In this issue

Message from the President

Hiroyuki Nuno
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Dear ISBS members,

The fourth annual ISBS Online Symposium ran successfully. I much appreciated the efforts of all the speakers, chairs and organisers, in particular Tim Exell, VP Conferences and Stuart McErlain-Naylor, VP Publications. Also, I extend my appreciation to our Society sponsors, Delsys, Qualisys, Simi, and Vicon for their support of the symposium and the ongoing activities of ISBS. I understand due to the differences in time zones, some members found it difficult to attend several sessions on time. However, all sessions were recorded, and the videos are available to members. Please access via the ISBS website. I would like to leave the details of the online symposium to Tim Excel who also has an article in this newsletter.

The next upcoming meeting is the 42nd Annual Conference in Salzburg from the 15th to 19th July 2024. The conference is hosted by the Paris Lodron Universität Salzburg, 1km south of the city centre. Herman Schwameder and his team are working very hard at the moment. They have received more than 300 paper submissions, which they are currently processing to notify all authors by the end of April. To date, they have received about 100 registrations for the conference, so they would like to remind all authors that at least one author of each accepted paper must register for the conference during the early bird period that ends on the 14th May 2024. It is mandatory to present the paper for it to be published in the conference proceedings. Please do not miss the deadline.

They are offering three pre-conference workshops: Statistical Parametric Mapping (SPM) by Todd C. Pataky and Mark A. Robinson,

(Continued on page 3)
Message from the President

Hiroyuki Nunome

...Machine Learning by Marion Mundt and Sina David, and Functional Data Analysis by Drew Harrison and Edward Gunning. More information can be found here. If you have already registered and are interested in attending one of the workshops, please contact Lucas Hoeschler (lucas.hoeschler@plus.ac.at) to register.

See you soon in Salzburg!

Hiroyuki Nunome
President of ISBS

ISBS 2024 Election Candidates

Dear ISBS Members,

I am pleased to announce the nominations (on the following pages) for the Board of Directors of the society. We are really fortunate to have such excellent candidates for these important positions. Thank you very much to all candidates.

Everyone will be asked to vote for ONE President Elect, ONE Student Director and up to TEN Professional Directors for the society's Board.

Current members should have received an email with a link to the election. If not, please contact secretary-general@isbs.org

Voting will remain open until 24:00 Australian Eastern Standard Time on May 20, 2024.

Peter Sinclair (Secretary General)
Candidates for President-Elect

Ina Janssen
Dr Janssen is a sports biomechanist at the Netherlands Olympic Training Centre. Her daily responsibilities encompass a spectrum of biomechanical support services, ranging from ACL screening for junior handball players to measuring rotations in Olympic snowboarders and testing different prosthetics for long jumpers. A Fellow of ISBS, from 2019-2023 she was VP of Research & Projects and helped facilitate initiatives such as the DEI committee, Women’s Circles, Mother’s Café and Women in Sports Biomechanics events. She would like to continue serving the society by strengthening the bridges between biomechanical research and practical applications and advocating for gender equity.

Wolfgang Potthast
Global political and financial events pose challenges for all interest groups. For scientific societies like ISBS, these challenges include diversity and equality of minorities and human rights and removing socioeconomic barriers to participation in scientific events. As a globally active and cosmopolitan scientific society, we are challenged to conduct high-quality science and bridge the gap, whilst meeting these arising social tasks. I would like to use my many years of experience as chairman of the Footwear Biomechanics Group, president of the German Society for Biomechanics and ISBS executive board member to serve as president of ISBS in addressing these tasks.

Candidates for Professional Directors: 2024 - 2026

Alexandra Atack
Alex is an Associate Professor in Biomechanics and Research Lead for the School of Sport, Exercise and Applied Sciences at St Mary’s University, UK. Having been a member of ISBS since 2014 she has embodied the ISBS ethos of translating biomechanical research to applied practice and presented at numerous conferences. Having completed two terms on the ISBS Board to date, she is keen to progress a number of initiatives she has been heavily involved in (centred around Teaching and Learning and Womens’ mentorship). Additionally, she is seeking opportunities to develop the Society’s relationships with our sponsors and other associated organisations.

