Bioengineering Division News

Table of Contents

SETTING THE STANDARD

ASME BIOENGINEERING DIVISION

Spring/Summer 2024

Message from the 2023-24 Chair

Alisa Clyne
BED Chair

We are pleased to bring you the 2024 ASME Bioengineering Division Annual Newsletter! The Bioengineering Division Executive Committee has been hard at work over the past year, developing and implementing a strategic plan that will strengthen our community. This plan includes enhancing our existing activities and structures, as well as growing into new areas. I'd like to share with you the highlights of our new strategic plan through this newsletter, as well as at our ASME Bioengineering Division open meeting (to be held Tuesday June 11th from 12 – 1 PM in Maple Lawn C).

First, the ASME Bioengineering Division (with assistance from the Technical Committee chairs) updated our mission and vision statements. The proposed new statements are:

Our mission is to foster bioengineering research and innovation, creating a vibrant global community that advances biology and healthcare through engineering solutions. We are driven by a commitment to educate, mentor, and inspire engineers. We bridge academic, industry, and government communities, cultivating collaboration and shared knowledge.

Our vision is to be the eminent hub for cutting-edge, innovative engineering solutions in biology and healthcare, establishing ourselves as the go-to source for the global bioengineering community

We then developed four short-term goals, which are designed to be implemented in the next 1-3 years, that will support our mission and vision.

1. Transition the Summer Bioengineering Conference back to ASME leadership.

Last year, ASME and the SB3C Foundation came to an agreement to co-run the Summer Bioengineering Conference (SBC) for the next three years, with the ASME Bioengineering Division taking a leadership role in conference organization. Our short-term goal is to organize successful conferences from 2025 – 2027 by maintaining the conference size, attendee diversity and satisfaction, and reasonable attendance cost. This year, we held an open nomination process for conference chair and committee members. A sub-committee then selected a conference chair for 2025, as well as a conference chair for 2026 (who will serve as co-chair for the 2025 conference). We are pleased to announce that Grace O'Connell will serve as 2025 conference chair, and Keefe Manning will serve as 2026 conference chair. We are excited to work with them and their committees to continue the amazing SBC programs and traditions, as well as add new elements to our summer conference.

2. Create year-round activities for the ASME Bioengineering community

Our second short-term goal focuses on providing year-round programming to keep our members engaged in our community, including those who do not regularly attend the summer conference. We've increased interactions between the technical

committee chairs and the executive committee, specifically by holding online meetings to share ideas between the ASME Bioengineering Division chair and the technical committee chairs. This year, we created four online programs that were organized by the technical and specialty committees. The Education committee hosted three webinars on Generative Artificial Intelligence, including its use in both engineering education and research. The Industry committee hosted a mini-symposium with virtual networking on Computational Modeling in the Biomedical Industry, featuring Marc Horner from the FDA. The DDRR committee hosted a webinar on Advancing STEM alongside Engineers with Disabilities, and the Women's Networking Group hosted a webinar on Entrepreneurship featuring start-up CEO Elyse Dickerson. Recordings of many of these sessions are available via our ASME Bioengineering Division website. I encourage you to check them out and make suggestions to your technical committee chairs about ideas for future programs.

3. Establish diversity committee

Shortly before the Covid pandemic, the ASME Bioengineering Division Executive Committee established an Inclusion and Diversity committee. In the spring of 2023, we included an Inclusion and Diversity committee chairperson to the ASME Bioengineering Division elections. Ellie Rahbar was elected to this position. She has attended our executive committee meetings this year, and she established the Diversity and Inclusion committee with prior conference DEI chairs and student leadership. The goals of the committee are to recruit, retain, and promote our diverse membership; promote an atmosphere of inclusion and mutual respect; and establish an active appreciation of the value of diverse backgrounds and perspectives both in research and engineering education. The committee is continuing to support the Diversity Mentoring Events held at the summer conference and is planning to offer more year-round events in partnership with ASME. The work of this committee is more important now than ever, and we look forward to their future plans.

4. Re-imagine IMECE involvement

In addition to the summer research conference, the ASME Bioengineering Division also organizes a track at the ASME International Mechanical Engineering & Congress & Exposition (IMECE). For more than a decade, this track has been run by Ahmed Al-Jumaily. This year, he asked the ASME Bioengineering Division Executive Committee to find new leadership for the track, and the ASME organization is also re-designing IMECE to enhance its impact. We therefore have a unique opportunity to re-imagine how we want to run the Bioengineering track at IMECE. We started brainstorming ideas on how to make IMECE a successful, complementary conference to our summer conference. This year's IMECE will feature our own Susan Margulies as a Keynote speaker and Guy Genin as a plenary speaker. We hope you will consider presenting your research at IMECE, and we welcome your input into how we can make IMECE a valuable experience for our Bioengineering Division members!

