

FOUNDED IN 1977



www.asbweb.org

	μa
From the President	
Student's Rep	
Secretary/Membership	
Treasurer	
Education Committee	
Past President	
Awards Chair	
Meeting Chair	
Nat. Biomechanics Day	
Program Chair Program	
Chair-Elect	
Communications Chair	
President-Elect	
Diversity Committee	
Newsletter Editor	

2021 NEWSLETTER

FROM THE PRESIDENT Nicholas Stergiou

With the rising temperatures, and the greenness and colorfulness of nature around us, there is a strong sense that we are finally turning the corner with the pandemic. The CDC guidelines are getting friendlier and friendlier as vaccination has provided freedom. Hugs are finally back and



social interaction is getting back to normal. Science has provided a miracle with vaccines, tests, and drugs, and we should be so thankful for all of our colleagues who worked so hard in their laboratories to provide us with the necessary means to fight this battle.

However, caution is still necessary. Staying safe and healthy is still our primary concern. This is why ASB 2021 will be a virtual event. We are relying on the tremendous experience we gained last year and the great success of our vASB 2020 to organize this year's meeting. Young-Hui and his team are carrying us through again and I am so grateful that we have them on board. Alena and her team is putting forward a great program which I am certain you will really enjoy.

During this year the Executive Board has been very busy with multiple initiatives.
From bringing along Podium to improve our society and conference management, to
joining AIBME to enhance our capabilities and influence in terms of policy, and to
starting a mentoring network. However, I do not want to steal the thunder from our
Executive Board leaders as you will read the excellent progress they have made in
their areas in their corresponding pieces. I am just so thankful that I have been
blessed to work with such a great group of biomechanists. So, please join me in
thanking all these leaders, as well as their very active committees who are doing such
tremendous work for our society.

While this past year have challenged us in many different ways, I am proud to report that our scientific home, our American Society of Biomechanics, is stronger than ever and is moving forward to enhance our services and support for our members. Please keep safe and healthy, and I look forward to seeing you all virtually in vASB 2021.



STUDENT'S REP Evan Dooley

Hello again, from your student representative, Evan Dooley. The student committee has been hard at work over the winter working on interesting professional development opportunities and starting to get ready for the ASB conference coming up in August.





We have also added student chapters at University of Nebraska – Omaha, University of Minnesota - Twin Cities, University of Massachusetts -Amherst, and a North Carolina Joint Chapter including University of North Carolina – Chapel Hill and North Carolina State University. The purpose of ASB Student Chapters is to foster connections among ASB-affiliated students and faculty within and across universities. ASB Student Chapters serve to provide intellectual and professional development among students from a wide range of disciplines that contribute to the field of biomechanics. If you are interested in starting an ASB student chapter at your institution, feel free to reach out to me (asbstudentrep@asbweb.org) with any questions you may have. Additionally, feel free to join us for our Meeting of the Student Chapters at the annual conference. We will be sharing what the existing chapters have been working on this year, answering questions about starting chapters, and leaving plenty of time to meet students from other schools.

Speaking of conference news, we have received confirmation that the fanfavorite trivia hosting team will be back this year for round two of ASB Biomechanics Trivia, so be sure you're brushing up on your fun facts and National Biomechanics Day history to help bring your team to victory! Additionally, we have begun organizing both the Academic and Outside of Academic roundtables and will have hosts coming in to answer any and all questions you may have. Including, but not limited to: what's it like to get started in an industry job? What's it like to work for the government? What is involved in teaching in academia? Or even, how can I create my own academic brand?

I hope the summer is going well for all of you and please feel free to reach out about any ASB student related matters (asbstudentrep@asbweb.org). I look forward to continuing my work as your student representative for the coming year?



2021 Annual meeting website

SECRETARY/MEMBERSHIP

As I wrap up my term as Secretary, I want to thank the membership for giving me the opportunity to serve the Society in this role. It has been an honor to work to support ASB, get to know more of the membership, and improve



operations. I see ASB as my professional home and family, and I am so grateful to get to give back and work with such amazing colleagues who are enthusiastic about science and who value our field and, more importantly, each other.

Over the last three years, we have streamlined many of our membership processes, and improved our records of the important contributions made by our members on committees, supporting the annual meeting, and on the Executive Board. I believe the Volunteer database and annual records will help us engage more of the membership in the society activities and identify those who are already contributing their valuable time and expertise. We have also joined the AIMBE Council of Societies, which will help support us in science advocacy initiatives. Our support for new executive board members now includes an onboarding document to help orient members to the responsibilities of nonprofit organizations and the specific roles of the ASB board members, which will help maintain continuity from board to board. As we move some of the society management tasks to Podium, I know this support for Society continuity, institutional memory, and the membership will continue to grow. I look forward to supporting the incoming Secretary as we transition the member database to its new home with Podium so that the features and society records we have developed over the last three years are maintained, and to ensure a smooth transition for the members.

Please feel free to reach out if I can assist you in anyway. I look forward to seeing you at the Annual Meeting, this year virtually and for years to come!



Figure 1. 2021 Membership Category Pie Chart



meeting website



2021 Annual meeting website





Figure 2. 2021 Discipline Graph



Figure 3. 2021 Demographics Pie Chart



Figure 4. 2021 Ethnicity Graph

SECRETARY/MEMBERSHIP, CONT. Katherine Saul



Figure 5. 2021 Race Pie Chart



Figure 6. 2021 Disability Graph



2021 Annual meeting website



Jill Higginson

ASB Executive Board 2020-21

President

Nicholas Stergiou, PhD University of Nebraska Omaha, NE 68182 (402) 554-3247 nstergiou@unomaha.edu

Past-President

Michelle Sabick, PhD Saint Louis University St. Louis, MO 63103 (314) 977-8282 michelle.sabick@slu.edu

President-Elect

Elizabeth Hsiao-Wecksler, PhD University of Illinois at Urbana-Champaign Urbana, IL 61801 (217) 333-3415 ethw@illinois.edu

Treasurer

Jill Higginson, PhD University of Delaware Newark, DE 19716 (302) 831-6622 *higginso@udel.edu*

Secretary/ Membership Chair

Katherine Saul, PhD North Carolina State University, NC 27695 (919) 515-1273 ksaul@ncsu.edu There are a few items to report from the Treasurer's remote desktop:

- We are in a strong financial position with a balance of \$145,334 in our operating budget and \$269,771 in long-term investments. Thank you for renewing your memberships!
- We have accepted a generous gift of \$50,000 from Nike Inc. to support ASB efforts to increase the diversity of biomechanics as a discipline and increase access to opportunity for under-represented biomechanists.
- ASB is transitioning to Podium for conference and association management services. This will offload some book-keeping and bill-paying responsibilities, simplify the transition to a new Treasurer after each election, and allow more focus on strategic priorities of the society instead of day-to-day operations.
- The next order of business is to write award checks—my favorite part of the job!