Ming-Sheng (Matt) Chan
Dr. Ming-Sheng (Matt) Chan is the Manager of Performance Science for the San Francisco Giants. He synergizes baseball analytics, sports science, and biomechanics to maximize baseball talent. Originally from Taiwan, Dr. Chan earned his Ph.D. in Biokinesiology, concentrating in biomechanics from the University of Southern California. His dissertation merged neuroscience and biomechanics to investigate altered loading patterns in individuals post-ACL reconstruction. With a passion for bridging the gap between academic research and practical application, Dr. Chan is dedicated to fostering collaborative opportunities between academia and professional sports, leveraging his extensive background in both fields to benefit society at large.
Candidates for Professional Directors (Cont.)

Bryan Christensen

I am a Professor in the Department of Health, Nutrition, and Exercise Sciences at North Dakota State University, North Dakota, USA. I am finishing my first term on the Board of Directors. I enjoy serving to ensure ISBS continues as a strong professional organization for sports biomechanics professionals. As a member of ISBS since 1997, I have presented at many conferences and served on several committees. ISBS has had a major impact on my professional development throughout my academic career, so I want to continue giving back to ISBS by serving as a Board of Directors for another term.

Kat Daniels

Kat Daniels is a Senior Lecturer in biomechanics at Manchester Metropolitan University (UK) and previously Head of Biomechanics at Sports Surgery Clinic Dublin. She has experience of sports biomechanics in both academic and clinical sports rehabilitation environments and is passionate about advancing the impact and visibility of the field, as well as supporting and promoting the achievements of women in sports biomechanics. Her research is focused on the mechanics and control of change-of-direction tasks and other locomotor manoeuvres, including implications for injury, rehabilitation and performance. Kat is standing for re-election as an opportunity to continue supporting the ISBS scientific community.

Cheng Tu Hsieh

As a distinguished professor at California State University-Chico, I have dedicated my career to advancing knowledge in biomechanics and sport performance. With a robust track record of publications and presentations, I bring expertise and innovation in teaching and learning of Biomechanics at both the undergraduate and graduate levels. With prior service on the board for two terms and contributions to multiple committees, my dedication to ISBS's success is evident. Fostering collaboration and driving impactful scientific endeavors within our society are passions of mine. Your support is vital as we continue to lead and advocate for our collective vision.

Gerwyn Hughes

Gerwyn Hughes is an Associate of Professor in the Kinesiology department at University of San Francisco. He has worked in higher education in both the UK and USA for over 15 years. He regularly attends the ISBS annual conference and has served as an Associate Editor for Sports Biomechanics, the journal of the society, since 2013. Gerwyn is keen to contribute his experience and expertise to further the society’s mission of advancing the field of biomechanics in sports.

Kristof Kipp

Kristof Kipp is an Associate Professor in the Program in Exercise Science at Marquette University in Milwaukee, Wisconsin, USA. His research interests focus on high force/impulse sports and activities, such as weightlifting, throwing, and jumping tasks. Kristof was a co-host of the ISBS 2023 meeting in Milwaukee. He hopes to use that experience to help ISBS and future conference hosts to continue to provide high quality events that align with the mission of the society and serve its membership.
Candiates for Professional Directors (Cont.)

Silvio René Lorenzetti

Silvio is currently Prorector for R+D and heads the performance sport section at the Swiss Federal Institute of Sport Magglingen. In May, he will heading the department MPS within the School of Engineering, ZHAW, Switzerland. The Department includes four institutes and about 250 collaborators. He is also a private docent at ETHZurich, Switzerland. His project "digital twin", funded by the Swiss National Foundation, is related to modeling and imaging in the area of strength training and is ongoing. After serving as treasurer and director, he would like to continue to support the Society towards inclusion, empowerment, and network.

Andrew Lyttle

Andrew is currently Biomechanics National Network Lead at the Australian Institute of Sport, a system-wide role working with Biomechanists within the high-performance sport system. He was previously Lead Sports Biomechanist at the Western Australian Institute of Sport (19 years) and worked across many sports, notably Athletics and Swimming. In addition to various leadership roles within Australian sport, he has co-created and implemented numerous research and technological innovation projects. Included is work on swimming computational fluid dynamics through to markerless motion analysis techniques; with a focus on bridging the research or technology spheres to daily training environment.

Zhanxin Sha

Zhanxin Sha is currently working at Lebanon Valley College. I have worked closely with the college football and track and field teams to conduct interdisciplinary research. My research interest includes sports biomechanics and neuromuscular performance analysis. I have been an ISBS member for many years. If I were a member of the Board of Directors, I would contribute to the ISBS Society and serve its members to my utmost ability.

