Sport New Zealand (HPSNZ), AUT Millennium (AUTM), Auckland Tourism Events and Economic Development (ATEED), are proud to host the conference. In the spirit of manaakitanga, we look forward to welcoming you to Auckland, New Zealand, with open hearts and open minds. Manaakitanga is the Māori word for hospitality, kindness, generosity or support - the process of showing respect, generosity and care for others.

ISBS delegates will have the chance to experience New Zealand's unique indigenous Māori culture, in a city that is also one of the most multicultural in the world.

The conference will be hosted in the new award winning Sir Paul Reeves Building at the Auckland University of Technology in downtown Auckland. The AUTM applied programme, that is a fully integrated part of the conference, will be held at the AUT Millennium campus.

Our selection of conference products for the delegate package is based on the items being taken home from the conference by delegates, rather than discarded. A range of food and drink stations will be positioned within the exhibition areas.

CONFERENCE SOCIAL FUNCTIONS — INCLUDED IN YOUR REGISTRATION

- Monday 10 September - Opening reception and industry partners' playing field
- Tuesday 11 September - Students Marae and hangi night
- Tuesday 11 September - VIP night for keynotes, invited speakers, ISBS Fellows and ISBS conference paper reviewers, and industry partners
- Wednesday 12 September – Sir Graeme Avery event – AUT Millennium
- Thursday 13 September – ½ day social tours: Marae and hangi (non-student delegates as they experience this on the Tuesday student event) or Sky Tower and city walk
- Friday 14 September - Closing banquet and kapa haka performance

STUDENT MARAE & HANGI NIGHT AND MENTOR BREAKFAST

All student delegates will be invited to attend a unique cultural experience. ISBS 2018 Student Night will take place on Tuesday 11th September, at the AUT Ngā Wai o Horotiu Marae (Māori meeting grounds). A hangi (food cooked in the ground) and cultural experience will be provided by AUT kapa haka group Tītahi ki Tua.

The student mentor programme will include a breakfast networking meeting on the Tuesday morning.



ISBS 2018
Auckland, New Zealand
10-14 September
www.isbs2018.com

ISBS 2018 Conference — Auckland New Zealand

SOCIAL 1/2 DAY TOUR AND PARTNERS SOCIAL TOURS

Enora Le Flao, ISBS 2018 Conference secretary, provides advice to delegates and their partners

PRE-AND POST-CONFERENCE TRAVEL AND TOUR OPTIONS

We have teamed up with the AUT travel agent and Tourism New Zealand to arrange some custom-made personal tour packages, which you can enjoy either before or after the conference.

Examples are:

- Auckland and Northland Golf itinerary
- Auckland – Queenstown itinerary
- Auckland Rotorua Queenstown itinerary
- Marlborough fact sheet
- Queenstown fact sheet and tour
- Rotorua itinerary
- Hobbiton tour

Partners attending the conference may wish to participate in the following half-day tours (additional cost)

- Auckland museum—<http://www.aucklandmuseum.com/>
- Eden Park guided tour—<http://www.edenpark.co.nz/>
- Auckland Jet Boat Tours—<https://www.aucklandjetboattours.co.nz/>
- Whitewater Rafting—<https://wero.org.nz/>
- Bungy jumping, Auckland Harbour Bridge climb, Sea Kayaking, Waiheke wine tour etc.

For more information or to book your tours and travel please contact Orbit World Travel email: aklevents@orbit.co.nz



GYM ACCESS

For all conference delegates and partners, we offer a NZ\$20 week membership to our AUT City Campus gym. You will be able to purchase gym membership when you register.



ISBS 2018 Conference—Auckland New Zealand

EVENTS AND INDUSTRY PARTNER PLAYING FIELD

Discover our Industry Partners Programme led by Kelly Sheerin.



KIWIANA OPENING RECEPTION & INDUSTRY PARTNER PLAYING FIELD EVENTS

The Kiwiana opening will include interactive events and games, and “Kiwi” items of note. The industry partners are actively involved in the conference, providing workshops, interactive events, games, and support of conference activities and delegate eco-friendly items.

VICON Darts Interaction Programme

The ISBS2018 conference Platinum Industry Partner, VICON, has supported a world first Darts Biomechanics Programme with AUT SPRINZ.