I look forward to reconnecting with you at the upcoming annual meeting. Happy summer!







EDUCATION COMMITTEE

As the world slowly returns to normal, I'm hopeful that our society will also return to normal! As the chair of our Education Committee, I've seen first-hand how much COVID-19 has affected travel, conference planning, research protocols, funding, and more. Many of our past



Grant-In-Aid awardees have had to ask for extensions, most regional meetings we've funded have been postponed or canceled, and we are about to embark on our second (and hopefully final!) virtual annual meeting. Still, our society has forged ahead through the turmoil, and I am hopefully that we will be getting back to normal soon, especially in the Education Committee!

Speaking of back to normal, and with the hopeful return of normal travel: The Education Committee oversees the review of regional meeting costs. proposals and supports up to \$2,000 to assist with meeting costs. **Proposals to host a meeting are due by September 30th.** Please consider hosting a regional meeting this year, or in the future! The executive committee has placed a lot of priority on regional meetings due to their focus on students. Further information for regional meeting support can be found on the ASB website (https://asbweb.org/asb-regional-meetings/). I've said "normal" five times now, so I'd just like to point out that I'm aware of this, and not normally so repetitive ;-).

The Education Committee stays busy year-round, and most recently we have completed the review of proposals submitted to the 2021 American Society of Biomechanics Grant-in-Aid (GIA) program. The GIA program is a mechanism for our society to provide support to graduate students needing up to \$2,000 in funds to support research needs. Grant applications are due on January 15th of each year and application instructions are available on the ASB website (https://asbweb.org/competitive-grant-awards/). This year we received 18 applications and were able to award five \$2,000 awards. Special thanks to the GIA review team, and congratulations to our winners:

• Elizabeth Bell, University of Maryland, College Park, Advisors: Jae Kun Shim, Ross Miller. Modeling Consequences of Pregnancy on Knee Joint Loading and Future Joint Health.

• Margaret Coats-Thomas, Northwestern University, Advisor: Eric Perreault. Assessing contributions of muscular imbalance to shoulder osteoarthritis.

• John Davis, IV, Indiana University, Bloomington, Advisor: Allison Gruber. Estimating Achilles tendon force during real-world running using wearable sensors.

• Kellie Halloran, University of Illinois, Urbana-Champaign, Advisor: Mariana Kersh. High intensity interval training in wheelchair users.

• David Ortiz-Weissberg, University of Southern California, Advisor: Kornelia Kulig. Neuromuscular Effects of Achilles Tendinosis: Investigations into Muscle-Tendon Unit Structure and Function.



ASB Executive Board 2020-21

Education Committee Chair

Louis DiBerardino, PhD Ohio Northern University Ada, OH 45810 (419) 772-4206 *I-diberardino@onu.edu*

Communication Committee Chair

Tarang Jain, PhD Northern Arizona University Flagstaff, AZ 86001 (928) 523-7305 Tarang.Jain@nau.edu

Newsletter Editor

William Ledoux, PhD VA Puget Sound Seattle, WA 98108 (206) 768-5347 wrledoux@uw.edu

Program Chair

Alena Grabowski, PhD University of Colorado Boulder, CO 80309 (303) 492-4009 Alena.Grabowski@ colorado.edu



ASB Executive Board 2020-21

Program Chair-Elect

Jason Franz, PhD University of North Carolina at Chapel Hill Chapel Hill, NC 27599 (919) 966-6119 jrfranz@email.unc.edu

Meeting Chair

Young-Hui Chang, PhD Georgia Tech Atlanta, GA 30332 (404) 894-9993 yh.chang@ap.gatech.edu

Diversity Chair

Ajit Chaudhari, PhD The Ohio State University Columbus, OH 43210 (614) 293-2409 Ajit.Chaudhari@osumc.edu

Awards Chair

Melissa Morrow, PhD Mayo Clinic Rochester, MN 55905 (507) 266-3400 morrow.melissa@mayo. edu

Student Representative

Evan Dooley University of Virginia Charlottesville, VA 22904 (434) 924-8994 dooley@virginia.edu

EDUCATION COMMITTEE, CONT.

In preparation for being ready to submit applications for 2022, be sure that all student applicants—and their advisors—apply for, or renew their ASB memberships well before the January 15th grant deadline. To be considered eligible, both the student and advisor must be a current member with 2022 dues paid upon the submission deadline or the application will not be considered. Those wishing to become new ASB members should do so during the fall to allow plenty of time. Again, more information on GIA applications can be found on the website (https://asbweb.org/competitive-grant-awards/).

As a faculty member at an undergraduate institution, undergraduate education is my primary focus most days. I was elated when approached by colleagues from similar institutions about a tutorial focused on undergraduate research, which you can find at this year's virtual conference! Undergraduate research is an amazing way to enhance students' education, and convince them to stay for graduate school! If you are unable to attend, or are eager to attend a different tutorial (we have three this year!), please reach out. For more traditional teaching help, don't forget to check out (or contribute to) the Teaching Repository (http:// asbteachingrepository.herokuapp.com/login) Finally, as you begin preparing for teaching in the fall, I would urge you to think about how you might turn your classroom activities into research. I'd love to see a very large contingent of teaching-related abstracts at next year's meeting!