Yu Song

I am Yu Song, an assistant professor in the Department of Health, Sport, & Exercise Sciences at the University of Kansas. My research interests are using biomechanical approaches to understand ACL injury/re-injury mechanisms in sports. I have been an active member since 2019 as a student and have consistently been involved in several ISBS sub-committees. From a student to an earlier career scholar, I am enthusiastic about bringing my empathy to help and serve. I will represent and support the ISBS memberships and oversee the decisions made by the Executive members of society as one of the Board of Directors.

Wen-Tzu Tang

Wen-Tzu Tang earned her PhD degree from the U of Texas, Austin, 2002. Currently, she serves as the Dean of Athletics College and the Graduate Institute of Coaching Science professor at National Taiwan Sport University and has provided sport science services as a sport science committee for the Taiwan National Teams of the Olympic Games and Asian Games since 2002 and a ISBS member since 2016. She holds the positions of President-Emeritus of the Asian Society of Sport Biomechanics and Taiwan Society of Biomechanics in Sports to support the development of sport biomechanics certificate and the career market for students.
Mark Walsh

My name is Mark Walsh. I am currently a Professor at Miami University, in Oxford, Ohio. I was awarded my PhD. From the German Sport University of Cologne. My first ISBS meeting was in 1993 (Amherst Massachusetts) where I was the corecipient of the Young Researcher Award. I have since attended most ISBS meetings and hosted the 37th ISBS conference at Miami University in 2019. Outside of my research I also coach pole vaulters. The ISBS has been an important asset for me over the past decades and I would like to give something back by serving on the BOD.

Chia-Ling Chen (Jalin)

I am Chia-Ling Chen from National Taiwan Normal University, and I am honored to be considered for the role of Student Director within the International Society of Biomechanics in Sports. My journey in biomechanics and sports has been profoundly inspiring, highlighting the crucial role of research in athletic success and safety. If given the opportunity, I aim to humbly support our community by facilitating connections between emerging researchers and seasoned professionals. I am committed to contributing to our society's efforts in promoting research and education, and I look forward to learning from and with all of you.

Toshihide (Toshi) Fujimori

Toshihide (Toshi) Fujimori is currently a PhD candidate at the Graduate School of University of Tsukuba. His research interest is the muscle-tendon dynamics during maximum-effort motor tasks. He won the ISBS 2023 New Investigator Award (poster) for his work on the lower-limb kinetics in high jump. He is currently conducting research with a combination of motion capture and portable ultrasound. At the 2023 ISBS conference, he experienced a sense of community, where members from diverse backgrounds freely exchanged ideas, perspectives, and methodologies. He looks forward to actively engaging in keeping our society active and advancing.

Sangyup Lee

I am writing to express my deep interest in applying for Student Board Director position. I believe that supporting the students' research and coordinating diverse opinions and experience among the students are the priority to empower our voices in ISBS. I’ve been working with faculty, athletes, researchers, and corporates while I conducted collaborative project with National Ski team. Through this research, I received the New Investigator Award Silver Medal from ISBS in 2018. With my experiences, I'd love to plan the student symposium or the mentoring session between student mentees and faculty mentors to build collective intelligence in Biomechanics.
Candidates for Student Directors (Cont.)

Ben Lerch

Ben Lerch is a graduate student in the Sports Medicine and Movement Lab at Auburn University under the mentorship of Dr. Gretchen Oliver. He focuses on innovative in-game biomechanical data and sophisticated statistical methods to enhance the understanding of baseball pitcher performance. Ben is published with peer-reviewed journal articles, including a lead-authored piece in Sports Biomechanics. In addition to his academic achievements, Ben also has practical biomechanical translational experience through his work with Auburn Baseball. After completing his master’s degree, Ben will continue his education at Auburn University, pursuing a PhD in Kinesiology as a Presidential Graduate Research Fellow.

Heron Medeiros

I am currently pursuing a master's in Biomechanics at the Federal University of Santa Catarina, Brazil. My research focuses on muscle mechanical adaptations in elite beach tennis athletes' shoulders. With an undergrad in Kinesiology, I interned at the globally renowned University of Calgary, fueling my passion for sports biomechanics research. I have attended all Brazilian Society of Biomechanics conferences since 2019, earning two Young Investigator Awards. Although I joined the 2024 ISBS Online Symposium, I have not yet attended an ISBS Conference. As a student director, I will focus on fostering ISBS initiatives, especially for students from economically developing countries.

