merican Society of Biomechanics





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Newsletter

Volume: 28 - Number: 2, December 2015

From the President Paul DeVita

Dear Friends and Colleagues,



My previous newsletter article was titled, "Let's Move Back To Advance Biomechanics," and I am happy to announce that we are now taking a step backward to advance Biomechanics.

Biomechanics education occurs almost exclusively at the university level. Our backward step involves broadening the exposure of Biomechanics to more high school students through National Biomechanics Day (NBD). NBD was created to increase the impact of Biomechanics science and practice on the human experience. The long term goal of NBD is to incorporate Biomechanics into high school curricula across the country. We envision a time when high school students can choose among math, history, biomechanics, chemistry, physics, and more. Biomechanics is placed in the middle of this list because it will be as standard as any other discipline. When Biomechanics advances by stepping back from a university-initiated to a high school-initiated discipline, more people will receive training in biomechanics, more people will enter university with an appreciation of biomechanics, and more people will ultimately choose to do biomechanics in any of its many manifestations as a career endeavor. Some will choose to do Biomechanics science but just as meaningfully others will choose to use biomechanics in medical, commercial, industrial, and performance based careers. To paraphrase Neil Armstrong, one backward step for ASB, one giant leap for Biomechanics.

NBD will be a unified and synchronized celebration of Biomechanics among all participating laboratories. We will all work together on April 7, 2016 and demonstrate Biomechanics to high school students, teachers, and parents. Of course many of us have demonstrated the Biomechanics experience to high school and even younger students before. We hope that our nationwide celebration however will enhance the educational experience that any individual lab can create. Our first call for participants produced 38 volunteers from Biomechanics Labs around the country. Our second call was distributed to all ASB members on December 1 and we hope to double, triple, quadruple...the number of participating labs. Please consider volunteering your lab and time to participate in National Biomechanics Day. [Editor's note: As we go to press, 73 labs have registered.]

While we are presently formulating the exact plan for NBD we do know it will include these elements: 1) a welcoming video message from the NBD Organizing Committee for all participating labs, 2) videos demonstrating the use of Biomechanics in commercial and academic settings, 3) Biomechanics demonstrations within each lab, 4) pre-NBD and post-NBD educational materials for high

Continued on page 3...

Student's Corner Amy Lenz

Greetings from Michigan where the entire fall semester has flown by without more than a dusting of snow. Compared to last year, this feels like an eternal summer with temperatures occasionally popping into the 50-60s. Since it still feels like





Student opportunities for networking were numerous at the Women in Science breakfast, the Diversity breakfast and the Student Career Round Table Event. The Student Career Round Table Event was an astounding success with over 150 students attending the event with 10 different career tables providing a variety of experts in their fields of biomechanics within industry, academia, research and more to discuss with in this informal setting. Please contact me with feedback and suggestions for this year's student career event. I received a lot of positive interest for an informal opportunity to network and gain professional advice in this type of setting again. For more details on the Women in Science breakfast and Diversity breakfast, be sure to read the Diversity Comittee article by Kristin Zhao on page 20.

The Students' Night Out event was in full swing at the conference with well over 250 students in attendance. This college setting provided a casual event for students at Brother's Pub in the heart of the OSU campus. Students gathered to network, reunite with old lab mates and meet new friends over appetizers and drinks. Thank you to all the students who attended and brought friends to the event to make the turnout a huge success. For this year, I will be sure to have more food for the outstanding turnout of students wanting to enjoy this night of the conference.

As we look forward to the 40th Annual Meeting of the American Society of Biomechanics in Raleigh, NC, any suggestions or comments on the previous events would be greatly appreciated. Please email me at lenzamy@msu.edu if you have any thoughts regarding the Student Event, Student Mentoring Program, Women in Science breakfast, Diversity Events, Student Night Out, or any other matters relevant to students in ASB. These events are made to provide social networking, professional development and educational growth for the students of ASB. Therefore, all of your input helps to continuously improve these events for years to come and to ensure students are gaining all they can from the ASB experience. If you are interested in getting involved with ASB, please consider volunteering to be part of this committee which serves the students. I wish you all happy holidays, including a restful break from classes.



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Advertising in the Newsletter

The Editorial Board invites businesses that have products or services of interest to members of the Society to advertise in the ASB Newsletter. Advertising space may also be purchased for job postings or other special announcements.

The current advertising rates are as follows:

1/4 page--\$100 1/2 page--\$200 full page--\$400 back page--\$600

If you are interested in learning more about advertising in the ASB newsletter, please email Dan Gales:

DGales@lhup.edu ASB Newsletter



ASB Involvement

If you are interested in becoming more active in the Society (e.g., serving on a committee or chairing an annual meeting session), contact Stacie Ringleb, Secretary/Membership Committee Chair, with your name, address, phone/fax number, email address, and your desired involvement. This information will be included in a database which is periodically updated and distributed to the Executive Board.

Back Copies of the Newsletter

All previous ASB newsletters have been converted into pdf documents and are archived on the ASB website.

From the President (cont.) Paul DeVita

school students and teachers, 5) relevant information on the ASB website, and 6) fun. Participating labs will recruit student and teacher visitors from local high schools to come to these labs for about 1.5 hours on April 7, 2016 and to experience and participate in Biomechanics.

The Organizing Committee will contact all volunteers in December and January with educational materials, suggestions for recruiting local visitors, and general instructions for the Day's activities. We are very grateful to all volunteers and we hope to all work together to make National Biomechanics Day a wonderful experience for everyone. The Organizing Committee is Jill McNitt-Gray, Janet Dufek, Cynthia Bir, Matt McCullough, Brian Davis, Brian Tracy and me.

NBD is presently sponsored by generous gifts from Nike through its Nike Sports Research Lab and Motus Global.

The ASB Executive Board and I wish everyone a happy holiday season and a happy and successful new year. We are grateful for the opportunity to serve you and the Society and we thank you for placing us in this role. Please do not hesitate to contact me if you have any questions or ideas for the ASB. Onward and Upward (in addition to backward).



National Biomechanics Day, April 7, 2016

Education Committee

I know, it seems like ages ago now, but according to the 367 responses to the ASB2015 Annual Meeting survey, the Columbus, OH meeting was a resounding success. Congratulations to Ajit Chaudhari, Richard Neptune and their teams.