Virtual 45th Meeting of the American Society of Biomechanics





2021 Annual meeting website

Twitter: @ ASB2021_ATL

PAST-PRESIDENT Michelle Sabick

I will pass my Past-President's baton to Nick Stergiou in August at our annual meeting, so this is my last newsletter column as a member of the ASB Executive Board. I am pleased to have been able to have serve ASB over the past three years, which presented a number of challenges, from a reckoning with #MeToo and



#BlackLivesMatter to the unexpected turbulence of dealing with a global pandemic and two virtual conferences. Through it all, ASB has remained true to its mission to broaden the impact of biomechanics research and to expand scientific opportunities to people of all walks of life.

When coming to the end of an important project, it is human nature to honestly take stock of what you have accomplished and what remains to be done. I am proud of what our Society has accomplished during the last three years, and confident that our incoming slate of leaders will continue that positive trajectory. Most of the projects that I have worked on have not been splashy, and many will not even be immediately obvious to the general membership. However, the organization is stronger and will be more effective moving forward due to the combined efforts of many dedicated volunteers who serve on the Executive Board and its committees.

This year, ASB hired a professional management company to support the Society's functions and help organize our conferences. This is part of the effort to professionalize the management of our society so that members of the Executive Board can focus more on strategy and outcomes and less on transactions. That should leave more time to grapple with how best to enhance our diversity efforts, how to better support our early-career members, and how to accommodate new student chapters, expanded mentoring opportunities, and affinity groups. At the annual Business Meeting this year we will also unveil the new logo design, which is part of our effort to provide some consistency to reinforce our identity as an organization without losing the unique parts of ASB that makes it the professional home for many of us.

I would like to thank the members of this year's Nominating Committee, Julia Choi and Erika Nelson-Wong, who helped me put together a strong and diverse set of candidates for the ASB elections. I would also like to thank all of those who were brave enough to run for elected positions. Regardless of who ultimately wins, I know the Society is in amazing hands. I also need to thank the members of the ASB Fellows Selection Committee who identified a great set of new ASB Fellows who will be inducted this year, and the current leaders of the Council of Fellows who are working with me to better define the role and selection of Fellows for the future. Finally, my sincere thanks to Missy Morrow, who has done an amazing job of managing the ASB awards nomination and selection processes. Missy's dedication and organization made my year as Past-President bearable, and I look forward to formalizing the position of Awards Chair on the Executive Board so we can continue to enhance our awards and recognize our talented members. I also need to thank Wendy Murray and Brian Umberger, who preceded me in the presidential line and started many of the important initiatives that I have has the pleasure of supporting during my tenure.

I look forward to seeing you all virtually in August. Please make sure to tune into the Annual Business Meeting to learn more about our new Society identity and to learn more about our new Fellows and this year's award winners.

AWARDS CHAIR

Melissa (Missy) Morrow

Once again in my second year as Awards Chair, it was an honor to oversee the management and selection of the 2021 ASB award winners. The applicants were exceptional, and I congratulate all of the winners on their accomplishments. I sincerely thank all the award



committee members who contributed to the review of applicants during this continued difficult time. Please note that we will have two Borelli Talks this year, and many other inspiring Awards talks to enjoy during the 2021 conference.

Our 2021 Award Recipients are presented below:

Awards that honor an individual for their contributions to the field of biomechanics:

Borelli Award: Glenn Fleisig, PhD, American Sports Medicine Institute

Fleisig Borelli Award Tal: Wednesday, August 11th, 1:00 PM Eastern

This is the most prestigious honor given by the ASB. The award recognizes outstanding career accomplishment and is awarded annually to an investigator who has conducted exemplary research in any area of biomechanics. This year's

Borelli award winner is Glenn Fleisig, PhD. After earning engineering degrees from MIT and Washington University, Glenn was hired in 1987 by the newly created American Sports Medicine Institute (ASMI) to create and head up the research department. Glenn was just 25. While serving as ASMI's research director, Dr. Fleisig earned his PhD from UAB. Under Dr. Fleisig's guidance for the past 34 years, ASMI has become the preeminent research center for sports biomechanics and sports medicine. Fleisig has published 200 scientific articles, book chapters, and books in collaboration with colleagues at ASMI and other institutions. He has delivered 350 presentations throughout the world and has been interviewed for thousands of stories by the media. Research studies by Fleisig and his co-investigators have quantified the biomechanics of sports motions, clinical outcomes and return to sport after orthopaedic surgery, biomechanical strength of human joints before and after surgery, and risk factors for injury. A specific focus and strength of this research has been baseball biomechanics. Dr. Fleisig is ranked by Expertscape as the top expert in the world on baseball science and medicine.

Baseball biomechanics has grown beyond Dr. Fleisig's research at ASMI to other institutes, universities, and baseball organizations. Recognizing this growth, Dr. Fleisig created the American Baseball Biomechanics Society in 2020 to provide valid, valuable information and set standards in baseball biomechanics. There are already more than 200 members and 16 corporate sponsors of ABBS, with its second annual meeting scheduled in conjunction with the 2021 ASB meeting.





2021 Award Summary

Borelli Award Glenn Fleisig, American Sports Medicine Institute

Jim Hay Memorial Award Peter Weyand, Southern Methodist University

Founders' Award Karen Troy, Worcester Polytechnical Institute

Jean Landa Pytel Award Jianhua (Jerry) Wu, Georgia State University

ASB Early Career Achievement Award (Formerly the Young Scientist Post-Doctoral Award Erin Mannen, Boise State University

ASB Pre-doctoral Award (formerly the Young Scientist Pre-Doctoral Award)

Katie Knaus, University of Virginia



2021 Award Summary

Borelli Award Glenn Fleisig, American Sports Medicine Institute

Jim Hay Memorial Award Peter Weyand, Southern Methodist University

Founders' Award

Karen Troy, Worcester Polytechnical Institute

Jean Landa Pytel Award

Jianhua (Jerry) Wu, Georgia State University

ASB Early Career Achievement Award (Formerly the Young Scientist Post-Doctoral Award Erin Mannen, Boise State University

ASB Pre-doctoral Award (formerly the Young Scientist Pre-Doctoral Award)

Katie Knaus, University of Virginia

AWARDS CHAIR, CONT. Melissa (Missy) Morrow

In addition to finding answers, Dr. Fleisig has contributed to policy and guidelines for sports safety as injury research advisor for Major League Baseball, chair of the USA Baseball Medical &Safety Advisory Committee, and safety consultant for Little League Baseball. Epidemiology research from ASMI has led to pitch count limits in amateur baseball throughout the world.