Jeromy Miramontes

I'm Jeromy Miramontes. I am completing my Master of Science in Biomechanics with a focus in Sport Science. I am nominating myself for the role of Student Director for the term 2024-2026. Over the course of my graduate program, I have enjoyed learning from my senior professors and mentoring senior undergraduates. I would love to continue extending my knowledge and experience to others in the organization and learning from senior researchers and board members. This would be a great opportunity to further my level of understanding in the field of biomechanics and the application to sports science.

Ignas Palamarcukas

I am currently a second year PhD student under Dr Veni Kong. Like everyone else at ISBS, I am passionate about sports and biomechanics, with a personal interest in resistance training. I have had the opportunity to do not only my undergraduate, but also PhD degrees abroad, which has allowed me to experience different academic and work cultures. Knowing the popularity of the ISBS amongst students worldwide, I would like to continue spreading academic values and helping students get the most out of the society as a student representative/director.

Michael Silvestri

As a student member of the ISBS, I would be extremely grateful to come into this available role as a student director for the 2024-2026 term. As an ISBS student member and a presenter at the Virtual Symposium in 2024 have provided me with a deep understanding of what the ISBS stands for and insights in how we can push the ISBS forward as a society. Currently being a part of a society advisory team, with the Canadian Strength & Conditioning Association, I have experience and knowledge in this capacity that I will be able to bring to the ISBS.
Marvin Zedler

Having had the privilege to present both an oral and poster presentation at last year’s ISBS conference in Milwaukee, I was deeply impressed by the friendly, caring, and professional atmosphere that distinguished it from other conferences I have attended. I particularly appreciated the approachable interactions among students, post-doctoral researchers, and professors. Inspired by this experience, I am eager to contribute to the Society as a Student Director, fostering collaboration and enhancing the supportive environment that I value so much. I will do my best to represent the student perspective within the Society.

Diversity, Equity, & Inclusion Presidential Committee Update

Randall Jensen, Past-President

The Board of Directors is discussing wording for an updating of the ISBS By-Laws to include a Vice President and Standing Committee of Diversity, Equity, and Inclusion. Initiatives of the proposed committee are also being discussed.

For the Mother’s Café of the 2024 Online Symposium, participants discussed a topic titled Baby steps to tenure: Navigating pregnancy and academia as an expecting mum. The session was moderated by Jill McNitt-Gray, Wei-Hsiu Lin, and Alicia Goodwill.

The ISBS Women’s Circle program currently has 11 circles consisting of approximately 60 members. The circle program is very popular with our student and early career members. Additional participation from mid-career or senior members as well as industry members across career stages would be valuable to all involved. A research manuscript on the first round of the Women’s Circle is under review for publication in Sports Biomechanics. Overall survey respondents reported the program to be a valuable use of their time and reported both personal and professional benefits as a result of participating in the program. Furthermore, the program increased their recognition of ISBS as a supportive community and encouraged them to remain ISBS members. Any women interested in participating or providing feedback on the program should contact Crystal Kean Crystal.Kean@canberra.edu.au.

Update from VP Public Relations

Floren Colloud

We warmly thank our four society sponsors – SIMI, VICON, DELSYS and QUALISYS – for their ongoing support of ISBS. They provide important support to the mission of ISBS thorough their quality products and financial support to the Society. We encourage you to consider these fine vendors of sports biomechanics research equipment and software when purchasing or updating your lab equipment.

ISBS is currently affiliated with: the Société de Biomécanique, Japanese Society of Biomechanics, Arab Society of Biomechanics in Sports and European Society of Biomechanics (ESB). This is in addition to our continued association with the International Society of Biomechanics (ISB). These affiliations are an exciting opportunity for all and we look forward to working closely with theses leaned societies to grow the discipline of sports biomechanics.
After an excellent conference in Milwaukee in 2023, plans are well underway for this year’s conference, in Salzburg, Austria on 15th — 19th July 2024. The conference returns to the location of the 2006 conference with many who attended in 2006 planning to attend and be joined by more recent and new ISBS members. This year’s conference is proving already popular with high numbers of early registrations.

