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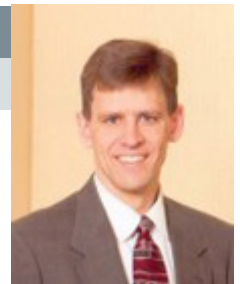
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Newsletter

Volume: 27 - Number: 2, December 2014

From the President

Darryl Thelen



What deceleration does a woodpecker experience when pecking? Curious, keep reading...

I would like to begin by thanking the ASB membership for the opportunity to serve as your president. It truly is an honor and I look forward to working with all of you to continue to move our society forward. As an all-volunteer organization, it is incredible to see how passionate and active our membership is. Nothing happens without your ideas and effort, so I encourage you to continue to step forward and get involved.

Our annual meeting was truly unique this past summer, being held in conjunction with the 7th **World Congress of Biomechanics** (WCB). On behalf of the society, I would like to thank our past program chair, Brian Umberger, for his extensive efforts in planning our ASB events in conjunction with WCB – there were plenty of challenges to say the least. I read through the conference survey comments collected by our education chair, Cécile Smeesters, and can relate to many of the sentiments expressed: the overwhelming feeling of choosing from among 20 parallel tracks and the room size limitations which made it challenging to get into and switch between some sessions. However stepping back, it really was an incredible and historic event with over 4000 participants from around the world all interested in biomechanics. Beyond that, the breadth of biomechanics topics presented was both eye-opening and thought provoking. As an illustration of this, below are word clouds from abstract titles presented at the ASB 2013 meeting and WCB 2014 meeting.

ASB 2013

activation adults amputation ankle body bone
control development dynamic element extremity fatigue foot
force functional gait healthy hip human individuals
joint kinematics knee landing
lower measures moment motion muscle older pain
performance perturbations postural response rotation running shoulder
simulated speed stability standing strength task trunk upper
variability walking wheelchair young

WCB 2014

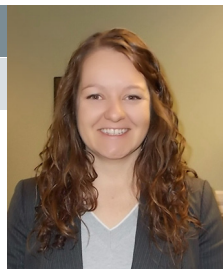
activity aneurysm aortic arterial assessment blood bone
cell collagen computational control design
development dynamics element engineering
finite flow force function gait hip human
imaging impact injury joint kinematics knee limb
measurement motion movement muscle patients
prediction response role shear simulation spine stability stem
stress structure system tissue vivo walking

From this, you can see that ASB had a big mark on the meeting with many of our traditional topics (e.g., muscle, knee, kinematics) showing up prominently at WCB. However, you will also see many major biomechanics areas at WCB

Continued on page 3...

Student's Corner

Amy Lenz



Greetings from Michigan where autumn has already brought over two feet of snow before the leaves had a chance to fall. Happy are those whose wishes were granted when the snow melted two weeks later, yet that is not the end of our winter time. Despite the harsh winter season of Russian roulette ahead, we can reflect on the warm summer's conference events and begin planning for the upcoming year. The 7th World Congress of Biomechanics (WCB) held in Boston this past July was an overwhelming success with students from around the world participating. The ASB events provided a smaller scale opportunity for students to network, socialize and learn about biomechanics amongst the numerous other activities as part of the collaborative conference. I'm happy to report the ASB events were a great success! The Student Mentoring program had 38 participants this year. Thank you to all the students who contributed to the program and I hope you gained valuable advice from your mentorship experience. A special thank you to all the mentors because without all of you this program would not be possible. I'm pleased to announce we are opening the mentor role to vendors for the upcoming year because of the popular request from students to be matched with representatives from industry. I hope this opportunity grows the numbers of those students wanting to take advantage of the mentorship program.

Student opportunities for networking were also plentiful at the Women in Science Breakfast and the Diversity Breakfast. During the Women in Science Breakfast, we had a tremendous turnout with 86 students, faculty, scientists and industry representatives in attendance. Numerous speakers told personal stories about times in their career when the "Imposter Syndrome" reared its ugly head in their lives. For me as a student, this gave reaffirming encouragement to persevere through challenging periods because successful women I look up to have also gone through such times. A huge thank you to Cara Lewis for her help and organization to make the Women in Science Breakfast a success. The Diversity Breakfast was also a success due to the dedication of Kate Saul and Kristin Zhao.

The Students' Night Out event was in full swing at the WCB with approximately 65 students in attendance. This relaxing event took place at Charlesmark Hotel and Lounge at Copley Square in the heart of downtown Boston. Students casually gathered to network, reunite with old lab mates and meet new friends over delicious appetizers and drinks. Thank you to all the students who attended and brought friends to the event to make the turnout a huge success.