Dr. Fleisig has collaborated with and mentored hundreds of sports biomechanists and students during his career, with a philosophy that teamwork leads to optimal success for all. Glenn has been an active member of the American Society of Biomechanics since 1990 and has recently been named as a fellow of ASB.

Jim Hay Memorial Award: Peter Weyand, PhD, Southern Methodist University

Hay Award Symposium: Thursday, August 12th, 1:00 PM Eastern



The Jim Hay Memorial Award recognizes originality, quality, and depth of biomechanics research that address fundamental research questions relevant to the extraordinary demands imposed in sport and exercise. In 2021, the Hay Committee has elected to award the Jim Hay Memorial Award for Research in

Sports and Exercise to Dr. Peter Weyand, PhD. Dr. Weyand holds the Glenn Simmons Endowed Professorship of Applied Physiology and Biomechanics in the Department of Applied Physiology and Wellness at Southern Methodist University where he also serves as the Director of the Locomotor Performance Laboratory. Prior to his current appointment, Dr. Weyand directed research efforts at Harvard University's Concord Field Station, a large animal facility specializing in terrestrial locomotion and the Locomotion Laboratory of Rice University. His research subjects through the years have included antelope, emus, rodents, and professional athletes with and without limb amputations.

Dr. Weyand's scholarly work focuses on mechanics, metabolism and performance at the whole-body level. His work is well-known to academics and professionals spanning numerous fields and has often moved from experimentation into practice due to his ability to identify key performance determinants and sound implementation strategies. His career-long devotion to teaching and mentoring students has been frequently recognized, including by Harvard University, which awarded him the Joseph Levenson Prize for superb undergraduate teaching.

Dr. Weyand's scholarly expertise on the mechanical basis of motion and performance has led to him serve as a lead investigator in a number of high-profile projects. These include the "Michael Johnson, Wired Athlete" project prior to the 2000 Olympics, the "Physics of Basketball Flopping", and the Olympic eligibility cases of amputee sprinters Oscar Pistorius and Blake Leeper considered by the International Court of Arbitration for Sport in Switzerland.

AWARDS CHAIR, CONT. Melissa (Missy) Morrow

Founders Award: Karen Troy, PhD, Worcester Polytechnical Institute

Award Session Presentation: Wednesday, August 11th at 11:00 AM Eastern

The Founders' Award was established in 2017 to recognize scientific accomplishment in biomechanics and excellence in mentoring and is open to investigators of all disciplines within ASB. The 2021Founders' Award winner is, Karen L. Troy, PhD,

who is a Professor of Biomedical Engineering with an affiliate appointment in Mechanical Engineering at Worcester Polytechnic Institute. She earned dual BS degrees from Washington University in St. Louis in Systems Science and Mathematics and Biomedical Engineering. She completed her PhD in Biomedical Engineering at the University of Iowa in the Orthopaedic Biomechanics Laboratory, where she worked on large animal surgical models (emus). Dr. Troy completed a postdoc and then joined the faculty at the University of Illinois at Chicago before moving to her current institution in 2013. She directs the Musculoskeletal Biomechanics Lab (MBL), which studies how mechanical loads (or lack thereof) can be both beneficial and harmful to bone, and aims to understand what conditions influence whether a load helps or hurts a person. Through her work in mechanistic clinical trials, she has also developed, refined, and applied techniques to noninvasively measure skeletal structure, loading, and mechanical behavior. Dr. Troy's research addresses three different aspects of skeletal health and its interaction with mechanical loading environment: (1) bone health after spinal cord injury (SCI); (2) mechanisms governing bone adaptation in healthy adults; and (3) bone stress injury in running athletes. Over her career she has worked individually with over 130 undergraduate students on long-term research and design projects, and has mentored 12 Master's, 6 PhD students, and 3 postdoctoral fellows. Within her University she directs the Biomedical Engineering Graduate Program and has served as a mentor to new faculty members. Within the ASB, she created the Junior Faculty Research Award while serving as Treasurer, has served as a mentor for several years, and was a member of the Education Committee. Within the Orthopaedic Resarch Society she chaired the New Investigator Mentoring Committee and currently serves as Education Council Chair, a Board of Directors-level position that oversees all career development programming.

Jean Landa Pytel Award for Diversity Mentorship in Biomechanics: Jianhua (Jerry) Wu, PhD, Georgia State University

Award Session Presentation: Wednesday, August 11th at 11:00 AM Eastern

The Jean Landa Pytel Diversity Mentoring Award, started 2019, recognizes the long-term impact of mentoring on both the careers of individual scientists, including women and

individuals from other traditionally under-represented backgrounds in ASB, and the ultimate betterment of our society as a whole. The 2021 Pytel award winner is Jianhua (Jerry) Wu, PhD, who is an Associate Professor in the Department of Kinesiology and Health at Georgia State University. Dr. Wu received his BS degree in mechanical engineering from Zhejiang Science and Technology University in China, his MS degree in mechanical engineering from Donghua University in China, and his PhD degree in biological systems engineering from University of California, Davis. Dr. Wu also received a post-doc training in motor





2021 Award Summary

BorellI Award Glenn Fleisig, American Sports Medicine Institute

Jim Hay Memorial Award Peter Weyand, Southern Methodist University

Founders' Award Karen Troy, Worcester **Polytechnical Institute**

Jean Landa Pytel Award

Jianhua (Jerry) Wu, Georgia State University

ASB Early Career Achievement Award (Formerly the Young Scientist Post-Doctoral Award Erin Mannen, Boise State University

ASB Pre-doctoral Award (formerly the **Young Scientist Pre-Doctoral Award**)

Katie Knaus, University of Virginia



2021 Award Summary

Borelli Award Glenn Fleisig, American Sports Medicine Institute

Jim Hay Memorial Award Peter Weyand, Southern Methodist University

Founders' Award Karen Troy, Worcester Polytechnical Institute

Jean Landa Pytel Award

Jianhua (Jerry) Wu, Georgia State University

ASB Early Career Achievement Award (Formerly the Young Scientist Post-Doctoral Award Erin Mannen, Boise State University