Graeme Lowe (The Doctor Pro Circuit darts player) has had regular biomechanics analysis and technique interventions from March to August 2018 leading up to the ISBS2018 conference in Auckland.

At the ISBS2018 Kiwiana & Industry Partner Playing Field opening reception interactive event, Graeme will be on stage showing his technique. A video will play on the large atrium screen showing Graeme’s biomechanics programme work over the six months, and his improvement in performance via the use of applied biomechanics.

Graeme will also be throwing the winning darts at the ISBS2018 Jigsaws to select the winners on the night (each delegate gets a jigsaw piece in their delegate bag, and puts their piece into one of the 12 jigsaws, which is then mounted on the dart board for Graeme to throw at with his right hand, left hand, and then blind folded. The ISBS President, Vicon CEO, and ISBS2018 delegates will also throw darts to help determine prize winners as the puzzles are completed.

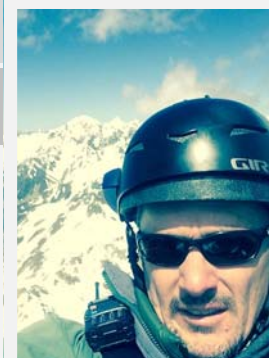


We look forward to you engaging with our additional industry partners during the playing field events including:



ISBS 2018 Conference—Auckland New Zealand

SPORTS PERFORMANCE INNOVATION FORUM & SHOWCASE



Brian Russell, founder of Zephyr Technology, recently returned to New Zealand from America, will be chairing the sports performance innovation forum.

SPORTS PERFORMANCE INNOVATION FORUM AND INTERACTIVE SHOWCASE

Auckland University of Technology, AUT Millennium, Auckland Tourism Events and Economic Development, High Performance Sport New Zealand and Callaghan Innovation have partnered to establish the Human Performance Innovation Centre. Five key areas provide opportunities for research through the centre: materials (textiles and composites), data, devices, nutrition and cognition. For example, AUT Start-up Avice has developed a wearable that measures changes in muscle density, to enhance and speed up muscular development. The technology motivates you with real-time feedback. www.avicewearables.com.

Presenters in the Friday forum and showcase will include Professor Thor Besier, co-founder of IMeasureU, who will overview the process of taking the biomechanics load measurement idea to commercialisation.

Delegates will then have the opportunity to interact during the showcase session with the latest sport and digital performance innovations and materials that are coming to market.

POP-UP NZ STORES AND AUT RESEARCH TESTED PRODUCTS

To showcase how AUT research units work with industry in product testing, there will be a daily pop-up store (e.g. Skinergeniics by Carissa Hawes, NZ made range of organic skincare products) and products supplied (e.g. Chainui tea and “famous in Australia and NZ” Anzac Biscuits) during the conference.



Internationally renowned New Zealand Sileni wines will be provided during conference events. In ancient Greece the Sileni were companions of Dionysus, the god of wine, vineyards and theatre. When there was something to be celebrated, the Sileni were always on hand to encourage enjoyment of delicious food, great wine and social interaction. Named in their honour, Sileni Estates produces a range of wines made to be great collaborators, with a talent for enhancing flavours and textures.



EXAMPLE AUTM APPLIED SESSIONS

Applied Swimming Biomechanics - A demonstration of velocity and drag measures during active swimming. Synchronised data and video will then be used to determine possible interventions and feedback.

Cycling Biomechanics - Forces and Physiology - Provide a brief introduction on how pedalling style/technique can influence energy cost and joint loads along with a lab based assessment.

Utilising Biomechanics in Track and Field Throwing Events – A practical demonstration of 3-d Biomechanical analysis and how it can be used to improve throws performance.

The Impact of Innovation on Biomechanics – A practical demonstration of some biomechanical innovations that HPSNZ have undertaken and how they have impacted performance.

Sprint and Strength Biomechanics – An interactive session looking at the practical use of force plates around sprinting performance and rehabilitation.

ISBS 2018 SOCIAL MEDIA PROGRAMME AND STUDENT REPRESENTATIVE

SPRINZ PhD student Josh McGeown is leading the conference social media programme (i.e. [@ISBS2018](https://twitter.com/ISBS2018); [#ISBS2018](https://twitter.com/ISBS2018)). Josh is also the local conference organising committee student representative, ensuring the academic and social events will be outstanding experiences for the student delegates.