If you are interested in hosting an ASB regional conference, applications for support are due on September 30 each year. ASB regional conferences are student centered gatherings which provide opportunity for graduate students, mentors, and other researchers to network and build collaborations as well as to practice scientific communication in a low key, supportive environment. This year, the ASB executive board decided to support four regional conferences:

• Midwest ASB Regional Meeting, Cleveland State University, Cleveland, OH, February 16-17, 2016

• Human Movement Science and Biomechanics Research Symposium, University of North Carolina, Chapel Hill, NC, February 26, 2016

• Rocky Mountain ASB Regional Meeting, YMCA of the Rockies Conference Center, Estes Park, CO, April 15-16, 2016

• Northwest Biomechanics Symposium, University of British Columbia, Vancouver, BC, June 3-4, 2016

If you are interested in applying for an ASB graduate student Grant-In-Aid (GIA), applications for support are due on January 15 each year. GIAs are to support ASB graduate student members pursuing biomechanics research by offering a source of research funding. The grants are distributed on a competitive basis and are intended to offset the costs directly associated with conducting research (e.g., small equipment items, materials and supplies, and animal or participant costs). If you decide to apply, please make sure to respect the guidelines. You wouldn't want to be disqualified because you went over the maximum number of pages!

In the next month, the education committee will be picking tutorial topics and teaching symposium speakers for ASB 2016. If you have suggestions for tutorial topics and speakers or teaching symposium speakers (self-nominations are more than welcome), please contact me ASAP at Cecile.Smeesters@USherbrooke.ca.

Finally, it is with great pleasure that I can finally let you all know that Kim Bigelow, associate professor at the University of Dayton in the Department of Mechanical and Aerospace Engineering, has been nominated by the ASB executive board as the next Education Committee Chair. She has started learning the ropes and will be officially taking over for me at our annual meeting in August 2016.





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Secretary/Membership Stacie Ringleb

We currently have 893 members. Of these, 531 are regular members, 350 are student members, and 12 are emeritus. Further, as of December 1, we had 267 people (179 regular, 88 student) already renew their membership for 2016. This year, we started to have a drawing for people who renewed their



membership before January 15th. There are three drawings, for people who renew by November 30th, December 15th and January 15th. The winner of the \$60 gift card is Mariusz Ziejewski, professor of Mechanical Engineering at North Dakota State University. If you did not win this gift card, you still have the opportunity to win a \$40 and \$20 Amazon.com gift card, which will be awarded in December or January. [Editor's note: the December deadline has passed.]

We have also implemented a few other changes to the membership database/ application form. In 2015, the membership approved the creation of a diversity committee. To support their efforts, we restructured the demographic information that we collect to match NIH's policy on reporting race and ethnicity. Additionally, we added a category for people to report if they have a disability. These data will be used to help us understand the current diversity of our membership and to help the diversity committee achieve their goals. One way in which these data will be used is to provide a summary of the demographic information within the society to help us attain NIH awards to support diversity travel grants, like the ones that were awarded at the 2015 annual meeting.

Additionally, every time you renew your membership, you will see your affiliation listed. Once I had access to the membership database, I realized that my affiliation was listed as Drexel University, where I received my PhD in 2003. I also checked up on our executive committee members and some of their affiliations were older than mine. It is helpful for us to have current information about your affiliation for at least two reasons. First, as many of you know, my predecessor, Andy Karduna, decided to follow the bylaws and require that each member have two ASB members sponsor their membership. Sometimes, people don't know potential sponsors, so having current affiliations helps me to find people at local institutions who might be willing to sponsor your membership. The second reason why we ask that you keep your affiliation current is because we are currently updating our list of graduate programs in biomechanics, and knowing where our members are working and going to school helps us to identify these programs.

Finally, when you go to purchase your 2016 membership, you will see a link highlighted at the top of the page asking you to update your membership profile in general. Many of us became members when we had a paper-based application. I remember mailing mine to Scott Delp when I was in graduate school. Now that we have an online system, please take a few minutes to copy some stuff from your CV into your membership profile.



Treasurer ^{Karen Troy}

Happy December to all of you! 2015 has been a good year for the ASB – we have tried a few new things, and for the most part, they have worked well I think. Four important changes in our society were: (1) the roll out of a Junior Faculty Research Award, (2) the first dues increase in 10+ years, (3) incentives



like Amazon gift cards for people to actually renew their membership in a timely manner, and (4) the addition of a diversity chair to our executive board.

First, an overview of our society's finances. Our long-term reserve investments, which include investments tied to the Hay Award, total around \$189,000 right now, down about \$2000 since last December. This is pretty consistent with the general market, which has been flat for the last calendar year. Our day-to-day expenses run through our checking account, which has around \$26,000 at the moment. This includes a recent influx of dollars from membership renewals. The only "big ticket" expenses for fall are ASB Regional Meetings. This year we distributed \$7,835 to support four Regional Meetings.

Although membership renewals are our major source of income, we are fortunate this year to have several corporate sponsors. I would personally like to thank Tekscan (a corporate partner sponsor) and Polhemus (a corporate supporting sponsor) for their generous and continuing support of ASB. I am also delighted that our president, Paul DeVita, has arranged a partnership with Nike, who has generously offered to help us cover costs associated with our first National Biomechanics Day this coming April.

Finally, if you have not yet renewed your membership for 2016, NOW IS THE TIME! We decided to give everyone a friendly nudge by raffling off Amazon gift cards for earlybird renewals, and have already distributed \$60 worth of prizes. What does your membership pay for? It funds the Society's initiatives such as the student Grant-in-Aid awards, Regional Meetings, Student Travel awards, career Society awards such as the Borelli and Hay Awards, and our new Junior Faculty Research Award (see page 7). Plus, you get to be a part of one of the best Professional Societies in the country and receive this awesome newsletter!

As always, I thank you all for trusting me with the Society's finances. I am looking forward to reviewing the first round of applications for the Junior Faculty Research Award (due Feb 28, 2016) and have been working with Tammy Bush, our Treasurer-Elect, to transition the position smoothly next summer. Happy New Year to all of you!