ASB Pre-doctoral Award (formerly the Young Scientist Pre-Doctoral Award)

Katie Knaus, University of Virginia

AWARDS CHAIR, CONT. Melissa (Missy) Morrow

development and rehabilitation in the School of Kinesiology at University of Michigan, Ann Arbor. Since joining Georgia State University in 2007, Dr. Wu's research has been focusing on (a) understanding the biomechanical patterns of movement in children with and without disabilities and (b) investigating the effect of physical intervention on motor and cognitive development in children with disabilities such as Down syndrome and cerebral palsy. Dr. Wu is the director of the Biomechanics lab and the director of the Center for Movement and Rehabilitation Research at Georgia State University. He has been mentoring both undergraduate and graduate students from various academic backgrounds such as exercise science, biology, physical therapy, rehabilitation medicine, and mechanical engineering. His students are from various racial/ethnic backgrounds including Caucasian, African American, Hispanic, and Asian, resonating well with the diversity feature of Georgia State University, one of the most diverse universities in the United States. Dr. Wu and his students have delivered almost 100 oral/poster presentations at the national and international conferences and published more than 40 research articles. His research has been supported by National Institutes of Health and private foundations.

ASB Early Career Achievement Award: Erin Mannen, PhD, Boise State University

Awards Session Presentation: Thursday August 12th at 11:00 AM Eastern

Dr. Erin M. Mannen is an Assistant Professor and serves as the Director of the Boise Applied Biomechanics of Infants (BABI) Lab in the Department of Mechanical and Biomedical Engineering at Boise State University in Idaho.

She earned her PhD in mechanical engineering from the University of Kansas, completed a Post-Doctoral Fellowship in the Center for Orthopaedic Biomechanics at the University of Denver, and began her faculty career in the Department of Orthopaedic Surgery at the University of Arkansas for Medical Sciences. Dr. Mannen's BABI Lab team uses in vivo human motion experimental techniques to study how babies move and use their muscles in common positions and commercial products to understand the impacts on safety and musculoskeletal development. Her passion for baby biomechanics was inspired by her own children, Jay (6) and Lucy (4). In her free time, Dr. Mannen enjoys the great Idaho outdoors with her husband Drew and kids.

ASB Pre-Doctoral Achievement Award: Katie Knaus, PhD, University of Virginia

Awards Session Presentation: Thursday August 12th at 11:00 AM Eastern

Katie Knaus recently completed her PhD in Biomedical Engineering at the University of Virginia. She also received her BS in Mechanical Engineering and Physics from UVA. Her research focuses on skeletal muscles and their

interactions with soft tissues allowing humans to perform important functions. She developed computational models to investigate structure-function relationships in complex muscle-tissue systems. This modeling work extends current understanding of typical biomechanical function and was used to examine multiple applications of dysfunction associated with changes that occur in aging. Katie is also accomplished in teaching and co-instructed Biomechanics with her advisor, Dr. Silvia Blemker.





AWARDS CHAIR, CONT. Melissa (Missy) Morrow

Katie is passionate about biomechanics outreach and has led National Biomechanics Day and other events for K-12 and undergraduate students. Katie has been active in many leadership roles at UVA and in the field of biomechanics, including serving as the ASB Student Representative from 2016-2018. She enjoys reading biomechanics textbooks and is always a fan of biomechanics fun facts. Katie has recently accepted a postdoctoral research position in Bioengineering at the University of California San Diego.

Competitive Grant Programs:

Opportunities for Faculty Members

The **Junior Faculty Research Award** is a \$5,000 grant that can be used to generate pilot data and support early-career investigators. The 2021 JFRA recipient is Brittany Heintz Walters, PhD, Seattle University. Dr. Heintz Walters will be investigating, "Design and evaluation of a soft robot for hand rehabilitation."

Opportunities for Student Members (note GIA and Diversity Travel were reported by the Education and Diversity committee chairs, respectively)

Student Travel Awards are offered to help students attend the ASB annual meeting. Without an in-person meeting this year, winners are receiving free registration for the 2021 meeting. To be eligible, one must be an ASB student member and must have authored an abstract for presentation at the annual meeting.

Awards that are judged based on abstract submissions for the annual meeting:

Journal of Biomechanics and Clinical Biomechanics Awards:

Awards Session Presentation: Thursday August 12th at 11:00 AM Eastern

The **Journal of Biomechanics Award** recognizes substantive and conceptually novel mechanics approaches explaining how biological systems function. The Clinical Biomechanics Award recognizes outstanding new biomechanics research targeting a contemporary clinical problem. Both awards are sponsored by Elsevier Science, Ltd., publishers of the Journal of Biomechanics and Clinical Biomechanics. Top scoring abstracts from the initial program review were first compiled into a list for further review. A review committee was formed and asked to identify 2 finalists based on the significance and potential impact of the work, the potential for the work presented in abstract form to be expanded into a full-length journal article, and the innovation/creativity of the work. The winner of the award will be decided at the meeting. A note about the 2021 review process: after the top 10 abstracts were identified from the initial program review, management of this award was transferred to Past-President Michelle Sabick due to a conflict with the Awards Chair and a top-ranked abstract.



2021 Award Summary

Borelli Award Glenn Fleisig, American Sports Medicine Institute

Jim Hay Memorial Award Peter Weyand, Southern Methodist University

Founders' Award Karen Troy, Worcester Polytechnical Institute

Jean Landa Pytel Award

Jianhua (Jerry) Wu, Georgia State University

ASB Early Career Achievement Award (Formerly the Young Scientist Post-Doctoral Award Erin Mannen, Boise State University

ASB Pre-doctoral Award (formerly the Young Scientist Pre-Doctoral Award)

Katie Knaus, University of Virginia



AWARDS CHAIR, CONT.