Update from the host team of the University of Salzburg

The local organizing team at University Salzburg is eagerly looking forward to hosting ISBS 2024 in Salzburg, Austria. The conference will feature the following highlights:
Geoffrey Dyson Lecture (presented by Jacqueline A. Alderson) | Hans Gros Emerging Researcher Award Lecture (presented by Natsuki Sado) | Six Keynote Lectures | Seven Applied Sessions | Three Pre-Workshops | New Investigator Presentations & Awards

The paper submission deadline has now passed and all papers have received final decisions. If not, please do not hesitate to contact your editor. Conference registration started on March 1, 2024 — please note that registration and payment is a two-step process. Information about the process is available online: https://www.isbs2024.com/wp-content/uploads/2024/03/ISBS_Registration_Guide.pdf. Early conference registration rates will be available until May 14, after which the rates will increase slightly. IMPORTANT information: Accepted papers can only be presented if the presenting author is registered for the ISBS 2024 conference by May 14, 2024! We are now in the process of putting together the scientific program and will soon let everyone know the type of presentation (oral/poster) and the date of the presentation.

The main conference activities will take place at the Faculty of Natural and Life Sciences of the University Salzburg (https://maps.app.goo.gl/bECdp9bTLUMXm4vu8?q_st=ic). The venue can accommodate oral and poster presentations, exhibition booths and cafeteria lunches. Among the many social events, activities are planned such as city tours, salt worlds and various sports activities such as climbing or cycling. The conference banquet will be held at the Stiegl Keller, located in the center of the city just below the Fortress Hohensalzburg.

More information can be found on the conference website: https://www.isbs2024.com/
Also, follow us on Twitter – @isbs_conference – or Instagram – @isbs2024 – for additional details and updates. We look forward to seeing you all at ISBS 2024 in Salzburg this summer.

The ISBS 2024 Organizing Team
ISBS held its 4th Virtual Online Symposium on 7th and 8th of February 2024. The symposium is now is initiative was an opportunity to connect and share research and ideas. ISBS members submitted proposals for session topics and to host sessions, which resulted in 10 sessions over the two days. Sessions included:

**Hit the Ball! (The Biomechanics of Batting, Swinging, and Hitting):** Teaching Biomechanics; Mothers’ Café; Sports Biomechanics in Soccer; Student Spotlight; The Application of AI in Sports Biomechanics Research; Supporting the Paralympic Athlete: Perspectives from Four Sports; Using Biomechanical Analyses to Inform Injury Risk and Performance Considerations in Rugby Union; In-Game Markerless Motion Capture and Its Applicability to Coaches’ Questions and Player Development; Women in Biomechanics: #IAmRemarkable Workshop

**Recordings of Scientific Sessions are now available for ISBS members to watch via the website HERE**

Sessions involved a range of formats including keynote talks, panel discussions, workshops and social discussion. The organisation of the Symposium was a group effort by the Symposium Organising Committee that included members of the ISBS Board of Directors and additional ISBS full and student members. Thank you to all of the organising committee for confirming speakers, providing technical support for sessions, organising the publicity/social media, and to the ISBS members and affiliates who suggested topics and participated as speakers.

Organising committee:

Tim Exell, Stuart McErlain-Naylor, Erin Feser, Eddie Bradley, Ezio Preatoni, Glenn Fleisig, Katherine Daniels, Kristof Kipp, Molly Goldacre, Bryan Christensen, Daniel Williams, Raihana Sharir, Enora Le Flao, Steffi Colyer, Silvio Lorenzetti Crystal Kean, Pui-Wah Kong

**A huge Thank You to all the Symposium sponsors who helped to make this a success!**
ISBS Awards 2024

Steffi Colyer, ISBS Vice-President (Awards)
University of Bath, UK

Geoffrey Dyson Award

We look forward to hosting Professor Jacqueline Alderson’s 2024 Geoffrey Dyson Award Lecture at the Annual Conference in Salzburg this July. The prestigious Geoffrey Dyson Lecture is an invited presentation given by scientists who have made an outstanding contribution to the Society, and to our field. Professor Alderson is Co-Director of the UWA Tech & Policy Lab, a 2023-24 Fulbright Senior Scholar and Professor of Biomechanics at the University of Western Australia. Throughout her distinguished career, she has authored 250+ publications and technical reports in the fields of biomechanical modelling, wearable technologies, applied machine learning, injury prevention, and pro-public technology development. In addition to this, she is an active member and Fellow of ISBS and has served consecutive terms as an Executive Council member of ISBS. Professor Alderson’s Dyson Lecture will be entitled “Biomechanics in the age of AI: Navigating a discipline at a crossroads” and promises to be a fascinating and inspiring session to open the conference!