- Albert Einstein



ASB Executive Board 2015-16

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From the President, again Paul DeVita

Annual Meetings Past and Future



I wonder if anyone noticed the dominant facial expression at the 39th Annual Meeting of the ASB this past August in Columbus, Ohio? It was the smile. While we have all greatly

enjoyed previous ASB meetings, I think the Society as a whole enjoyed the Columbus meeting to stratospheric levels (i.e. a lot). The energy levels were fantastic and the scientific sessions were exciting and dynamic. While we always have great Biomechanics science at our meetings, we sometimes could have had a few more questions and a bit more discussion at the presentations. ASB 2015 maximized discussion of our work more so than previous meetings and the difference maker seems to me to have been the maturation and extensive use of Thematic Poster Sessions. The Columbus meeting had 14 such sessions each with five presentations. In short, 70 presentations whose main focus was not the presenter but the broad discussion among all people in the room. These discussions were skillfully directly by the moderators to more fully explore the issues raised during each presentation. The maturation of thematic sessions includes the greater skill exhibited by the moderators and the greater awareness by the audience members of their role in these sessions. ASB has used thematic poster sessions to varying degrees the past ten years or so and through these sessions we have learned how to use them more effectively. While we have now reached an excellent standard for these sessions, I am sure we can also improve them in the future. The 2016 annual meeting will have its fair share of thematic sessions and I invite all attendees to attend these sessions ready, willing, and able to discuss the science with the presenter and the audience. In fact, we should strive to ask other audience participants more questions than we ask each presenter.

Well, that's my bias—I like thematic poster sessions. Of course the other elements of the meeting were also wonderful including the six symposia, 13 open podium sessions, the numerous conferences events and science posters, the important exhibitors, and the venue. I highlight the excellent physical space that included a fine integration of posters, exhibitors, lunch, and relaxation areas. All attendees were brought together to interact with each other to everyone's benefit. We thank all the organizers for the many excellent features of ASB 2015: Program and Meeting Chairs Rick Neptune and Ajit Chaudhari, Organizing Committee members Robert Siston and John Borstad, and the Planning/Organizing staff Mike McNally, Greg Freisinger, Jackie Lewis, Scott Monfort, Margaret Raabe, Elena Caruthers, Sarah Schloemer, Andrea Wanamaker, Nicole Harper, Ellyn Ranz, Courtney Shell, and Jon Slowik.

Of course we now look forward to our next annual meeting, ASB 2016 in Raleigh, NC on August 2 to 5. This meeting will celebrate the historical significance of being the 40th Annual Meeting of the ASB. Ok, raise your hand, who has attended all previous 39? I wish I could raise mine but I started attending ASB meetings in Seattle, 1982. ASB 2016 will celebrate the previous 39 meetings and also continue to look to the future of Biomechanics. The meeting will build on previous successes and I am sure it will be exciting and rewarding for all participants. I highlight a new addition to the meeting schedule that relates to National Biomechanics Day, described above in this newsletter. The meeting will have

ASB Executive Board 2015-16

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Past-President

One of the duties of the Past-President is to manage the awards process for the upcoming annual meeting. The American Society of Biomechanics (ASB) awards are listed below. Details for applying for these awards can be found on the ASB webpage.



The Borelli Award

This is the most prestigious honor given by the ASB. The award is named after Giovanni Alfonso Borelli, a mid-17th century Professor of Mathematics from Naples, Italy. He is considered by many to be the father of modern biomechanics. Borelli's major novel contribution, the treatise "On the Movement of Animals," puts forth numerous propositions on the movements and displacements of the limbs of man and animals. The award recognizes outstanding career accomplishment and is awarded annually to an investigator who has conducted exemplary research in any area of biomechanics. The awardee attends the Annual Meeting

of the ASB to receive the award and to deliver the Borelli lecture. The award consists of an engraved plaque and a check for \$1,500. The application deadline is the abstract submission deadline for the 2016 Annual Meeting.

Recent winners are: 2015 Rodger Kram 2014 Vijay Goel 2013 Kenton Kaufman 2012 Carlo DeLuca 2011 Scott Delp



Jim Hay Memorial Award

The Jim Hay Memorial Award for Research in Sports and Exercise Biomechanics was established in 2004 through the support of the Hay family and additional donors to recognize outstanding career accomplishment and is awarded annually to an investigator who has conducted exemplary research in the area of sports and exercise science biomechanics. Jim Hay (1936-2002) was a longtime faculty member at the University of Iowa and Past-President of the ASB. He made significant contributions to our understanding of the biomechanics of many sporting activities. The Hay Award selection is based on originality, quality and depth of the research and the relevance of this work to the field of sports and exercise biomechanics. The awardee must attend the Annual Meeting of the ASB in order to receive the award and to deliver the Jim Hay Memorial lecture. The award con-

sists of an engraved plaque and a check for \$1,000. The application deadline is the abstract submission deadline for the 2016 Annual Meeting.

Recent winners are: 2015 Timothy Hewett 2014 Fred Yeadon 2013 Glenn Fleisig 2012 Jesus Dapena 2011 Joseph Hamill





2015 Award Summary

Borelli Award Rodger Kram, University of Colorado

Jim Hay Memorial Award

Timothy E. Hewett, The Ohio State University



2015 Award Summary

Young Scientist Pre-Doctoral

Rachel L. Lenhart, University of Wisconsin-Madison

Young Scientist Post-Doctoral Award

Jason R. Franz, University of Wisconsin-Madison

Clinical Biomechanics Award

Jarred Kaiser, et al., University of Wisconsin-Madison

Journal of Biomechanics Award

Justin C. Wager and John H. Challis, The Pennsylvania State University

President's Award

Jordan Broadway, Elizabeth Nyberg, Jesse Dean, Medical University of South Carolina

Research Travel Grant

Metin Yavuz, University of North Texas Health Science Center

Past-President (cont.) Darryl Thelen

Young Scientist Pre-Doctoral Award

This award recognizes early achievements by a promising young scientist prior to the award of their PhD. Selection is based upon the scientific quality of the submitted materials. The awardee must attend the annual ASB meeting to present their work in a special awards session. It is expected that the awardee will submit a full-length manuscript for publication in the Journal of Biomechanics. The award consists of an engraved plaque, a check for \$500, and a waiver of conference fees for the annual ASB meeting. The application deadline is the abstract submission deadline for the 2016 Annual Meeting.

Young Scientist Post-Doctoral Award

This award recognizes early achievements by a promising young scientist who is within five years of receiving their PhD. Selection is based upon the scientific quality of the submitted material. The awardee must attend the annual ASB meeting to present their work in a special awards session. It is expected that the awardee will submit a full-length manuscript for publication in the Journal of Biomechanics. The award consists of an engraved plaque, a check for \$500, and a waiver of conference fees for the annual ASB meeting. The application deadline is the abstract submission deadline for the 2016 Annual Meeting.

Clinical Biomechanics Award

This award recognizes outstanding new biomechanics research targeting a contemporary clinical problem, and is sponsored by Elsevier Science, Ltd., publishers of Clinical Biomechanics. The awardee will be expected to present their work at the ASB annual meeting, and submit their work for publication in Clinical Biomechanics. The award will be selected from submitted abstracts for the 2016 Annual Meeting. There will be a check box on the abstract submission page to check if you want your abstract to be considered for this award.