Melissa (Missy) Morrow

The finalists for the Journal of Biomechanics award are:

The metabolic cost of walking balance control and adaption in young adults <u>Shawn Ahuja</u> and Jason R. Franz

Exploring the functional boundaries and metabolism of triceps surae forcelength relations during walking Callum J. Funk, Rebecca L. Krupenevich, Gregory S. Sawicki, and Jason R. Franz

The finalists for the Clinical Biomechanics award are:

Imu-derived ergonomic metrics measured during daily life may differentiate manual wheelchair users with spinal cord injury with and without rotator cuff pathology progression

<u>Omid Jahanian</u>, Meegan G. Van Straaten, Brianna M. Goodwin, Stephen M. Cain, Jonathan D. Barlow, Naveen S. Murthy, and Melissa M. B. Morrow

Redistribution of muscular work by children with cerebral palsy walking in crouch

<u>Anahid Ebrahimi</u>, Michael Schwartz, Jack Martin, Tom Novacheck, and Darryl Thelen

2021 Award Summary

Travel Award Winners

Whitney Wolff, University of Michigan

Haneol Kim, Georgia State University

Tasnuva Alam, Georgia State University

MEETING CHAIR Young-Hui Chang

Hello fellow ASB members, although we are still dealing with a global pandemic, so far 2021 seems to have provided some hope of a light at the end of a very dark 2020 tunnel. We still have a long way to go, but vaccines are being delivered and parts of our society are beginning to look a



little more normal again. Hope is a good thing to sustain us through tough times, but it doesn't make for good conference planning. As you know by now, we made the decision to again go fully online for the 2021 conference. This was a pragmatic decision given the public health and fiscal uncertainties related to planning a mass gathering during a pandemic (we are still unraveling some of the legal issues from the 2020 meeting!). We are now about a month away from our 45th annual meeting and I have to say that hope is starting to gain traction as I look over our final plans and program. It looks to be a great meeting and I hope to see everyone there in cyberspace. Please, don't forget to register to gain access to all the amazing tutorials, workshops, and networking events.

So, what will be new and what will be familiar this year? We will again be using CrowdCompass as our main conference platform. You get into CrowdCompass via web browser (recommended) or mobile app. You will need to log on to access all meeting content, your personalized calendar, and interact with other attendees and sponsors. You can read a live twitter feed on the meeting Social Wall (use #vASB2021) to follow along with your favorite biomechanics influencer. Links from your CrowdCompass calendar will take you to Zoom meeting rooms for all oral talks (podium track sessions, keynotes, business meetings, and other general sessions).

We took your feedback for more live interaction during poster sessions and are expanding our use of SpatialChat for our poster sessions, exhibitor booths, and many of our social events. Posters, sponsors, social events, and general hangout areas will be available in SpatialChat rooms grouped by theme and event. Posters will be up all meeting long so you can view them at your leisure. You can also use these rooms to meet up virtually with folks to take a break. There should be plenty of space, so there is no need to sit on the floor around the one power outlet! For those who have not tried it yet, SpatialChat is a live video streaming platform that allows you to 'move' around the room and interact with others. What distinguishes SpatialChat from other virtual platforms is that your audio stream is linked to your proximity to others. That means a single SpatialChat room can have numerous conversations going at once. You will only hear those that are 'close to you' in the room much like in a real conference hall. This also means the return of thematic posters—a favorite at ASB meetings. CrowdCompass and Zoom should work fine with your mobile devices. But, we recommend using a computer web browser for the best experience in SpatialChat as mobile devices are not currently supported. Free demo rooms are available on SpatialChat if you want to try it out now before the meeting.

Lastly, I'd like to give thanks to the Atlanta conference organizing crew (Greg Sawicki, Aaron Young, Owen Beck, Boris Prilutsky, and Lena Ting), program chair, Alena Grabowski, and the program committee for all of their hard work. Jenny Leestma and Chase Rock have (again) been incredibly helpful with website and graphic design. The ASB executive board members who have provided steady leadership and support for our society through difficult times. I'm also grateful for our industry sponsors for their sustained support. Please check out their exhibits to see their latest, greatest products.

To stay updated on #vASB2021 conference info, please check the conference website often, and follow us on Twitter (@ASB2021_ATL) or Facebook (@ASBiomechanics).



2021 Annual meeting website



National Biomechanics Day and the American Society of Biomechanics

Hello to all our ASB Friends and Colleagues,

As the world awakens, we all emerge a bit differently than we were one and a half years ago. National Biomechanics Day has also changed and now presents itself as both a Biomechanics STEM- and STEAM-based outreach program and also a funding source supporting outreach and growth for Biomechanics. After five successful years, NBD has become part of the Biomechanics firmament through the efforts of so many of you and of our colleagues around the world. NBD Thanks everyone for your energetic support.

Our outreach work, i.e., your outreach work, changed from in-person events to various forms of virtual and online experiences. The only roadmap we had for this departure from our previous efforts was your creativity and desire to continue working with young people and to introduce Biomechanics to these future scientists and practitioners. And we say loudly that your creativity was incredible!! This creativity is on full display on our website listing dozens of groups who created new, online learning centers for Biomechanics. Please scroll down the page and click some of the labs, their videos, and their online lectures and demonstrations. Some of our favorites are the Carnegie Mellon University event that even included cephalopod biomechanics, Auburn University's series of Biomechanics lectures that each included activities for the high school viewers, Virginia Tech's full slate of Biomechanics activities including Tik Toc dancing and gait Biomechanics at home, and the combined effort of UNC-Chapel Hill and NC information and materials into their NBD 2021 event. We admire so much the effort all groups made to producing fun, informative, and educational virtual experiences for the next generation of Biomechanists.

NBD, through its parent organization, The Biomechanics Initiative, expanded its mission this year with grant programs designed to aid Biomechanists in producing NBD events. We partnered with our own ASB in the Black Biomechanists Outreach Through NBD program, with ISB in the NBD Outreach For Women in Biomechanics, with the Brazilian Society of Biomechanics in the Brazilian Biomechanics Experience, and with The Australian & New Zealand Biomechanics Society and Books of Discovery in the Australian Transportation grant program. Through these programs and with the contributions from these groups, we distributed over \$10,000 for creating new NBD events around the world. "Around the world," included Nigeria, Australia, Brazil, New Zealand, and the U.S. It is really through our loyal sponsors that we are able to now support individual Biomechanics people and groups and we think, make a substantial contribution to our chosen science. We concentrated on underserved people this year and we will continue to work with various groups in the coming years. We thank the 31 applicants for submitting proposals and congratulate the 13 grant recipients and we look forward to larger programs and more applications next year.