As we look forward to the 39th Annual Meeting of the ASB in Columbus, 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 Event, 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. If you are interested in getting involved with ASB, I am also looking for new Student Advisory Committee members. Please consider volunteering to be part of this committee which serves the students of ASB. I wish you all happy holidays, including a restful break from classes and may the New Year bring fresh insights for your research.



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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 a conference session), contact [Andrew Karduna](#), 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.)

Darryl Thelen

(e.g., cellular, tissue, flow) not registering in the ASB list. While this is a simple comparison, I believe it nicely illustrates the opportunity and challenge we have to expand the breadth of biomechanics research being presented at our annual meeting. We can proactively do this by both expanding our own knowledge and research boundaries, while also encouraging non-ASB members to come and present at our meetings. Perhaps a more formal way to do this is to organize a symposium and invite speakers in on a topic we may not normally see. Our program chair, Rick Neptune, is currently soliciting symposium topics, so I would encourage you to consider submitting an idea that would push us beyond some of our traditional boundaries.

For those that have read this far, a woodpecker experiences ~1200 g's when pecking. This is an order of magnitude higher than acceleration magnitudes that can induce a concussion in a human, though the lower head mass, brief duration and skull design prevent brain damage in the woodpecker. You can learn this interesting biomechanics factoid and many others by visiting a special exhibition on biomechanics (The Machine Inside: Biomechanics) at the Field Museum in Chicago. The exhibition was designed by Mark Westneat, PhD, who is now a Professor of Organismal Biology and Anatomy at the University of Chicago. I toured the exhibition over Thanksgiving weekend and found it to be a great reminder of how naturally captivating and interesting biomechanics phenomena truly are. The 7500 square foot exhibit is divided into three areas illustrating how animals and humans are built to survive, built to move and built to discover. These sections are further broken down into related systems such as 'Pumps and Pipes', 'Jaws and Claws' and 'Wings and Fins'. There is an emphasis throughout on showing real specimens and short videos of actual biomechanical phenomena. For example, you will see how a squid can shoot out a tentacle in 30 ms to catch prey and how a trap-jaw ant can snap shut at 145 mph to propel away from danger. For locomotion enthusiasts, both animal and human gaits are covered with illustrations of the pendulum model of walking and energy-storage-and-release mechanisms in running. There is even a Tad McGeer passive walking robot proudly displayed! Hands-on exhibits allow you to feel the blood pressure needed to reach a giraffe head, and experience the relative propulsion generated via flapping stubby wings and slender wings. A virtual mechanical testing machine allows you to compare biological tissue and structure strengths in head-to-head competitions under tension, compression, shear, etc... Too cool!



If you find yourself in Chicago over the holidays, I would encourage you to check out the exhibition. It will only continue at the Field Museum through January 4th, but there is a traveling version which you could try to get to come to a museum near you. Many of us are engaged in outreach activities, and these types of exhibits can introduce the general public to biomechanics and hopefully inspire younger generations to discover biomechanical phenomena we have never considered.

Education Committee

Cécile Smeesters

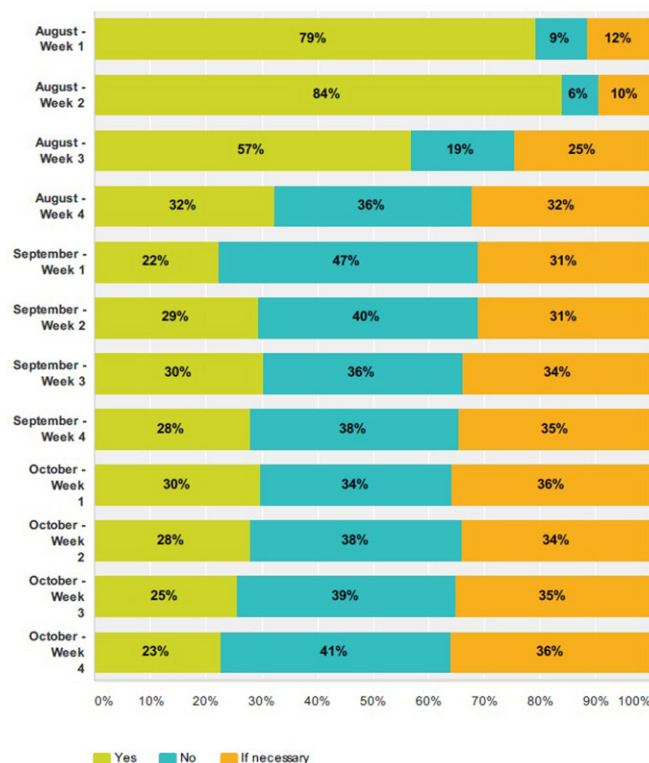
According to the 219 responses to the WCB-ASB2014 meeting survey, the ASB portion of the 2014 World Congress of Biomechanics in Boston MA was a resounding success. Congratulations to Brian Umberger and his team for a great program. Here are a few interesting highlights of the survey results:



- Attendees were satisfied with the quality and topics of the two ASB tutorials: Probabilistic Methods to Evaluate Uncertainty in Musculoskeletal Modelling by Bradley Davidson and Casey Myers (91% satisfied or strongly satisfied, 70-80 participants) and Guidance for Writing NIH Grants by Andrew Biewener (89% satisfied or strongly satisfied, 45-60 participants).