New Investigator Award

We are also very much looking forward to seeing some of the Society’s leading new researchers presenting in person at the New Investigator Award sessions at the conference again this year. Our judges have been working incredibly hard to review all of the papers submitted for this award and we have finished the shortlisting of the top applicants in each of the oral and poster categories. These presentations will take place in specific sessions at the conference to determine the winners of this prestigious and long-standing ISBS award. Please keep your eyes peeled for these sessions on the conference programme and come along to show your support for our new investigators.
We are delighted to announce that the 2024 Hans Gros Emerging Researcher Award recipient will be Dr Natsuki Sado from the University of Tsukuba, Japan. Dr Sado will deliver an award lecture at the 2024 conference, entitled “Biomechanical inter-relationships between physical and motor features in maximal effort locomotion: Insights into individually optimized strategy”, which we are sure will showcase his extensive work in the area of human motor performance and the physical underpinnings.

Call for Future Award Nominations

As communicated on the website and via email to members, now is the time for you to propose candidates for the 2025 Geoffrey Dyson Award Lecturer. It is also the time for you to propose candidates for Life Members of ISBS and Fellows of ISBS. These are all extremely prestigious ISBS awards and we would ask you to think carefully about any colleagues who you feel may be deserving of these awards. The criteria for each of these awards are available at www.isbs.org/awards. Any nominations must be forwarded to vpawards@isbs.org by 30th April 2024. Only nominations forwarded by this date will be considered by the ISBS awards Committee for 2024, and successful candidates will be announced at this year’s Conference in Salzburg. Please contact vpawards@isbs.org with any queries.

The ISB World Athletics Award For Biomechanics

This year we are hosting the International Society of Biomechanics (ISB) World Athletics Award for Biomechanics. This award was first presented in 2021 at the ISB Congress, and ISBS are delighted to be hosting the award every other year. The eligible papers within this year’s topic of ‘throwing’ are currently undergoing a thorough review process by members of ISB, ISBS and the Journal of Applied Biomechanics, and we look forward to seeing the winning paper presented in Salzburg at the 2024 conference.
Over the last year the Teaching Initiative coordinators have sought to continue to provide a range of activities to support those involved in teaching Sports Biomechanics. Since the last newsletter we have held three online sessions consisting of a series of lightning talks and presentations from academics sharing their experiences of teaching Sports Biomechanics, as well as some apps for use within biomechanics teaching (details below). Additionally, we were really excited to host a panel discussion on the key employability skills of graduates moving into a variety of roles within the sector at the annual conference in Milwaukee. It was fascinating to hear the similar experiences of the panel members as well as some of their contrasting views on what our graduates may lack when moving into employment - certainly food for thought!

Looking forwards, we are supporting the applied session at this year's annual conference:

15-19 July, ISBS Annual Conference - Teaching Biomechanics Applied Session
Professor Duane Knudson and Professor ChengTu Hsieh will be hosting an applied session as part of the annual conference programme. Attendees will have the opportunity to learn about and try some novel, active learning methods for teaching biomechanics in the classroom. Please register your interest in this session during the conference registration process.

We would like to thank the 500+ people who have shown an interest in one of the events we have hosted so far, and in particular those who have volunteered to present or share their own experiences. In order to continue with this successful initiative we do really need your help though. Therefore, if you are interested in either taking part in a future session, have an idea for a different activity or would be able to help with some of the organisational aspects please do get in touch with Alex, Stuart or Crystal on the details below.

Alex Atack - alexandra.atack@stmarys.ac.uk
Stuart McErlain-Naylor - s.a.mcerlain-naylor@lboro.ac.uk
Crystal Kean - crystal.kean@canberra.edu.au
**Online Symposium Recap**

The ISBS Online Symposium 2024 had two initiatives which provided student members with the opportunity to grow as researchers. The Online Student Mentor Program allowed 15 student members to learn and network with senior ISBS members. Also, the Student Spotlight Session saw 4 students present and share new, exciting sports biomechanics research (see below). Thank you again to all members (student + professional) for engaging with these initiatives. We hope you had a positive experience and gained something from them.