Finally, we synergized input from our members into two long-term goals that will take us 5-10 years to accomplish. Our first long term goal focuses on enhancing the diversity of our membership, which includes expanding our outreach locally and globally to broaden who is included and engaged in our bioengineering community. Possible activities include promoting interactions with international colleagues, initiating educational and mentorship programs to inspire the next generation of bioengineers, and creating an ASME Bioengineering Division medal named after a female engineer or scientist. Our second long term goal focuses on increasing our

involvement with industry, government, and other ASME Divisions to foster interdisciplinary collaboration and knowledge exchange. Possible activities include industry focused sessions at research conferences, continuing education for industry and government members, and new entrepreneurship programs. These long-term goals will strengthen our division so that we can better serve all our members.

We are excited about the future of the ASME Bioengineering Division, and we hope you will join us in building the future by taking part in technical committee activities, voting in our current election, and running for a leadership position in the future! Please also consider submitted your papers to our amazing ASME journals: The Journal of Biomechanical Engineering (Editors Vicky Nguyen and Ross Ethier) and the Journal of Medical Devices (Editors Xiaoming Shawn He and Carl Nelson).

I am looking forward to SB3C 2024 "Innovation without Borders: Uniting Ideas, Technologies, and Communities," to be held from June 11-14, 2024 at the Grand Geneva Resort in Lake Geneva, Wisconsin. A big thanks to conference chair Brittany Coats, program chair Spencer Lake, the entire conference organizing committee, the SB3C foundation, and Boscov's Travel for all the work they did to put together this conference. SB3C 2024 highlights include talks from plenary speaker Umut Gurkan and the winners of the Fung, Grood, Lissner, Mow, Nerem, and Woo medals, as well as technical sessions in biotransport, fluid mechanics, DDRR, education, solid mechanics, tissue and cellular engineering. SB3C will also have special sessions in cancer mechanics, emerging tools for cell mechanics/mechanobiology, fiber mechanics, and speech biomechanics. I'm particularly excited about the Diversity mentoring workshop with Meag-gan O'Reilly, as well as the student networking events led by our Student Leadership Committee. I look forward to seeing many of you in a few weeks in Wisconsin.

Our ASME Bioengineering Division Executive Committee has worked hard all year, and I want to thank them for their service to our community. The Committee includes Shannon Stott (Past Chair), Spencer Lake (Secretary), Guy Genin (Secretary-Elect), Parisa Saboori (Treasurer), Matthew Fisher (Member in Charge of Member Affairs), Craig Goergen (Member at Large), Josue Sznitman (Member at Large), Jessica Oakes (Member at Large), Robert Hauck (Member at Large), Ellie Rahbar (Inclusion and Diversity), Zhenpeng "ZP" Qin (Student Relations), Yaling Liu (Communication and Outreach Specialist), Shelby White (Chair, Student Leadership Committee), Luke Mattar (Co-Chair, Student Leadership Committee). And an extra special big thanks to our ASME Staff liaison, April Tone.

I hope you take time next year to engage with our ASME Bioengineering Division, whether that's by attending the SBC or IMECE conferences, joining a webinar, engaging with your technical committee, or volunteering to help us achieve our short and long term goals. I've gained so much from my colleagues in this community, and it has been an absolute pleasure to serve as chair this year. I look forward to seeing many of you at SB3C 2024!

ASME BIOENGINEERING DIVISION

Spring/Summer 2024

Message from the SB3C Chair

We hope everyone is gearing up for SB3C 2024 in Lake Geneva, WI! We have had an amazing response to the call for abstracts and are excited to offer 50 stellar scientific sessions, 5 special sessions, and 10 workshops centered around our theme Innovation without Borders: Uniting Ideas, Technologies, and Communities. Our plenary speaker is Dr. Umut Gurkan, Wilbert J. Austin Professor of Engineering at Case Western University. His inspirational presentation will highlight the development of affordable point-of-care diagnostics, microfluidic systems, and more, all toward the goal of improving equitable global access to diagnostics and personalized medicine.