Journal of Biomechanics Award

This award recognizes substantive and conceptually novel mechanics approaches explaining how biological systems function. It is sponsored by Elsevier Science, Ltd., publishers of the Journal of Biomechanics. The awardee will be expected to present their work at the ASB annual meeting, and submit their work for publication in the Journal of Biomechanics. The award is selected from submitted abstracts for the 2016 Annual Meeting. There will be a check box on the abstract submission page to check if you want your abstract to be considered for this award.

Student Travel Awards

These are offered to help students attend the ASB annual meeting. There are a number of these awards and each winner receives an award of \$250. The application deadline is the abstract submission deadline for the 2016 Annual Meeting. If more than one application is received by students of the same advisor, only one will be funded.

Research Travel Grant

These awards are offered to foster collaborative research and interaction among scientists by helping to offset the cost of travel to a host institution. All ASB regular members are eligible to apply. Travel and lodging costs are covered. Bud-

Past-President (cont.) Darryl Thelen

get requests may be up to \$1000. Matching funds from the candidate's or host's institution are desirable, but not required. The deadline is March 1.

President's Award

This award recognizes outstanding research presented as a poster at the annual meeting. The award is judged solely by the President. All posters are eligible.

Junior Faculty Research Award

This peer-reviewed competitive research grant is awarded to junior faculty members to support pilot data collection. The grant may be used for scientific supplies and other direct costs related to the proposed project, including graduate student support but excluding salary support. ASB regular members who hold a tenureor non-tenure-track appointment at the assistant professor or equivalent level at a degree-granting institution are eligible to apply. Budget requests of up to \$5,000 will be considered. The application deadline is February 28.

ASB Fellows

The other major duty of the Past-President is working with the ASB Fellows and Executive Board to elect new Fellows. In 2011, ASB created the status of Fellow to recognize professional achievement and service of the top members of the Society and to encourage continued service to the Society in leadership roles. To be considered for Fellow status, an applicant must have been a member of the Society in good standing for at least ten years, have a consistent and significant record of service to and participation in ASB, is expected to remain active in ASB, and has made significant research and scientific contributions in biomechanics. The applicant must have strong support from two nominating ASB Fellows (preferred) or one Fellow and a senior research scientist (with prior approval by the Past-President). Nominations should be directed to the past-president (dgthel-en@wisc.edu) by December 7, 2015. [Editor's note: This deadline has passed.]



Are you employed full time in a tenure-track or non-tenure-track position at the assistant professor level or equivalent? Do you have a great biomechanics research idea?

The <u>2016 ASB Junior Faculty Research Award</u> is a \$5,000 grant that can be used to generate pilot data and support early investigators.

Eligibility information and application instructions are available on the ASB Website at: http://www.asbweb.org/awards-and-grants/

Deadline: February 28, 2016

Questions? Email ASB Treasurer Karen Troy, ktroy@wpi.edu



2015 Award Summary

Student Travel Awards

Derek Pamukoff, University of North Carolina at Chapel Hill

Peter Fino, Virginia Tech

Nicole Corbiere, Clarkson University

Ying Fang, Worcester Polytechnic Institute

Chun-Kai Huang, University of Nebraska Medical Center

Abbie Ferris, University of Northern Colorado

Eric Pisciotta, University of Nebraska at Omaha

Rebecca Krupenevich, University of Maryland

Mark Hedgeland, Clarkson University

Barbara Schornstein, University of Northern Colorado

Hunter Bennett, University of Tennessee

Ryan Wedge, University of Massachusetts, Amherst

Semih Bezci, University of California, Berkeley



2015 Award Summary

ASB Fellows

John H. Challlis, The Pennsylvania State University

Jim Hay Memorial Award Chris Hass, Darryl Thelen, Paul DeVita

Over the last year, the ASB Executive Board has undergone a comprehensive review of our awards program in relation to our strategic plan and comparable professional societies. This process revealed that we have awards that recognize strong contributions to our annual meeting (Clinical Biomechanics, Journal of Biomechanics, and President's Award), promote the career of promising young scientists (Pre-Doctoral and Post-Doctoral awards) and celebrate sustained excellence in the field of biomechanics (Borelli Award and Hay Award). However relative to other societies, we believe we can and should do more to promote career development of early- and mid-career members. Early career development is being addressed, in part, through the introduction of a new Junior Faculty Research Award (see page 10). We are now contemplating re-defining the Jim Hay Award to be a mid-career award open to members of all disciplines within ASB. This change is considered for two reasons. First as currently defined, the Hay Award is only open to senior scientists working in sports and exercise science biomechanics, which represents a relatively small component of the overall research activities being performed by ASB members. Secondly, the Hay Award is currently for outstanding career accomplishments, meaning that nominees for that award are also prime nominees for the Borelli Award. We believe that transforming the Hay Award into a mid-career award would better distinguish it from the Borelli, while promoting ASB members at an important point in their careers when they are being considered for promotions or recognition within their institutions. As currently envisioned, the mid-career award would be open to nominees within 20 years of their terminal degree, who have demonstrated both scientific accomplishment in biomechanics and excellence in mentoring. The dual emphasis on scientific accomplishment and mentoring reflects the tremendous impact that Jim Hay had in both of these areas throughout his career. The ASB Executive Board intends to consider this initiative at the mid-year meeting in February and would welcome any feedback or concerns that ASB members have on this issue prior to that meeting. The executive board is in consultation with the Hay family regarding this change to the award.

Chris Hass, President-Elect Paul DeVita, President Darryl Thelen, Past-President

From the President, again (cont.) Paul DeVita

an Educational Outreach Expo for middle school children with a Biomechanics Activity Display. The ASB Executive Committee encourages all ASB members to attend the meeting next year to contribute to this celebration. We think it would be especially meaningful to have as many attendees of the earlier meetings as possible in 2016 and so we reach out to those members who attended the original 1977 meeting and the other meetings in the 1970s and 1980s. We look forward to seeing all who receive this newsletter in Raleigh next August. The meeting website is up and the main Organizing Committee is Kate Saul, Meeting Chair, Greg Sawicki, Meeting Co-chair, and Clare Milner, Program Chair.