- Attendees were satisfied with the quality and topics of the six ASB symposia (90-99% satisfied or strongly satisfied): Simulation Models of Sport and Exercise; New Approaches to Biomechanics in Ergonomics/Human Factors; Subject- and Patient-Specific Musculoskeletal Modeling; Technology, Health and Rehabilitation; Metabolic Energy Use in Movement; and Teaching Symposium.

- The “best” weeks for future ASB meetings are by far the first three weeks of August: weeks 2 (84% Yes), 1 (79% Yes) and 3 (57% Yes), in order of preference. After that, the majority of responses are “No” (34-41%) or “If necessary” (31-36%), but it is nearly a three way split with the “Yes” (23-32%) responses. The worse week is the first week of September, with 47% “No”, 31% “If necessary” and 22% “Yes”.



ASB Executive Board 2014-15

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ASB Executive Board 2014-15

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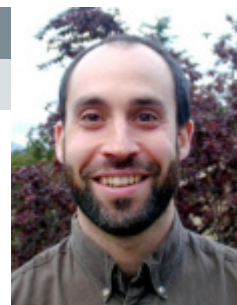
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Secretary/Membership

Andrew Karduna



Here is some recent history about members numbers:

2012: 618 active ASB members: 8 Emeritus, 364 Regular and 246 Student

2013: 750 active ASB members: 9 Emeritus, 459 Regular and 282 Student

2014: 661 active ASB members: 10 Emeritus, 438 Regular and 213 Student

So a little lower than last year at this time, but I suspect that has something to do with there being a World Congress meeting, rather than a stand-alone ASB meeting.

Let's see if we can get our numbers of up for 2015 - please take a minute to renew your membership at www.asbweb.org.

Remember the issue with the by-laws? No? I'll refresh your memory - "After the first general meeting, application for membership in the Society must be made in writing, be supported by at least two members of the Society, and be approved by the Executive Board." We are starting to actually implement this.

This is now part of the application process:

Sponsors (names and ASB Membership numbers of 2 Regular members) – For students, one of the members can be a Student member.

And this is on our website:

Note that ASB members can find their Membership Number by logging in to the on-line system, clicking on "Keep your contact and profile details up to date" and then clicking on "Membership."

So if you want to sponsor someone's ASB membership application, please give them your membership number. That is our way of confirming that you support the applicant. We have received several application in which there are no membership numbers (and even some who included sponsors who are not ASB members). So for this to work, we need everyone to be on the same page.

If you need help figuring out your membership number, just ask Nick Stergiou and Jenna Yentes. They were well ahead of the curve on this one. Must be all that Nebraska beef.

"The most exciting phrase to hear in science, the one that heralds the most discoveries, is not "Eureka!" (I found it!) but "That's funny..."

- Isaac Asimov

Treasurer

Karen Troy



Happy December to all of you! With 2014 nearly gone, this is an excellent time to renew your ASB membership for 2015! Once again, membership prices will stay the same as in previous years (cheap), so please remember to renew today. Want to know what your money goes for? Here are some of the major projects that ASB has funded since my last update in June:

1. Three events at the World Congress of Biomechanics for our members: Women in Science Breakfast, Diversity Breakfast, and Presidents and Fellows Breakfast (\$9783; normally would be covered by conference registration costs).
2. Honoraria for keynote speakers who presented as part of ASB symposia at the World Congress (\$2000; normally would be covered by conference registration costs).
3. Hay, Borelli, and President's, and Young Scientist Predoctoral and Postdoctoral Awards (including waiving conference registration fees and covering travel expenses for some awardees): \$4800 (about half of this normally would be covered by conference organizers).
4. 2015 conference abstract submission and review software: \$1300.

I have also been working with the 2015 and 2016 conference organizers to adopt software that improves mobile access of conference proceedings, which should be a substantial upgrade compared to previous years. In addition to these rotating funds, we maintain long-term investment accounts to cushion the society in the case of a net loss during the year. These investments total approximately \$187,000, up about \$5000 since June, due to general improvements in the economy. Over the summer, Richard Hughes, Darryl Thelen, and I completed a "review the financial books" for the Society. I am pleased to report that everything was in good order.