In this past year of virtual reality, we also hosted our first NBD Sponsors' Technology Forum. Seven of our tech sponsors participated by demonstrating their products and ideas to many biomechanists through 8-minute informative presentations. We plan to hold our second Sponsors' Technology Forum in July. Please watch for announcements.

We have introduced Biomechanics to well over 31,000 high school students since 2016 and we hope to double this number in 2022! Gotta think big, of course. We again thank all NBDers around the world and we look forward working with you on new endeavors next year.

Sincerely,

Paul DeVita, Lisa MacFadden, and Felipe Carpes, NBD Board of Directors

National Biomechanics Day Goes International

NBD Nations Armenia Australia Belgium Brazil Canada Chile Colombia Czech Republic Egypt France Germany

NBD celebrates Biomechanics

with 30 Nations 31,404 High school students 951 High school teachers And a **BIG IMPACT**

JOIN NBD 2021!!!

Hong Kong India Iran Iraq Ireland Malaysia Mexico New Zealand Nigeria Pakistan Portugal Saudi Arabia Singapore South Africa Spain Taiwan The Netherlands **United Kingdom United States**

National Biomechanics Day <u>April 7, 2021</u>

PROGRAM CHAIR Alena Grabowski

I'm very excited about the virtual ASB 2021 scientific program and look forward to virtually seeing everyone in August. The program committee and I have developed interactive programming that is focused on delivering high-quality scientific presentations and facilitating discussions. The virtual program will be aimed at promoting diverse perspectives within



biomechanics. Below are a few highlights from the upcoming program:

Keynotes from: Dr. David Hu, who has expertise in comparative • biomechanics and locomotion and has earned two Ig Nobel prizes for Physics, and Dr. Cara Wall-Scheffler, who has expertise in the fields biomechanics, locomotor energetics, telemetry physiology, paleontology, archaeozoology, and behavioral ecology, and studies how women in particular have a rare (among mammals) ability to work both efficiently (energy per unit mass) and economically (total energy) when carrying loads.

- 12 Rapid Podium Sessions on Zoom
- 3 Poster Sessions on SpatialChat
- The 3-min thesis competition
- Professional development sessions

2 Symposia: The Evolving Role of Biomechanics for Improving the Health and Performance of Cancer Patients and Personalized Neurorehab -Can patientspecific measures of motor-learning inform intervention?

- 2 Borelli Keynotes •
- Founders, Pytel, and Hay Award sessions •
- A workshop on how to be a culturally competent mentor

3 Tutorials: Federal funding opportunities for biomechanics research;

Teamwork makes the dream work: how to build data repositories; and Fostering symbiotic relationships between undergraduates and productive biomechanics research

• Many social events

We are in the process of scheduling the poster and podium sessions and finalizing the program. Though I wish I could see you all in person, I look forward to visiting with you virtually this summer!

The ASB conference will be held virtually Aug. 10-13, 2021. We look forward to an exciting program and to sharing biomechanics research!



Virtual 45th Meeting of the American Society of Biomechanics





2021 Annual meeting website



2021 Annual meeting website

Twitter: @ ASB2021_ATL

PROGRAM CHAIR-ELECT

Let's not get too far ahead of ourselves. Our 2021 annual meeting is going to be an exceptional opportunity to reconnect and gain inspiration from the hard work and discoveries of our friends, colleagues, and trainees. But, perhaps you, like me, like to plan ahead. Or, perhaps you, also like me, are anticipating



our eventual return to in-person conference experiences. Well, it may be early, but we are working hard behind the scenes to bring you an outstanding scientific program and (hopefully!) in-person meeting experience at the 2022 North American Congress of Biomechanics (NACOB) in the Canadian capital of Ottawa (https://nacob.org/). You can save the date now for August 21-25, 2022. The core planning committee thus far consists of myself as your ASB Program Chair, Dr. Janessa Drake serving the same role for the Canadian Society of Biomechanics (CSB), and our outstanding local meeting organizers, Drs. Daniel Benoit and Ryan Graham from the University of Ottawa. Most of the congress will be held at the Shaw Centre, an impressive and beautiful facility that, despite our plans for an in-person meeting, offers a virtual tour here: https://www.shaw-centre.com. I look forward to sharing more information with you in the coming months, including symposium and abstract deadlines, keynote speakers, and a host of activities to enrich your stay. Now, please return to your normally scheduled programming and preparation for our 2021 annual meeting. See you soon!



NORTH AMERICAN

CONGRESS ON BIOMECHANICS OTTAWA 2022



Find us on Facebook or Follow us on Twitter

Facebook: American_Society_of_ Biomechanics

Twitter: @Am-SocBiomech

COMMUNICATIONS COMMITTEEE

Summer greetings from Flagstaff, Arizona. We will all be getting together/sharing research at the vASB 2021 conference and similar to previous years, our webpage, Facebook page, and Twitter feed will become more active with meeting related information. We will be LIVE-STREAMING the keynotes,



symposia, podium/3-minute thesis presentations, and more so that the conference attendees can access the latest biomechanics-related research in the safety and convenience of their home. We will also be posting the session videos/ presentations from this year's conference at the ASB2021 YouTube playlist. For updated information, visit the conference site and connect with us through social media, as we will be sharing more up-to-date information from the conference organizers as well as ASB affiliated groups.

We recently transitioned to the new website and I am happy to report that we have moved all of our content from the old site to the new site. Please visit the ASB website, if you have not done so and I am sure that you will find many of the new features beneficial. We are also in a process of unveiling an ASB logo redesign soon that will complement our new site with a modern look. We continue to maintain a strong presence on our facebook and twitter platforms (>6200 followers) and are always happy to promote the biomechanics related events. We are always finding new ways of serving our members, based on what they tell us they need. We will be happy to promote our members and biomechanics-related research/news. If you have ideas or suggestions on how ASB can better reach out or serve its members, please get in touch with us.