In addition to this themed content, we are delighted that 6 ASME medal awardees will give feature presentations at the conference and be awarded their medals at the closing banquet. Further, many of your favorite programs from last year will be returning including the Translational Technology Pitch competition, the Future Faculty Poster Session, the Diversity Mentoring Workshop, networking events, student events, and more. New this year, we will offer a Kids Camp that parallels conference programming to allow attendees to bring their families. Families and attendees can enjoy the petting zoo, waterpark, frisbee golf, horseback riding, scooter rental, nearby beach, and more. All of this is thanks to the generous contributions of 20+ (and counting!) sponsors, exhibitors, and advertisers.

Brittany Coats

SB3C Conference

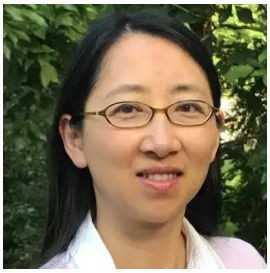
We are grateful for the continued support from this community and look forward to seeing you at Grand Geneva, June 11-14, 2024! Visit sb3c.org to learn more and stay up to date on all events.

ASME BIOENGINEERING DIVISION

Bioengineering Division Technical Committees

Technical Divisions and Research Committees
By joining a Technical Divisions you are given access to a collaborative community of peers, leadership & volunteer opportunities, career development, numerous student activities, technical/research conferences, and the chance to contribute to the publication of technical journals. Find out more about Technical Divisions.
About Technical Divisions and Research Committees

Biotransport



Sihong Wang
Committee Chair
2023-2024

We would like to welcome Chris Rylander as our newly elected co-Chair. At SB3C 2024, the Biotransport committee will honor Dr. Kenneth Diller's life-long achievements in Biotransport/Bioheat transfer as a scientist, engineer and mentor by hosting a special session. We have been continuing the recent initiation of matching seminar speakers with seminar hosts in the biotransport/bioheat transfer group to especially promote the junior members' research achievements. We would like to congratulate Xiaoming He to start his term as the Editor of the ASME Journal of Medical Devices and be elected as a member of the European Academy of Sciences and Arts, John Bischof as the recipient of the ASME Heat Transfer Medal, Zhenpeng Qin as the recipient of Dr. Horace Furumoto Innovations Professional Development Young Investigator Award from the American Society for Laser Medicine and Surgery, Lyle Hood and Zhenpeng Qin being elected as senior members of the National Academy of Inventors, Davalos, Rafael being elected as a Fellow of Biomedical Engineering Society, NSF CAREER recipients: Govind Srimathveeravalli, Jifu Tan, Johannes Weickenmeier and Rana Zakerzadeh,

Christopher Rylander
Committee Co-Chair
2023-2024

NSF Mid-CAREER Advancement Award recipient: Nicole Hashemi, and Devashish Shrivastava on publishing his book: Application of Heat in Oncology: Principles and Practice.Please follow @BioTScience for the latest news, position, and announcement related to biotransport. Thank Govind Srimathveeravalli, Rebecca Sandlin, and Shannon Tessier for running this channel.

Sihong Wang, Ph.D
Committee Co-Chair
Christopher Rylander
Committee Co-Chair

ASME BIOENGINEERING DIVISION

Design, Dynamics, & Rehabilitation

Anita Singh
Committee Chair
2023-2024

The Design Dynamics and Rehab (DDR) Technical Committee is looking forward to our in-person gathering at the 2024 Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C2024) to be held at the Grand Geneva Resort, Lake Geneva, Wisconsin from June 11–14, 2024. We will be holding our hybrid committee meeting on Tuesday, June 11th from 2-2:50 pm CT. Location details will be available online at www.SB3C.org. Zoom details will be sent the email list shortly. Please join us and engage in discussions of our ongoing activities, and the future direction of our committee. This is an open meeting, and everyone is interested in DDR topics (Biomechanics of Human Motion, Cardiovascular and Musculoskeletal Device Design, Design of Medical Technologies, Design of Global Health Solutions, Rehabilitation and Assistive Technologies, and other related topics) are encouraged to attend.

We are also excited to share that this year we have two podiums and one poster session. Please review the program book for details of time and location. Our Undergraduate Design Competition (UDC) session, organized by current DDR's Chair, Anita Singh, will be held on Friday, June 14 at 10 AM CT. Even if you do not have a team submitting a project, we strongly recommend a visit to this session – the devices being developed by undergraduates are amazing! Finally, we'd like to send a thank you to all our DDR members who reviewed abstracts and continued to show their support. Please contact the chairs Anita Singh, Ph.D. (anita.singh0001@temple.edu) or Antonia Zaferiou, PhD (azaferio@stevens.edu) to have any additional members join our e-mail list for updates or if you have any questions.