Did I mention that it is time to renew your ASB membership for 2015? In 2014 we distributed over \$25,000 in grants and awards to ASB members. Want a piece of the pie? Renew your membership, and apply! Speaking of pie, happy holidays to you all – enjoy some pie!



ASB Executive Board 2014-15

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"The good thing about science is that it's true whether or not you believe in it."

- Neil deGrasse Tyson

Education Committee (cont.)

Cécile Smeesters

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 five regional conferences:

Midwest ASB Regional Meeting

University of Akron, Akron, OH
February 17-18, 2015

Human Movement Science and Biomechanics Research Symposium

University of North Carolina, Chapel Hill, NC
February 27, 2015

South Central ASB Regional Meeting

University of North Texas Health Science Center, Fort Worth, TX
March 6-7, 2015

Rocky Mountain ASB Regional Meeting

YMCA of the Rockies Conference Center, Estes Park, CO
April 17-18, 2015

Northwest Biomechanics Symposium

University of Washington, Seattle, WA
May 1-2, 2015

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 (ex: 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 allowed!

Finally, if you are looking for a last minute stocking stuffer, may I suggest *Biomechanics for Dummies* by Steve McCaw, 2002-2007 ASB Education Committee Chair.



Past-President

Richard Hughes

One of the duties of the Past-President is to manage the awards process for the upcoming annual meeting. The ASB awards are listed below. Details for applying for these awards can be found on the ASB web page.



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 2015 Annual Meeting.

Recent winners are:

- 2014 Vijay Goel
- 2013 Kenton Kaufman
- 2012 Carlo DeLuca
- 2011 Scott Delp
- 2010 Farshid Guliak



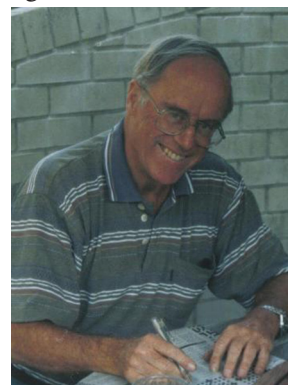
Giovanni Borelli
(1608-1679)

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 consists of an engraved plaque and a check for \$1,000. The application deadline is the abstract submission deadline for the 2015 Annual Meeting.

Recent winners are:

- 2014 Fred Yeadon
- 2013 Glenn Fleisig
- 2012 Jesus Dapena
- 2011 Joseph Hamill
- 2010 Darren Stefanyshyn



2014 Award Summary

Borelli Award

Vijay Goel,
University of Toledo

Jim Hay Memorial Award

Fred Yeadon,
Loughborough University



2014 Award Summary

Young Scientist Pre-Doctoral

Laura Chernak Slane,
University of Wisconsin-Madison

Post-Doctoral Young Investigator Award

Amber Rath Stern,
University of Missouri-Kansas City, and Engineering Systems, Inc.

Clinical Biomechanics Award

W. Brent Edwards, et al.,
University of Calgary

Journal of Biomechanics Award

Ata M. Kiapour, et al.,
Boston Children's Hospital, Harvard Medical School

President's Award

Kyle Martin,
University of Virginia

Past-President (cont.)

Richard Hughes

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 2015 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 2015 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 Conference, and submit their work for publication in Clinical Biomechanics. The award will be selected from submitted abstracts for the 2015 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 Conference, and submit their work for publication in Journal of Biomechanics. The award is selected from submitted abstracts for the 2015 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 2015 Annual Meeting. If more than one application is received by students of the same advisor, only one will be funded.

Past-President (cont.)

Richard Hughes

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. Budget 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.

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 attended at least three meetings of the society during the past five years, have strong support from two nominating ASB Fellows, have demonstrated significant service to ASB and expect to remain active in ASB, and have advanced the biomechanics profession in definitive ways (e.g., ASB honors and awards; published in refereed journals; books or book chapters; attainment of research grants). Nominations should be directed to me at rehughes@umich.edu by the annual meeting abstract submission deadline.