39th Annual Meeting of the American Society of Biomechanics by Photographer Jing-Sheng Li and Editorial Assistant Cara Lewis



Communications Committee

Mihaly Csikszentmihalyi's TED talk Flow, The Secret to Happiness mentions seven components to feeling happiest in your current task. One of those components is "knowing what needs to be done, and how well we are doing." Maintaining the society's flow (and happiness) is dependent on the society membership main-

taining open communication. You need to know what we are doing, hence the newsletter, Facebook, Twitter and website, but we also need to hear from you.

In August I took over as the Communications Committee Chair as Michelle Sabick transitioned off of the executive board. Dr. Sabick served as the newsletter editor for six years before she started a three-year term as the Communications Committee Chair. Over the past three years she was responsible for much of the transition the ASB website has gone through as we look for it to become a better outreach tool to the membership and to those outside of the society. Since this summer the Communications Committee [myself, Jason Franz (University of North Carolina), Scott Breloff (University of Scranton), and Tarang Jain (Northern Arizona University)] has worked on 4 goals:

1. Graduate program webpage update – Our graduate program page has provided a useful database for students interested in biomechanics graduate education, but many of the links have been broken over time as graduate programs change their web addresses. We have been contacting programs to overhaul the links on this page. We hope to have this updated shortly after the New Year. If after that time you still notice a change you would like to see, please contact me.

2. New education repository – Along with the Education Committee, we have been working on a new database for educational materials. This will be a transfer and expansion of an old database started by Andy Karduna.

3. General fixes – We've had several technical issues with the website. It seems like something happens monthly. We have been working with our webhost to solve these issues. Let us know if you notice anything odd with the website.

4. Increased social media presence – We have attempted to be more present on social media. Check us out on Facebook and Twitter (@AmSocBiomech) - including pictures from the ASB annual meetings in 2013, 2014 and 2015. Besides updates on society information, you can see a weekly post of interesting biomechanics news articles. I have incorporated these in my undergrad biomechanics course to expand on my students' biomechanics experience and I encourage you to think of interesting ways you can use these. If you have one, let us know.

Future goals for the Communications Committee include some exciting website updates and more integration of annual meeting content with the website. But getting back to Csikszentmihalyi's theory of happiness, this society will function best with the continued communication between the members. I encourage you to contact me at any time about any internet-related society communications, and I encourage you to watch the TED talk.





Find us on Facebook or Follow us on Twitter

Facebook: American_Society_of_ Biomechanics

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2016 Annual meeting website

Program Chair Clare Milner

The 40th Annual Meeting of the American Society of Biomechanics (ASB) will be held August 2-5, 2016 at North Carolina State University in Raleigh, NC. We encourage the submission of high quality abstracts across the full breadth of contemporary biomechanics research, including but not limited to: assis-



tive devices, balance, cellular mechanics, comparative biomechanics, ergonomics, exoskeletons, gait, head and neck, lower extremity, molecular mechanics, motor control, orthopaedics, orthotics, posture, prosthetics, robotics, spine, sports, teaching, tissue mechanics, and upper extremity. In concert with ASB's enhanced efforts to increase diversity in the field, we encourage submission of abstracts reporting studies of under-represented populations and health disparities. Furthermore, abstract submission instructions will indicate that appropriate descriptors of study participants should be included in submitted abstracts, such as the age and sex composition of the sample.

The program will include multiple parallel sessions, research symposia, thematic poster sessions, traditional poster sessions, lab tours, tutorials, and student-focused programming. We are pleased to announce keynote lectures by Dr Sheila Patek and by Dr Tibor Hortobagyi (International Society of Biomechanics speaker). We will also host a keynote speaker from the International Society for Biomechanics in Sports.

We look forward to our annual best paper competitions (Clinical Biomechanics and Journal of Biomechanics), and the Society's honorary awards (Borelli, Hay, young scientist pre-doctoral, and young scientist post-doctoral).

Please also consider submitting your proposal for an innovative and impactful research symposium. The proposal deadline is January 15, 2016. See the ASB website for more details.

Abstract submission will open on January 15, 2016 and abstracts will be accepted until 5:00pm EST on March 1, 2016. Meeting information is available through the ASB website and the meeting website. Links for abstract submission, meeting registration, and awards eligibility and nomination procedures can be found on the meeting website.

See you there!

"Equipped with his five senses, man explores the universe around him and calls the adventure Science."

- Edwin Powell Hubble

Steven Vogel Rodger Kram

The field of Biomechanics lost a gentle intellectual giant in November with the death of Steven Vogel, Ph.D. He began a 50-year career in biomechanics with experiments on fruit fly flight in ~1965 as a Harvard doctoral student and was a professor at Duke University for more than 40 years. Vogel stud-





ied, coined the term and wrote the definitive textbook *Comparative Biomechanics* which refers to the biomechanics of the ~8 million species of organisms on Earth other than *Homo sapiens*. Appropriate for someone whose surname translates as "bird", Vogel specialized in the fluid biomechanics. His seminal textbook, *Life in moving fluids: the physical biology of flow*, has been cited a whopping 2747 times according to Google Scholar. But specialized implies a narrow view, and his view was anything but. Some scientists focus on many aspects of a single species. Others focus on the same structure in many species. In contrast, Vogel would study a particular mechanical concept, say fluid circulation, in a wide variety of species, from living sponges in the oceans to the clever, passively ventilated burrows of prairie dogs. He studied animals, plants and even fungi.

Numerous hallmarks characterize Steven Vogel's career/personality. One was his distinct lack and even disdain for research grants. He felt that pursuing grants impaired creativity and spontaneity. While I agree, un-tenured faculty would be illadvised to shun grants. Steve somehow found very modest funds to pursue topics about which he was simply curious and that were just plain fun. Historically, progress in biomechanics has been catalyzed by new devices or techniques. Vogel enjoyed inventing, building and tinkering with his own equipment. Seemingly random household objects often appeared in the methods sections of his publications. Humor and cringe-inducing puns were another hallmark. I encountered only gleeful agreement when I asked Steve for help with an intricate practical joke on one of my former Ph.D. students.

I write this obituary not as a dear friend, nor as a direct student, nor as a colleague on the specific topic of fluid flow in comparative biomechanics. Rather, I have been a long-time fan of Steve's approach to science and have been educated, inspired and entertained by his numerous books. Vogel's legacy will be his 10 (!) textbooks. I encourage you to obtain his most accessible, Life's Devices. That book would be a good way to turn on a high school science student to biomechanics and perhaps pass the torch to the next Steven Vogel.