Antonia Zaferiou
Committee
Co-Chair
2023-2026

Anita Singh, Ph.D
Committee Chair & Undergraduate Design Competition Chair
Antonia Zaferiou
Committee Co-Chair

Lucas Timmins
Committee Co-Chair
2022-2025

Fluid Mechanics

Alejandro Roldan-Alzate
Committee Chair
2022-2025

The Biofluids Technical Committee (TCOM) chairs and theme leaders were again focused this past year on implementing the collective feedback received from members during our annual committee meeting held at SB3C 2023 last June. Several important topics were discussed at this meeting, including the interaction with clinicians and their view on Biomechanics, Bioengineering, & Biotransport, with the idea of increasing the awareness of the importance of a multidisciplinary approach in translational research. From these discussions, we are excited to host a workshop titled Biomechanics, Bioengineering, & Biotransport (B3): Clinician Perspective on Thursday, June 13 from 2:00-3:30pm in Linwood.

For SB3C 2024, over 100 abstracts were submitted across various biofluid mechanics topic areas for review. We appreciate our community members submitting their latest works and would like to thank those who assisted in reviewing the abstracts. At this year's conference, 9 scientific sessions (54 podium presentations) have been organized across a diverse range of scientific and clinical topics, and our TCOM will feature 50 posters from the biofluid research domain. We are excited that a diverse group of junior faculty members and trainees will chair these sessions to promote thoughtful engagement among the session speakers and attendees.

We are excited that our TCOM members continue to be recognized and honored with ASME-BED divisional awards. Congratulations again to Drs. Alison Marsden and Jessica Oakes for receiving the Mow Medal and Fung Early Career Award, respectively, in 2023! We are excited that Dr. James Moore will receive the Nerem Award in 2024. Congratulations, Jimmy! We want to continue seeing our community members being recognized for their outstanding contributions, so please consider nominating colleagues for these divisional awards.

Lastly, we will hold our annual TCOM meeting at SB3C 2024 (see the program for date, time, and location) and look forward to engaging with community members. See everyone in Lake Geneva in June!

Alejandro Roldan-Alzate, Ph.D.
Fluid Mechanics Committee Chair

Lucas Timmins, Ph.D.
Fluid Mechanics Committee Co-Chair

ASME BIOENGINEERING DIVISION

Solid Mechanics

Kristin Myers
Committee Chair

The solids technical committee will meet on Tuesday, June 11, 2024 from 3:00 – 4:00 pm in Maple Lawn CD. We look forward to seeing you there. Our Solids committee is running over 38% (21/55) of the sessions, with tracks including the following topics: Cardiac Biomechanics; Cartilage Structure, Lubrication & Mechanics; Cell-Microstructure Interactions in Cardiovascular Mechanics; Growth, Modeling & Repair; Head & Injury Mechanics; Joint Biomechanics; Ligament & Tendon Mechanics & Imaging; Mineralized & Soft Tissue Mechanics & Modeling; Reproductive Biomechanics; Nano, micro, tissue & multiscale solid mechanics; Spine & Disc; and Valvular Biomechanics. We will also include the following emerging topics: Biomechanics & Mechanobiology; Computational Modeling & Imaging in Soft Tissue Mechanics; Extracellular Matrix Adaption, Alterations, & Therapy in Soft Tissue Mechanics; and Lung, Bladder & Breast Soft Tissue Mechanics. The following committee members are receiving awards: Adrian Buganza Tepole, Purdue University (Y.C. Fung Early Career Award); Marjolein C. H. van der Meulen, Cornell University (H.R. Lissner Medal); Thao (Vicky) Nguyen, Johns Hopkins University (Van C. Mow Medal); James E. Moore Jr., Imperial College London (Robert M. Nerem Education and Mentorship Medal); and Guy M. Genin, Washington University in St Louis (Savio L-Y. Woo Translational Biomechanics Medal). Several our members are also organizing the SB3C future faculty poster session. We give a sincere thanks to our theme chairs and those who served as abstract reviewers.