Additional 2014 Awards

Student Travel Awards

Bryon Applequist,
University of Nebraska at
Omaha

Owen Beck,
University of Colorado at
Boulder

Bradley DeForest,
University of Tennessee

Jana Jeffers,
University of Colorado at
Boulder

Binal Motawar,
University of Wisconsin-
Milwaukee

Caitlin O'Connell,
University of Pittsburgh

Ryan Hasenkamp,
University of Nebraska at
Omaha

Eric Pisciotta,
University of Nebraska at
Omaha

Zach Sievert,
Old Dominion University

Lisa Zukowski,
University of Florida

ASB Fellows

Don Anderson,
The University of Iowa

Tom Buchanan,
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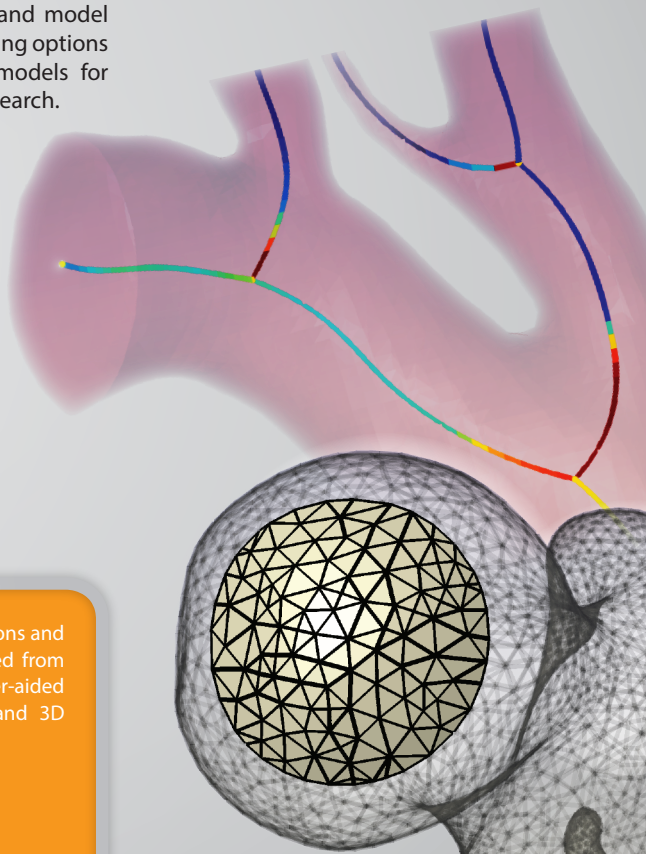
Simpleware is pleased to announce the release of version 7.0 of its industry-leading 3D image data visualisation, analysis and model generation software. Use an intuitive interface and scripting options to easily process data and generate CAD and CAE models for medical device, biomechanics and physiological flow research.

New and improved features of version 7.0 include:

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calculate effective properties of trabecular bone
- **New Centerlines Tool:**
better understand the structure of your data
- **New Medical Orientation Overlays:**
identify anatomical directions on slices

Simpleware develops industry-leading software solutions and services for the conversion of 3D images (as obtained from MRI, CT, micro-CT...) into high-quality Computer-aided Engineering (CAE), Computer-aided Design (CAD) and 3D printing models.

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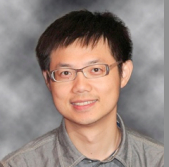
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Highlights from the 7th World Congress of Biomechanics brought to you by
Photographer Jing-Sheng Li and Editorial Assistant Cara Lewis





Communications Committee

Michelle Sabick



Now that the ASB website has been in its new format for over a year, it is time for me to clean up some small details and begin to add content. To that end, I would like to recruit a couple of ASB members who would be willing to officially help with the website. I am looking for two or three people to help out, and they can be either regular or student members.

Duties would include identifying additional content that could be added, soliciting or creating new content, and carefully logging errors and issues so that they can be systematically eliminated. This would be a great way to get some experience with the site, and to get a flavor for serving on the ASB Executive Board.

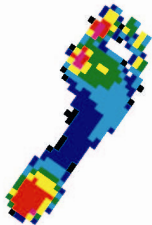

Next August, when we meet in Columbus, will be my last meeting as the Communications Committee Chair. Therefore, it would be great to identify someone who would be willing to take on the website once I am done. Please contact me at sabickmb@slu.edu if you want to get involved.





Find us on Facebook or Follow us on Twitter

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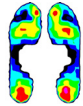
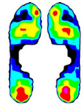


... *more* than a pretty picture; accuracy and quality in pressure distribution measurement.





Barefoot pressure platforms for both research and clinical applications.

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Program Chair

Rick Neptune



CALL FOR ABSTRACTS 39th Annual Meeting of the American Society of Biomechanics August 5-8, 2015

The 39th Annual Meeting of the American Society of Biomechanics will be held August 5-8, 2015 in Columbus, Ohio. The organizers of ASB encourage the submission of abstracts on the entire spectrum of biomechanics-related research including but not limited to gait, posture and balance, rehabilitation engineering, ergonomics, orthopedic mechanics, prosthetics, orthotics and exoskeletons, cellular, molecular and tissue mechanics, comparative biomechanics, motor control, sports and teaching. The program will include multiple parallel sessions, research symposia and thematic poster sessions, lab tours, tutorials, keynote lectures by [Dr. Allison Okamura](#) and [Dr. Bill Marras](#), best paper competitions (Clinical Biomechanics, Journal of Biomechanics), and honorary awards (Borelli, Hay, Young Scientist Pre-Doctoral, Young Scientist Post-Doctoral).