Obituary of Steven Vogel, Duke University



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ASB and AOPA Géza Kogler

Like any inquisitive scientist, biomechanists love to share their research findings and discoveries with colleagues at a conference of their peers. We also read and publish in our respected biomechanics periodicals which holds knowledge in print for the ages, later to be found by those who seek. Though clinicians are much the same, they differ in that their primary source of information is typically medical journals and conferences with a clinical emphasis. Hence, these professional inclinations can limit the expediency of biomechanics' knowledge dissemination to clinicians and slow the translation of information. In an effort to encourage a continued awareness and appreciation of the impact biomechanics has on rehabilitation and clinical practice, the American Society of Biomechanics has partnered with the American Orthotic and Prosthetic Association (AOPA) for the past four years to accelerate new biomechanics knowledge transfer.

In 2012, ASB member, Géza Kogler, approached the then ASB Board with a proposal to re-exhibit the ASB scientific posters related to orthotics and prosthetics at the AOPA National Assembly meeting held in the fall annually. Géza, who is both a clinical orthotist as well as a biomechanist/bioengineer, had observed a wealth of orthotic and prosthetic biomechanics papers (> 30) that would largely go unseen by his clinical counterparts who rarely attend the ASB Annual Meeting. Elizabeth Hsaio-Wecksler and Bob Gregor sought ASB board approval for the initiative and assisted Géza in the planning of the first ASB Special Scientific Poster Exhibition, which happened to be the year of an Orthotic and Prosthetic World Congress that was held September 20-25, 2012, in Boston, Massachusetts. Since then, ASB has continued with the special ASB biomechanics poster exhibitions each subsequent year at the AOPA national assemblies in Las Vegas, Nevada (2013), Orlando, Florida (2014), and San Antonio, Texas (2015).

Next year will be the fifth year of the ASB special scientific poster exhibition at the AOPA annual meeting in Boston and there are plans to expand the number of posters displayed by extending invitations to participate to those authors accepted for ASB podium presentations. Authors wishing to participate will be asked to prepare a poster of their oral presentation that can be placed on display for the exhibit. None of the ASB poster authors are expected to attend the AOPA meeting but are more than welcome if they so desire. The hope is that early translation of study results may initiate more dialog between clinicians and researchers and perhaps enlighten practitioners to the merits of the biomechanical foundations of their practice domain. Given the limited base knowledge in orthotics and prosthetics and slow advancements in the field, the poster exhibition has opened the professions' eyes as to the scientists and engineers that have found interest in answering questions related to these rehabilitation disciplines.

As the "era of information" continues to expand, embodied by a plethora of new journals to accommodate every specialty topic, clinicians have to navigate volumes of material that must be further filtered as to their applicability to practice. By providing clinicians access to peer-reviewed papers through poster presentations at an additional conference venue, ASB's mission to promote biomechanics is exercised in a most impactful way. We hope members studying in these areas will take advantage of participating in the special exhibit poster presentations to promote their science to their clinical counterparts.



ASB Corporate Sponsors 2015

Corporate sponsor levels are aimed at encouraging affiliation by commercial organizations that market products which are used by the biomechanics research community, or companies that are otherwise engaged in activities that fall within the Society's general interest areas. Companies wishing to become a Corporate Member are encouraged to contact Karen Troy, Treasurer.

The ASB Executive Board is pleased to recognize the following corporate sponsors:

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Diversity Committee

Diversity and inclusion following the annual meeting in Columbus, Ohio

The newly-formed ASB Diversity and Inclusion Committee had a successful start to implementing its initiatives at the annual ASB meeting in Columbus, OH. The Committee was able

to invite 22 ASB Travel Award recipients and host speakers from The Ohio State University to address important issues related to diversity at the Women in Science and Diversity breakfasts. In addition, the committee submitted an NIH grant to continue the tradition of inviting traveling fellows to the annual meeting.

ASB Diversity Travel Award

Twenty-two diversity travel awards were given out to recipients to attend the 2015 ASB meeting. Ajit Chaudhari, PhD, 2015 Meeting Chair, received an NIH grant to support travel fellowships for underrepresented minorities to attend the 2015 annual meeting. The purpose of this program was to encourage diversity and inclusion at the annual meeting by supporting attendance of individuals from diverse backgrounds as well as those committed to diversity. The awards offset the cost of attendance and a portion of the costs of travel to the annual meeting. To be eligible, an applicant must be from any group that has been historically disadvantaged or underrepresented in research disciplines. Eligibility included groups shown by NSF to be underrepresented in biomedical research. Following an overwhelming response from applicants, the Committee awarded 22 awards to male and female recipients at the undergraduate, graduate, post-graduate, and faculty levels. All recipients attended the meeting in Columbus, and will share with the Committee what they accomplished at the meeting to help the Committee improve upon and support the experience for these individuals.

Women in Science and Diversity Breakfasts

The Women in Science and Diversity breakfasts featured speakers from the Columbus area with expertise in promoting diversity in the sciences. Prior to the conference, the venues for the two breakfasts had to be changed to accommodate the overwhelming demand for seating. Mary Juhas, PhD, FASM, associate vice president for gender initiatives in STEMM (Science, Technology, Engineering, Mathematics and Medicine) in the Office of Research at The Ohio State University spoke at the Women in Science breakfast. Her talk entitled "Searching for Inclusive Excellence" focused on recruitment and retention of female faculty throughout their professional trajectory. She emphasized support and initiatives during all phases of the careers of female students and faculty such that female scientists and engineers are not forced to leave the workforce. Quinn Capers, IV, MD, Dean of Admissions in the College of Medicine at The Ohio State University spoke about "Diversity in the Workforce: A Politically Correct Concept, Or a Matter of Life and Death?" at the Diversity breakfast. His talk emphasized the critical importance of the lack of diversity in the workforce, especially in health care. He presented several research studies showing that both women and individuals from underrepresented minorities have received different treatment than the standard of care, resulting in poorer outcomes. He discussed means of enhancing diversity by addressing implicit (unconscious) racial bias and recruitment strategies for overcoming the lack of diversity, thus leading to better medical outcomes.







Diversity Committee (cont.) Kristin Zhao

Upcoming Diversity and Inclusion Efforts

1. Updating ASB membership records: The Society leadership has decided to report race and ethnicity of its membership in the same manner as the NIH so as to provide more sensitive services and programs to our members. Ethnicity is now being recorded as: 1) Hispanic or Latino, 2) not Hispanic or Latino, or 3) don't wish to answer. Race is now being recorded as: 1) American Indian or Alaska Native, 2) Asian, 3) Black/African American, 4) Native Hawaiian/Pacific Islander, 5) White, 6) other and 7) don't wish to answer. A category for disability has also been added (yes, no, don't wish to answer).