David Pierce
Committee Co-Chair

Kristin Myers, Ph.D.
Committee Chair

David Pierce, Ph.D.
Committee co-Chair

Alix C. Deymier
Committee *Co-Chair*
2023-2026

ASME BIOENGINEERING DIVISION

Tissue & Cellular Engineering

David T. Corr
Committee Chair
2023-2026

For the 2024 SB3C meeting, our members reviewed 99 abstracts (80 general submission, 19 Student Paper Competition), and TCE accounted for 6 finalists for the PhD paper competition, which represents ~17% of the finalists for the PhD paper competition. We would like to thank the theme leaders for engaging with the community and encouraging abstract submissions. This year we had a very strong pool of TCE submissions, allowing us to organize 7 scientific sessions within TCE – our largest number to date. The meeting will also feature a Special Session "Emerging tools for cell mechanics and mechanobiology", organized by TCE members Ming Guo and Guy Genin, that aims to bring together bioengineers, biophysicists, and biomaterial scientists to discuss recent advances and open questions in studying cell mechanics and mechanobiology in physiologically relevant multicellular contexts. As such, it looks like tissue and cellular engineering research will be well represented at this year's meeting!

The Tissue & Cellular Engineering (TCE) Committee will hold their annual meeting on Tuesday, June 11th from 2:00-2:50PM at the SB3C meeting, please check the program for room information. We will discuss past initiatives, ongoing activities, ideas for year-round engagement, and future direction of our committee in the ASME Bioengineering division. We will take this opportunity to recognize achievements of our members. This meeting is open to all conference attendees.

Please contact the committee chair or vice chair for further details or clarification.

Contact Info:

David T. Corr - TCE Committee Chair (2023-2026);
corrd@rpi.edu
Professor, Biomedical Engineering
Rensselaer Polytechnic Institute
Alix C. Deymier - TCE Committee Vice-Chair
(2023-2026); deymeir@uchc.edu
Assistant Professor, Biomedical Engineering
University of Connecticut Health Center

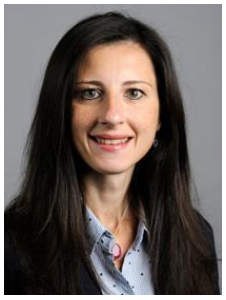
ASME BIOENGINEERING DIVISION

Education Committee

Victor Lai
Committee Co-Chair
2022-2025

Trends in higher education are constantly evolving, and generative Artificial Intelligence (GAI) has recently emerged as a significant topic of discussion, with educators debating whether and how to integrate GAI tools into classrooms and assessing their impact on student learning. In the Fall of 2023, the BED Education Committee organized a three-part webinar series titled "GAI in Research and Engineering Education," led by Dr. Corinne Henak (University of Wisconsin – Madison), Dr. Katie Knaus (Colorado School of Mines), Dr. Jacob Merson (Rensselaer Polytechnic Institute), and Dr. Sara Wilson (University of Kansas). Additionally, in May 2024, a special edition on Education in Biomechanics was published in the Journal of Biomechanical Engineering. This issue included 13 papers covering topics like new educational technologies, experiential learning, and best teaching practices. We highly encourage you to explore these insightful publications here!

For SB3C 2024, we are pleased to announce a podium session on Novel Approaches to Bioengineering Education and Outreach to be held on Wednesday, June 12 from 11:30am - 1:00pm, as well as a Workshop on Application of Generative AI in Teaching & Research on Thursday, June 13 from 2.00 – 3.30pm. We look forward to seeing and engaging in discussion with many of you at these sessions! If you are looking to get involved with the BED Education Committee, please join us at our annual TCOM meeting during SB3C on Tuesday, June 11 from 1.00 – 2.00pm.



Chiara Bellini
Committee Co-Chair
2022-2025

Please email us if you have any questions or suggestions or would like to get more involved with the Education Committee!

Dr. Victor Lai (laix0066@d.umn.edu)
Committee Chair
Dr. Chiara Bellini (c.bellini@northeastern.edu)
Dr. Zhongping Huang (zhuang2@wcupa.edu)
Committee Co-chairs

Zhongping Huang
Committee Co-Chair
2022-2025

ASME BIOENGINEERING DIVISION

Industry Committee

Ethan Kung
Committee Chair

Our committee planned four exciting events this year, one of which happened in March and three of which will occur during the 2024 SB³C Conference in Lake Geneva, WI. First up, on March 13th, 2024 we hosted a Virtual Mini Symposium on Computational Modeling in the Biomedical Industry, which was focused on the ASME V&V40 and related interactive discussions.