There is currently a call for innovative and impactful research symposia organized by ASB members. The proposal submission deadline is February 1, 2015. Please see the meeting website below for more details.

The abstract submission website will open on February 1, 2015 and abstracts will be accepted until 5:00 PM EST on March 15, 2015. Meeting information is available through the ASB website (<http://www.asbweb.org>) and the meeting website (<http://u.osu.edu/asb2015/>), including links for abstract submission, meeting registration, and details on the eligibility and nominating requirements for each of the awards.

Rick Neptune
2015 Program Chair

Diversity Committee

Kristin Zhao



At ASB annual meeting in Omaha, Nebraska, 2013, the seeds of a Diversity Committee/task force were formed. At the annual ASB Diversity luncheon, the membership discussed the need for actionable items that would move the Society toward a more diverse and inclusive environment. A group of ASB members attending the breakfast formed the ASB task force, led by task force chair Kate Saul, PhD (North Carolina State University). Under Kate's leadership, over the year leading up to the World Congress of Biomechanics in Boston, MA, the task force formulated and drafted the ASB Diversity Report. The participants in the original task force included:

Richard E. Hughes, PhD (Ex-officio), regular member, Orthopaedic Surgery, U Michigan

Rob Siston, PhD, regular member, Mechanical and Aerospace Engineering, Ohio State

Kristin Zhao, PhD, regular member, Physical Medicine and Rehabilitation, Mayo Clinic

Szu-Ping Lee, PhD, regular member, Physical Therapy, U Nevada, Las Vegas

Portia Flowers, MS, student member, Biomechanics and Movement Science, U Delaware

Rumit Kakar, PT, student member, Kinesiology, U Georgia

Lakisha Guinn, MS, student member, Kinesiology and Applied Physiology, U Delaware

Jennifer Bagwell, PT, DPT, student member, Biokinesiology and Physical Therapy, U Southern California

Rosemarie Figueroa, MSE, student member, Industrial and Operations Engineering, U Michigan

The [report](#) includes the following sections:

1. Define Diversity in the context of the ASB.
2. How can the ASB ensure continuity of effort on Diversity within ASB throughout the year and over multiple years?
3. What ideas have been proposed at previous Diversity Luncheons, and what ideas have led to action?
4. Identify additional ideas about what the ASB can do in the area of Diversity.

And establishes the following **Mission Statement**:

The ASB is committed to building a professional community that respects and pro-

Diversity Committee cont.

Kristin Zhao

motes diversity and inclusion. We strive to learn from the diverse perspectives of our membership as we seek common goals for the biomechanics community. As a Society, we seek to 1) support career development of all members to achieve their highest potential; 2) promote sound science and research Justice¹; 3) promote enhanced engagement in the Society of underrepresented groups through involvement in Society activities and dialogue with leadership; and 4) foster respect for diversity and inclusion in our community among our members and leadership.

At the ASB Business meeting following the WCB in 2014, the Executive Board and incoming President, Darryl Thelen, PhD, fully supported the continuation of the efforts of the task force in creating subgroups for a set of actionable items delineated in the report. Following the meeting, the task force selected a new chair, Kristin Zhao, PhD, with co-Chair, Kate Saul, PhD. The first efforts following the meeting were to formulate subgroups for the initial action areas of the task force as well as assign subgroup leaders. Subgroup leaders in the following action areas can be contacted by individuals interested in participating in the task force:

1. Establishment of diversity column and ongoing content for ASB Newsletter - Stacie Ringleb, PhD, sringleb@odu.edu
2. Establishment of diversity web presence and content - Lakisha Guinn, MS, lguinn@udel.edu; Silvia Blemker, PhD, ssblemker@virginia.edu
3. Self-organization of affinity groups for social and professional networking - Portia Flowers, PhD, flowerspp@health.missouri.edu; Rosemarie Figueroa, MSE, rosemfig@umich.edu
4. Promote increased diversity and inclusion of new ASB members - Szu-Ping Li, PhD, szu-ping.lee@unlv.edu; Matthew McCullough, PhD, mattbm@nc.at.edu

The ASB Diversity task force looks forward to communicating the exciting changes forthcoming to the membership of the Society, and receiving input and further participation as the task force organization unfolds. Please contact task force chair, Kristin Zhao, PhD, zhao.kristin@mayo.edu, or co-chair, Kate Saul, PhD, ksaul@ncsu.edu, with any suggestions, questions, etc. that you have regarding the task force.