![Symposium Images]

**New Student Director for 2024-2026**

The ISBS 2024 Conference in Salzburg will draw to a close my (Molly’s) term as Student Director. This opportunity to represent the students on the Board of Directors has been incredible and I would like to extend a warm thank you to everyone for their support. To the Executive Board, the Board of Directors, the other Student Directors over the journey (Steph, Evan & Daniel), and most importantly the students thank you for your encouragement and engagement throughout my term.

With Molly’s term coming to an end this summer, ISBS have collected potential candidates for the role of Student Director. Details of the candidates and how to vote are towards the start of this newsletter. We cannot wait to welcome a new student to the team to work alongside Daniel and bring new ideas and initiatives to the society!
Student Section (continued)

Salzburg 2024

We are looking forward to seeing many of you at the upcoming conference. There will be a number of student specific items on the agenda and we are excited for you to engage with them. If you are planning on attending here are some things to take note of:

1. **Student Mentor Program**—If you register for the Student Mentor Program, you will be paired with a professional ISBS member with whom you can talk all things biomechanics, careers and more. Further details can be found in the section below.

2. **Student Social Event**—Make sure you attend this! These events allow all ISBS students to get together in a friendly, relaxed setting. It is great way to meet new connections in a similar situation as yourself.

3. **Student Grants**—Consider applying for the Student Research Grant to help fund your research projects and the Student Travel Grant to support your attendance in Salzburg.

4. **Keep your eyes on the WHOVA app**: In the lead up to the event we will be posting the WHOVA app to help people introduce themselves pre-conference. It will also be where we organise informal dinners and meetups throughout the conference in Salzburg!

5. **ISBS Social Media and Website** – Keep an eye out for news and updates leading up to and during the conference so you don’t miss anything.

6. **Most of all, enjoy the opportunity**: The ISBS community is a warm, friendly, and welcoming group of people so don’t stress and enjoy yourself.

**Student Mentor Program**

As mentioned above, the Student Mentor Program will return at this summer’s conference. This is a main-stay at ISBS conferences and each year allows meaningful discussions to be had between student mentees and professional mentors. We encourage you to engage with this initiative and we have both previously had great experiences learning from and networking with more senior ISBS members.

**How to participate:**

If you wish to attend, please indicate when you register for the conference that you would like to participate as a mentee. You will be matched with a mentor and will meet during lunch on Wednesday the 17th. The deadline for registering is July 1st.

If you have any questions regarding anything in this student section please contact Molly or Dan. We are happy to talk anything through.

Best wishes,

Molly and Dan

@mollygoldacre; molly.goldacre@research.uwa.edu.au

@danjwilliams99; daniel.williams@uksportsinstitute.co.uk
Dear ISBS student members,

The student mentor programme has been a component of the annual ISBS conference since 2012. This programme presents an excellent opportunity for ISBS student members to meet with experts in the sports biomechanics field. Students who have participated in the mentoring programme in the previous years have found it to be a valuable part of the conference and have made excellent contacts (see the October newsletters from 2013-2023).

Each year, we do our best to match mentors and mentees based on their research interests and this year will be no exception. Mentors who take part in the programme come from a range of biomechanical backgrounds and are open to discussing your research, career aspirations, or sharing their experience with you. Last year in Milwaukee, a total of 35 students participated in this program.

How to take part:

Participation in the student mentor programme is free of charge. Mentees and mentors will meet at ISBS2024. To participate, please indicate during conference registration that you would like to participate as a mentee or a mentor and your areas of interest. Priority will be given to student members that are new to the programme but we will endeavour to include all interested students.

I hope to see many of you in Salzburg!
Many thanks to ISBS for funding MSc student Alexander Joyce to undertake a project based at Manchester Metropolitan University Institute of Sport. The project was focused on the effect of task constraints on the mechanics of change of direction (CoD) manoeuvres, aiming to understand how the dual requirements of changing body orientation and direction of travel while running interact to influence knee joint loading. Alex assisted with motion capture and ground reaction force data collection from healthy adult participants performing CoD manoeuvres both with and without body rotation towards the new direction of travel. Change in direction of travel (deflection angle) during the CoD was monitored ‘live’ to allow us to experimentally control for this important confounding variable.