2. New ASB abstract changes on the horizon: For the 2016 annual meeting, ASB is encouraging submission of abstracts reporting studies of under-represented populations and health disparities. Furthermore, abstract submission instructions will indicate that appropriate descriptors of study participants should be included in submitted abstracts, such as the age and sex composition of the sample.

3. Preparation for 2016 annual meeting in Raleigh, NC: Speakers are being sought for the Women in Science and Diversity breakfasts, and an NIH grant has been submitted (PI: Kate Saul, PhD) to support travel for a new group of diversity travel awardees for the upcoming meeting.

4. Coming in the next newsletter: Comments and experiences from the 2015 ASB annual meeting in Columbus from the Diversity Travel awardees!



President-elect

Mentor is among the most rewarding and impactful roles within higher education. Both professionals and graduate students value mentorship as over 95% of students rate it as an important or very important part of their career success. Mentoring programs create opportunities for women and individuals





from underrepresented minorities. Women in academic medicine and research careers who have a mentor are more productive. Healthcare providers who are mentored are more also more likely to mentor. So now that we understand why mentoring is important, how do we do it effectively? The good news is that you choose to be the kind of mentor you are. You don't have to mentor the way you were mentored. Below I share some of my philosophy of mentoring much of which has been formulated from the high quality mentoring I have received and a conscious decision to consume literature focused on enhancing mentoring skills. Good mentors are proactive and continually grow and develop their mentoring skills. I encourage all of us to make a directed effort to read books and articles on leadership, management, and mentoring, and to take notice of the mentoring styles of our eminent colleagues.

Mentors must be good role models. We must be authentic and practice what we preach. We must show our trainees, through our actions, what it takes to be a good teacher, productive scientist, and collegial citizen. Further, we must be **admirable**. Successful mentors **listen**, **teach**, and **guide**. We can rely on our personal experiences to help mentees avoid mistakes as well as helping them learn from their good decisions and missteps. We must listen to what the student is portraying and help guide, not direct, them to make a decision that is best for them. Once a decision is made, we must support that decision and move forward even if we might have chosen the alternative. Good mentors exhibit situational **leadership**. In situational leadership, the level of direction and support varies based on skill set and motivation (skill and will) and is situation specific. In general, good mentor-mentee interactions should progress from directing to coaching to supporting to delegating. A good mentor identifies and appreciates the **uniqueness** of each student. Mentors must exhibit sensitivity to cultural, ethnic, gender, and disability differences. Further, individualized training plans are an excellent means to fostering a specific plan of attack. Good mentors also provide specific constructive and supportive **feedback** in a timely manner. Students can learn effectively from both praise and criticism if it is specific to a behavior or event and is delivered in an honest and compassionate manner. Good mentors are **encouraging** and show they care. Students should be encouraged to discuss ideas, try new techniques, and not to be afraid to fail. Good mentors are career consultants and **foster** networking. Part of our responsibility is to help students cultivate multiple professional relationships inside and outside of their home institution. ASB's conference mentoring program is an outstanding opportunity for our student members to increase the breadth of their community of scholars and receive confirmatory and distinct perspectives on academia. I highly encourage students, faculty, and our corporate partners to participate in the mentoring programs at our upcoming meetings in Raleigh and Boulder. Mentoring is a long symbiotic walk that starts with the first conversation with a potential graduate student and spans the duration of our academic careers. This is why it is so important for prospective graduate students and faculty to engage in meaningful



President-elect cont. Chris Hass

discussions during the recruiting process. Good mentors treat their students with **respect**. A common complaint among students is that they do not feel they have professors' full attention when they are talking with them. Good mentors also **share credit** and **provide praise** for success.

These ideas are not novel and have merely come to the forefront of my thinking from listening to students and colleagues as well as reading relevant literature. My hope is that these ideas are not used as a recipe but rather a ripple that initiates a desire to pay more attention to this important role. There are many resources available to help us all become better mentors. If one is overwhelmed by where to start, here is a great and highly cited resource from the Rackham Graduate School at the University of Michigan, *How to Mentor Graduate Students: A Guide for Faculty*.



California State University, Sacramento Department of Kinesiology and Health Science

Tenure-Track Full-Time Assistant Professor Position #101496

The Kinesiology and Health Science department at California State University, Sacramento, seeks to hire an Assistant Professor to teach Biomechanics in Exercise Science. Doctorate in Biomechanics with post doctorate experience in motor control or neuromuscular physiology preferred. ABD candidates will be considered; degree must be completed by August, 2016. Peer reviewed publications, external grants, and prior college/University teaching experience working with a diverse population is preferred. The successful applicant will mainly teach a variety of biomechanical courses in an undergraduate and graduate Exercise Science program, develop a scholarly record and perform university/community service.

Applications are only accepted through the Sacramento State jobs website. For full vacancy announcement, including application procedure, please see: http://www.csus.edu/about/employment/

The review of applications will begin January 20, 2016, and continue until the position is filled.

Address QUESTIONS ONLY to Dr. Roberto Quintana, Search Committee Chair, Department of Kinesiology & Health Science. Phone: 916-278-4495, or by email: quintana@csus.edu.

AA/EEO. Clery Act Statistics available. Mandated reporter requirements. A background check (including a criminal records check) must be completed satisfactorily before any candidate can be offered a position with CSUS.

Meeting Chairs Katherine Saul, Gregory Sawicki

Planning for ASB 2016 is in full swing and we are looking forward to making it the best meeting yet in honor of our 40^{th} anniversary celebration. The meeting will be held in Raleigh, NC, hosted by North Carolina State





University, from August 2-5, 2016. NCSU is located in the Research Triangle, a research and industry region that also includes UNC-Chapel Hill and Duke University. The Raleigh Convention Center and the attached Marriott Raleigh City Center hotel will be our host venues. The conference site is located in the heart of downtown's vibrant entertainment district – featuring restaurants, bars, museums, and music – and is also steps from the Capitol and state museum district.

The opening reception and all scientific activities of the meeting will be conveniently held at the Raleigh Convention Center. The banquet will be held at the outstanding Nature Research Center of the NC Museum of Natural Sciences, located within a mile from the conference hotel, and featuring a three-story HD theater and numerous scientific exhibits open only to our event.