I am looking forward to the exciting program at vASB2021 and virtually meeting many of you. This will be my last newsletter article as communications chair. Srikant Vallabhasouja from Elon University will be taking over as Communications Chair at our summer meeting. This has been an extraordinarily challenging year, but I would like to thank you for your incredible support to ASB. As always, I am appreciative of people behind the scenes who have helped to run the things smoothly and make ASB stronger.

Celebrating the 21st century's breakthrough science



....Supports National Biomechanics Day



National Biomechanics Day April 7, 2021

PRESIDENT-ELECT Elizabeth Hsiao-Wecksler

As we are about to hold our second virtual Annual Meeting and make transitions in the ASB Executive Board at the end of the Meeting, I would like to take this opportunity to thank those that were involved. Many thanks to those leaving the Executive Board: Michelle Sabick for her three years in the





2021 Annual meeting website

Twitter: @ ASB2021_ATL

presidential line, Kate Saul as Secretary and Membership Chair, Alena Grabowski as Program Chair of the 2021 Annual Meeting, Young-Hui Chang as the Meeting Chair of the 2020 & 2021 Annual Meetings, Tarang Jain as Communications Chair, and Bil Ledoux as Newsletter Editor for the past 9 years. Thanks also to Nick Stergiou as the first "entirely virtual" ASB president!

Also, as a member of the Council of Fellows, I want to remind ASB members of the new "Up and Comer" award available to post-docs and early career faculty members intended to foster mentoring and networking with ASB Fellows of similar research interests. To encourage diversity and inclusion in biomechanics, applicants should identify as being from an underrepresented group with preference given to applicants from institutions that are HBCU/minority serving. Thanks to residual funds from the NIH for supporting the 2020 Annual Meeting, we anticipate an unprecedented opportunity to support 3 post-docs and 3 early career faculty members. Eligibility and application details are under the Competitive Awards tab on the ASB website. Applications are due July 19, 2021 at 11:59 pm Pacific Daylight Time.

I look forward to serving as your president of ASB during the coming year. Please feel to reach out to me (ethw@illinois.edu) with any questions, issues, or suggestions.





2021 Annual meeting website

Twitter: @ ASB2021_ATL

DIVERSITY COMMITTEE Ajit Chaudhari

Greetings from the ASB Diversity Committee—we hope you are having a relaxing summer and are able to recharge as we continue our recovery from the COVID-19 pandemic. Our committee has been busy!



While we are meeting virtually again this year, we were still able to provide support for several students, post-docs, and junior faculty to attend this year's annual meeting through the ASB Diversity Travel Award program. Our thanks to the NIH for supporting these awards this year!

At this year's meeting the committee has two thought-provoking and inspiring events planned. At the Diversity event (8/10 @ 6:30pm ET) we have a panel discussion on "Advocating for Change in Your Environment." There will be plenty of time for audience involvement. Panelists are:

- Celeste Coltman, Assistant Professor at University of Canberra, Australia
- Christopher Arellano, Assistant Professor at University of Houston
- Li-Shan Chou, Professor and Department Chair at Iowa State University
- Lesia Crumpton-Young, Professor and Provost at Morgan State University

At the Women in Science event (8/12 @ 6:30pm ET) we will have a presentation by two esteemed experts followed by facilitated small-group discussions. The topic is "Impact of the COVID-19 Pandemic on Women in Academia." Our speakers are:

- Leslie Gonzales, Associate Professor at Michigan State University
- Joy Gaston Gayles, Professor at North Carolina State University

Several affinity groups have also organized diversity-focused events at the meeting as well —please check the program or the affinity groups' social media channels for details.

Lastly, as mentioned in the previous ASB newsletter, the Committee has been working on full implementation of the Code of Conduct. This effort has led to several important improvements in ASB policies to create greater clarity regarding specific processes, including the addition of an Investigation Policy, Honors and Awards Policy, and Glossary of Terms. For complete details including the full text of these policies, please see https://asbweb.org/about. Most importantly, we have added a web- and telephone-based reporting tool to facilitate both anonymous and non-anonymous incident reporting, at http://asbweb.ethicspoint.com. This reporting line is available 24 hours a day, 365 days a year. For detailed descriptions of how reports are received and addressed, please see the Code of Conduct.

NEWSLETTER EDITOR William Ledoux

After 9 years on the ASB executive board, this is my final newsletter; counting the 8+ years I helped previous editors, I have been involved in about half of the total ASB newsletters. It is time for a change! As such, I am stepping down and Cara Lewis is starting this summer; she has been helping me edit for years, so





One more note related to a project I was working on. In the spring of 2019, 15 boxes of ASB archives, weighing some 450 lbs, were shipped to the Penn State Library to be cataloged and housed in their Special Collections archives. (The Penn State Library system generously covered the shipping costs.) Covid-19 created a backlog, but according to the archivists, they have "started the process of generating the 'accession record'—who created the material, who sent the material, how much material exists, what contents the material contains, and any other details about the condition of the material that seem relevant. The next step is generating the 'MARC record'—which involves creating a record of the materials in the Library's catalog according to professional standards, stabilizing the materials in acid-free containers, labeling them, and providing a permanent location. Once the MARC record exists in the library's catalog, any user can discover the materials online and/ or request the materials in the library reading room. Since these are organizational records, the Penn State Library will also generate an online "Finding Aid" (again according to a set of professional standards) that includes more information to help users navigate the materials. The finding aid will typically take longer to publish and appear later than the initial record. This is because a finding aid will require the archivists on our campus to identify/describe materials which is a much more intensive process that results in a better tool for discovery." This entire process might take years to complete, but in the end, as we have now transitioning to mostly electronic records, this catalog will provide a valuable look into the first 30 years of the ASB.

As I leave you, I want to thank Cara Lewis and Dan Gales for their help these last 9 years, and previous newsletter editors Michelle Sabick and Andy Karduna for giving me such a strong foundation. I am looking forward to my next chapter with ASB!







Virtual 45th Meeting of the American Society of Biomechanics



Spreading the goodness of biomechanics one click at a time...



www.asb2021.me.gatech.edu