¹As defined in The Belmont Report, <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>

"First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII — and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we've realized it's a brochure."

- Douglas Adams

President-elect

Paul DeVita



In search of a hypothesis...any hypothesis.

I was searching for a hypothesis the other day but I certainly did not want to find one. I searched through the entire November 2014 issue of *Science* and could not find the phrase, “We hypothesize,” or the phrase, “These data lead us to hypothesize,” or anything like these phrases. A few years ago I also did this search and found the same results in *Science*: zilch on hypotheses. Of course we might initially ask ourselves, “What’s wrong with *Science* today (or a few years ago)?” Then again we might ask ourselves, “What’s wrong with biomechanics today,” followed by, “Do we over-hypothesize or over-state the value and need for hypotheses?” I have for some time thought the correct question was the second and the correct answers are yes and yes.

Hypothesis testing is doubtless a valuable and fruitful scientific endeavor. But we do not always need to test hypotheses. We sometimes need to explore and search and kinda-figure-out-as-we-go and basically show the data because the data themselves are valuable. This is the lesson *Science* teaches us. The data are sometimes so fantastic that they are worth the price of admission. In contrast, hypotheses that state the obvious or have already been well supported are not worth this price. With apologies, I have in recent times read the hypothesis, “Old adults are weaker than young adults,” in the literature. To be sure, it is not always the authors’ preference to state this or similar hypotheses but it is sometimes forced upon them by the reviewers because the original manuscripts were criticized with, “did not test a hypothesis.” My point is that we should move biomechanics just a bit away from the need to always or so frequently test a hypothesis and towards the need to report incredibly important data that can be used to develop valuable and long lasting hypotheses. Which leads me to...

What is the nature of a hypothesis? It is not a guess about an expected outcome but as stated in the Oxford English Dictionary, “a supposition or conjecture put forth to account for known facts; especially in the sciences, a provisional supposition from which to draw conclusions that shall be in accordance with known facts, and which serves as a starting-point for further investigation...”. This idea demands that we first search for data and build enough “known facts” before we begin to hypothesize. Following this scientific approach will enable us to generate valuable hypotheses that are themselves new ideas and that will create even newer ideas. Let’s explore, let’s search, and yes, let’s even go fishing and data-snooping once in a while to develop sufficient knowledge (i.e., obtain enough good data) upon which to create superior hypotheses. Admittedly, it is difficult to imagine a successful NIH R01 application without a hypothesis but it is not hard to imagine a set of successful biomechanics papers sans hypotheses.

Of course I love biomechanics and I think biomechanics has improved and will continue to improve the quality of life worldwide. I just wonder a bit if we need to take a little step to the left and re-think our position on what seems to be an over-reliance on hypotheses. Yes, I did not want to find a hypothesis in *Science* because I wanted *Science* to teach biomechanics this little idea. I will gladly field any hard-hit criticisms and discuss any ideas you have on this topic, devitap@ecu.edu. Thank you.

President-elect cont.

Paul DeVita

A primary mission for our Society is to organize the ASB Annual Meeting which is “held for the dissemination of information and ideas among the members of the Society,” as stated in our ByLaws. We are quite meeting-healthy at this moment because both the 2015 and 2016 meetings have been set. We are meeting at The Ohio State University in Columbus, Ohio in 2015 (organized by Ajit Chaudhari, John Borstad, Rob Siston, Alison Sheets) and at North Carolina State University in Raleigh, North Carolina in 2016 (organized by Katherine Saul, Gregory Sawicki, and Mike Lewek).

The ASB Executive Board now invites proposals to host the Annual Meeting in the years 2017 and 2018. The proposals should identify the host institution or city, the local organizing committee, the meeting dates and provide details about the meeting site. I will be very happy to discuss hosting either meeting with any interested person or group and we can provide you a template for the proposal and also successful proposals from recent years. Please contact me at devitap@ecu.edu or (252) 737 - 4563. We will review proposals at the February meeting of the Executive Board. Previous proposals have been developed within about four weeks and with the assistance of university or community conferences services offices.

Hosting the meeting is a valuable service to the Society and is a great way to highlight your programs and institutions. Hey, it also gets you on The Meeting Map:



Locations of past ASB Annual Conferences, including those held as part of NA-COB, ISB or WCB. Yellow pins indicate sites that have hosted multiple meetings.