As in years past, to kick off the meeting, we'll feature tours of local biomechanics laboratories. We'll take guests over to NC State's Centennial Campus to view our new engineering campus highlighting a number of labs in Biomedical Engineering, and Mechanical and Aerospace Engineering, as well as the James B. Hunt, Jr. Library, winner of numerous design and innovation awards and featuring immersive technology spaces and the three-story bookBot robotic book delivery system.

New this year, we will launch an educational outreach activity on Centennial Campus, designed to promote interaction between our society and local middle school students by bringing biomechanics concepts to life. Please be on the lookout this spring as we'll be soliciting applications for demos and lesson plans, and selecting the best activities submitted by our membership for inclusion in the event. Start thinking about your favorite activities!

Finally, in light of our 40th anniversary celebration, we would like to honor our past by soliciting contributions from the membership regarding memories of the founding of ASB, early years of the society, and the impact that ASB has had on your lives. Stories, photos, and memorabilia are all welcome, and we plan to showcase our history at the meeting in a variety of ways. Please contact us at asb2016ncsu@gmail.com with any memories you'd like to share. Contributed items (or their facsimile) will become part of the ASB archives, but originals can be returned to the contributor upon request.

More information about the meeting is available at our website. Sponsor and exhibitor registration is NOW OPEN. Priority for choosing booth spaces is based on when sponsors register, so please register as early as possible to get your ideal booth location. Abstract submission information and attendee registration will both be available in early 2016 on the website. We look forward to sharing our Southern hospitality with you next August!



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Umbrellas are for Tourists William Ledoux

As I put the finishing touches on the newsletter, I am excited to announce that we have made progress on the ASB archives project. Just last month, I received my first box of documents (from past-president, secretary/treasurer, and newsletter editor, Don Anderson) to augment our existing archives. I have not





had a chance to listen to them yet, but in addition to a stack of the files from Don's time as secretary/treasurer, his material also contained several tapes and a mini-recorder - no doubt containing recordings of past ASB executive board deliberations. It will be interesting to play them!

I have also been working with founding member and former secretary/treasurer Rob Shapiro to reach out to other founding members, ASB fellows, and pastpresidents. In preparation for the ASB's 40th anniversary, the society is soliciting old photographs, meeting programs, letters and any other memorabilia related to the history of the ASB. We are particularly interested in content from the 70's and 80's, but would like to cover the entire 40-year history of the society. Our intention is to make a slide show, but we are also considering a physical display. Content could be physical or electronic. This request has a dual purpose – in addition to celebrating the ASB's anniversary, we are also interested in augmenting the society's archives. As such, all material will be donated to the ASB archives at Penn State after the annual meeting. However, a word on any content you wish to have returned - in particular photographs; we would be happy to scan content and return it to you. So if you are cleaning your office and recycling some of your files, please consider if you would like to donate any of these to the ASB. Please contact either Kate Saul (the meeting chair) or Bil Ledoux, as the society can cover your shipping charges.

Research Travel Grant, Metin Yavuz

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I have visited the Biomechanics Lab of the University of Akron (UA) right after the 2015 ASB meeting. The trip served three purposes. First, I had a chance to collect data with the new shear plate Dr Brian Davis has in his lab. The device was developed by Dr Davis and two engineering/technology companies located in Ohio. I also had a chance to meet with the company representatives at UA and provided them feedback about the device and my past experiences in plantar shear stress assessment. The two companies are in the process of utilizing this feedback and developing an improved version of the device, which will be delivered to my lab shortly. Finally, I met with Dr Davis and formulated a strategy for an upcoming joint grant application.

Dr Davis and I have been exploring the clinical implications of plantar shear stresses in diabetic foot ulceration, for a brief period together and then independently, since 2005. The recent results by both groups indicated that shear stresses may play even a more important role than pressure does, in ulcer pathology. This trip gave us a chance to catch up on what the two groups have been doing independently and what we can do together in the future in order to better understand the ulceration pathomechanics.

I am grateful to ASB for providing me with this opportunity.





Events Calendar

Orthopedic Research Society March 5-8, 2016, Orlando, Florida, USA Abstract deadline – past www.ors.org/2016annualmeeting

American Academy of Orthotists and Prothetists March 9-12, 2016, Orlando, Florida, USA Abstract deadline – past www.academyannualmeeting.org/2016/

Society for Modeling and Simulation International April 3-6, 2016, Pasadena, California, USA Abstract deadline – past www.scs.org/springsim

Gait and Clinical Movement Analysis Society May 17-20, 2016, Memphis, Tennessee, USA Abstract deadline – past www.gcmas.org

American College of Sports Medicine May 31-June 4, 2016, Boston, Massachusetts, USA Abstract deadline – past www.acsmannualmeeting.org

American Physical Therapy Association June 8-11, 2016, Nashville, Tennessee, USA Abstract deadline – past www.apta.org/NEXT

International Society of Electrophysiology and Kinesiology July 5-8, 2016, Chicago, Illinois, USA Abstract deadline January 31, 2016 www.isek.org/?page_id=230

European College of Sport Science July 6-9, 2016,

Vienna, Austria Abstract deadline: February 15, 2016 www.ecss-congress. eu/2016/16

International Society of Biomechanics in Sports July 18-22, 2016, Tsukuba, Japan Abstract deadline: February 20, 2016 www.isbs.org/conferences.html

International Symposium on the 3-D Analysis of Human Movement July 18-21, 2016, Taipei, Taiwan Abstract deadline: January 31, 2016 *3dahm.oemal.tw*

American Society of Biomechanics August 2-5, 2016, Raleigh, North Carolina, USA Abstract deadline: March 1, 2016 *asb2016.asbweb.org*

IEEE Engineering in Medicine and Biology Society August 17-20, 2016, Orlando, Florida, USA Abstract deadline: April 29, 2016 *embc.embs.org/2016*

Human Factors and Ergonomics Society International Annual Meeting September 19-23, 2016, Washington, DC, USA Abstract deadline: February 8, 2016 *tinyurl.com/o26c9fy*

International Society of Biomechanics 2017 Congress XXVI July 23-27, 2017, Brisbane, Australia Abstract deadline tba www.biomech2017.com



NOTE:

For other listings of international conferences, please visit either the ISB's website or Biomch-L.

40th Annual Meeting of the American Society of Biomechanics

1977 Iowa City 1978 College 1980 Cleveland 1982 Seattle 1984 Tucson 1985 Ann Arbor Davis 1988 Urbana-Champaign 1991 Tempe 1992 Chicago 1993 Iowa Palo Alto 1996 Atlanta 1997 Clemson 1998 Pittsburgh 2000 Chicago 2001 San Diego Toledo 2004 Portland

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