An abstract for the internship project has been accepted for presentation at ISBS Conference 2024 in Salzburg and we look forward to discussing the findings with the sports biomechanics community. Differences in tri-planar knee angles and moments were evident even when deflection angle during stance phase was controlled: CoD manoeuvres without concomitant body rotation had greater peak abduction angles, peak abduction moments and peak internal rotation angles, suggesting that this technique may be associated with greater ACL loading for a given approach speed and deflection angle. Perhaps most interestingly, we also found that we had to substantially adjust the positions of the target cones defining the exit direction for the different technique conditions in order to achieve comparable deflection angles, which suggests that experimental standardisation of CoD angles simply using floor markings/cones/timing gates would be expected to lead to systematic differences in ‘actual’ CoD angle when different techniques are compared. Given the known independent effects of CoD angle on lower-limb joint mechanics, we thus suggest that deflection angle is monitored and reported in any experimental or clinical context for which interpretation of results may be confounded by these differences.

The Internship Grant funding came at the perfect time for Alex, who was looking to obtain more practical experience and research skills in biomechanics before completing his Masters degree. He plans to pursue a career in sports biomechanics and is currently applying for graduate research programmes and positions to enable him to pursue these ambitions. The data collected for the project have been used for several additional pilot analyses in addition to the main internship study so will facilitate substantial further research into the mechanics and control of CoD manoeuvres. We are extremely grateful to ISBS for the award of the Internship Grant and strongly recommend it to other members as an impactful mechanism for supporting biomechanics research and student development.
We were very pleased to be awarded an ISBS internship grant, which allowed Michelle Lyons, a second year undergraduate Applied Sports and Exercise Science student to work on our study in 2023 to assess the agreement and reliability of gait metrics measured using the Stride Smart system in the AlterG treadmill compared to the Xsens system.

The anti-gravity (lower-body positive pressure) treadmill (AlterG) was designed in 2009 with the assistance of the National Aeronautics and Space Administration (NASA) to mimic the effects of reduced gravity. AlterG treadmills are used for rehabilitation in clinical populations as they can provide up to 80% bodyweight support. Typically, the patient or athlete’s gait spatiotemporal variables are assessed independently before and after the training intervention on the anti-gravity treadmill. The AlterG treadmill has its own system (Stride Smart Gait Analytics) for measuring basic gait variables when the athlete or patient is on the treadmill. This is advantageous as the differential air pressure chamber that reduces the loading on the lower limbs obscures the view of the lower limbs, which makes it difficult to measure gait metrics while the participant is training on the treadmill. There has been no research to assess the agreement and reliability of the Stride Smart Gait Analytics system. Therefore, the aim of this study was to compare the gait metrics measured by the Stride Smart Gait Analytics system in the AlterG treadmill to the Xsens system.

17 healthy adults walked on an AlterG treadmill at 3km/h and 4 km/h at 4 bodyweight conditions (100, 75, 50, 25%) while wearing Xsens sensors, repeating this session 7.0 ± 0.7 days later. Gait metrics were calculated using the Xsens motion cloud software, and by the treadmill using the Stride Smart system. Agreement and between-session reliability for the Stride Smart Gait metrics were assessed. Stride Smart gait metrics were reliable and showed good agreement for 100 and 75% bodyweight but not for 25% bodyweight compared to the Xsens system. Therefore, clinicians should only use gait metrics at ≥75% bodyweight to assess progress in rehabilitation when using the Stride Smart system on the AlterG treadmill.

Students perspective – Michelle Lyons
The opportunity to see a research project from inception to fruition has been a valuable and illuminating experience that has helped me with my undergraduate dissertation and the preparation for a Masters in Research (MRes). From developing the protocol, seeking ethical approval, data collection and analysis to writing the paper, the experience has increased my confidence regarding a career in applied biomechanics research. Notably, the challenges we faced when collecting the data during the hottest months of the year illuminated issues with the AlterG treadmill. We overcame those issues by opening the chamber to cool down the treadmill. I increased my familiarity with the Xsens system beyond what was covered during my degree. Overall, the Internship Grant allowed me to gain insight into a research project's life cycle and the challenges it can bring.

We will be presenting this study at ISBS Conference 2024 in Salzburg.
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