Umbrellas are for Tourists

William Ledoux

Happy Holidays everyone! By the time you read this, it will be after Christmas but hopefully before New Years. Thanks to all the ASB executive board members and volunteers who contributed to this newsletter, including articles by our current (Darryl Thelen, who compared the ASB and WCB), past (Richard Hughes, who reviewed all of the ASB awards) and future (Paul DeVita, who is searching for hypotheses) presidents. We also heard from Amy Lenz, our student representative, about all the activities at last summer's WCB. Our Treasurer, Karen Troy, and Secretary/Membership Chair, Andy Karduna, provided an update on the financial and membership status of our society. Cécile Smeesters, our Educational Committee Chair, reviewed the survey results from the WCB and Kristin Zhao updated the status of the ASB diversity committee. Communications Committee Chair, Michelle Sabick, is looking for website help and our Program Committee Chair, Rick Neptune, is calling for abstracts for our next meeting. Anne Silverman also reported on her Research Travel Grant. Finally, Cara Lewis generated a collage of WCB pictures and Dan Gales, put together a calendar of events. Thanks to all who contributed to this newsletter!

A brief update on the ASB archives project. I met with the ASB fellows at their annual breakfast at the WCB. The group expressed support for the project and Paul DeVita sent three boxes of files that he had inherited back in the early 90s while on the ASB Executive Board. Jill McNitt-Gray also shared with me a detailed electronic archive that Melissa Gross had compiled for the 25th anniversary of the ASB. If any long-time members have any physical or electronic content that you would like to share/offload/contribute, please contact me as I am working on generating an official ASB archive that will be hosted in a library.



2013 ASB Research Travel Grant Report: Anne Silverman

I am very grateful to the American Society of Biomechanics for the 2013 Research Travel Grant. This grant was used to support a growing collaboration between Colorado School of Mines (CSM) and the University of Nebraska Medical Center (UNMC). The Research Travel Grant allowed for a face-to-face meeting between my own research group and that of Dr. Max Kurz at UNMC. Myself and graduate research assistant Amy Hegarty traveled to Omaha, Nebraska for an intellectually stimulating meeting. During the visit, we toured clinical facilities and research laboratories. We also shared the work of our research program at CSM with scientists and clinicians at UNMC. Students from both the CSM and UNMC research groups gave presentations on their projects, which stimulated exciting discussion and feedback. In addition, we discussed current and future ideas for collaborative proposals and research projects. The collaboration between CSM and UNMC has grown as a result of this face-to-face meeting, and we expect that many future ASB conference submissions, journal papers and proposal submissions will result. For example, this meeting supported us in submitting a joint research proposal to NIH and we also presented a joint presentation at the WCB in 2014. I thank the ASB for making this trip possible, which has helped grow the productive collaboration between institutions. I would highly recommend that ASB members consider applying for this grant in future years.



Events Calendar

Dan Gales



NOTE:

For other listings of international conferences, please visit either the ISB's [web-site](#) or [Biomch-L](#).

National Association for Kinesiology in Higher Education

January 8-10, 2015
Clearwater, Florida, USA
Abstract deadline – past
nakhe.org/node/56

American Academy of Orthotists and Prosthetists

February 18-21, 2015
New Orleans, Louisiana, USA
Abstract deadline – past
www.academyannualmeeting.org/2015/

Gait and Clinical Movement Analysis Society

March 18-21, 2015
Portland, Oregon, USA
Abstract deadline – past
www.gcmas.org/

ACL Research Retreat VII

March 19-21, 2015
Greensboro, North Carolina, USA
Abstract deadline – past
www.uncg.edu/kin/anrl/aclretreat.html

Orthopedic Research Society

March 28-31, 2015
Las Vegas, Nevada, USA
Abstract deadline – past
www.ors.org/2015annualmeeting/

American College of Sports Medicine

May 26-30, 2015
San Diego, California, USA
Abstract deadline – past
www.acsm.org

American Physical Therapy Assoc.

June 3-6, 2015
National Harbor, Maryland, USA
Abstract deadline – tba
www.apta.org/NEXT/Overview/

International Conference on Neuro-Rehabilitation

June 11-12, 2015,
Copenhagen, Denmark
Abstract deadline – past
www.waset.org/conference/2015/06/copenhagen/ICNR

9th Triennial Symposium of Hand and Wrist Biomechanics International

June 15-17, 2015
Milan, Italy
Abstract deadline: January 15, 2015
www.hwbi.org/2015.html

National Athletic Trainers' Association

June 23-26, 2015
St. Louis, Missouri, USA
Abstract deadline – tba
www.nata.org/annual-meeting

International Society of Biomechanics in Sports

June 29-July 3, 2015
Poitiers, France
Abstract deadline – February 6, 2015
isbs2015.sciencesconf.org/

International Society of Biomechanics

July 12-16, 2015
Glasgow, United Kingdom
Abstract deadline – past
www.isbglasgow.com/

American Society of Biomechanics

August 5-8, 2015
Columbus, Ohio, USA
Abstract deadline – March 15, 2015
u.osu.edu/asb2015/



The 39th Annual Meeting of the
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