Next, following the notable success with our Translational Technology Pitch Competition last year at SB3C, this year we are expanding the competition to include two categories for student and faculty level contestants each. The competition will be in the same format as before, featuring finalists giving brief pitches focused on business startup concepts to a panel of academic and industry experts. The panel will then provide feedback regarding the technology, regulatory, and business paths forward. Following the pitch competition, we will have a Networking Mixer. This mixer will offer opportunities for attendees to connect with the finalists, panelists, as well as exhibitors of the conference.

Lin Li
Committee Co-Chair

Finally, we will have a Transitioning Between Academia and Industry workshop at SB³C 2024. This workshop will highlight how academic skills can be valuable in the industry, imparts lessons from those who have successfully made the transition, and offers guidance to students on preparing for a job search. The session will include two lightning talks and a Q&A panel with industry leaders. By participating in this workshop, attendees can gain a clearer vision of potential career paths beyond graduation.

Our committee meetings are open to anyone interested in being involved or staying updated on relevant activities. If you are unable to attend our meetings, you can join the committee by emailing us.

Dr. Ethan Kung
Committee chair
Dr. Lin Li
Committee co-chair

ASME BIOENGINEERING DIVISION

Student Affairs and Student Leadership Committee

The Student Affairs and Student Leadership Committee focus on engaging with student members during this year, and has organized both online and in-person events to facilitate these efforts. First, the Student Leadership Committee organized a Future Faculty Webinar that will allow individuals seeking faculty positions to gain insight from leaders in our field. The webinar will take place on May 24th, 2024 from 1:00-2:15 pm EST with planned questions regarding faculty hiring and career advice in addition to open Q&A with participants. Panelists include Dr. Jennifer Wayne, Dr. Jonathan Vande Geest, Dr. Stephanie Cone, and Dr. Axel Moore. The goal of Future Faculty Webinar is to provide opportunities for graduate students and postdoctoral associates who are seeking faculty positions to gain insight on the faculty hiring process and steps to prepare for their next career stage. Approximately 25 individuals preparing for faculty positions will be attending in addition to our four renowned panelists, members of the Student Leadership Committee, and members of the SB3C Organizing Committee.

The Student Leadership Committee is also actively organizing in-person networking events at SB3C 2024. These include social hikes, ASME BED student Networking Event, as well as student-led workshop.

Lastly, the Student Leadership Committee maintains an active online presence by regularly posting on the X (Twitter) account with handle @ASME-BED_Students. Additionally, a new Instagram account has been created to engage with student members in the community.

Meet members of the Student Leadership Committee:

Chair: Shelby White

Shelby leads the Student Leadership Committee in effectively serving the ASME-BED student body. She collaborates closely with the ASME-BED Executive and SB3C Planning Committees for events like the Future Faculty Webinar. Additionally, she presides over SLC meetings and provides guidance to fellow SLC chairs in managing their projects and duties.

Co-Chair: Luke Mattar

As the Co-Chair for the Student Leadership Committee (SLC), Luke provides support for SLC members' activities and efforts. Luke also participates in the ASME-BED Executive and SB3C Committee meetings to provide updates on the SLC's activities and helps organize webinars and workshops for the Bioengineering community (e.g., Future Faculty Webinar for individuals seeking faculty positions).

Secretary: Mari Domingo

As secretary, Mari organizes monthly SLC meetings. She is responsible for documenting the meetings, communicating within SLC, and keeping records during SLC events.

In-Person Networking Chair: Pete Gueldner

As the In-Person networking Chair, Pete provides support for in-person networking events at the SB3C meeting and facilitates connections between employers and potential employees. Topics include experimental design, grant and paper writing, fellowships, and time management (life/work balance).

Student Workshop Chair: Jeremy Warren

Jeremy, the student workshop chair, is responsible for organizing and managing a student-led workshop during SB3C. He ensures the event runs smoothly, facilitates discussions, and assists in moderating the workshop itself.

Social Events Chair: Alyssa Garrison

Our social events chair, Alyssa, organizes activities for the ASME-BED student body at SB3C to create a sense of community for our members. It is our goal that these events, including social hikes and the ASME BED Student Networking Event, facilitate our members finding peer mentors and friendships among like-minded students.

Online Networking Chair: David Jiang

David oversees and coordinates networking activities. This includes organizing events, facilitating connections, and managing platforms. These efforts create opportunities for members to connect, learn from each other, and advance their professional or personal goals within the online community.

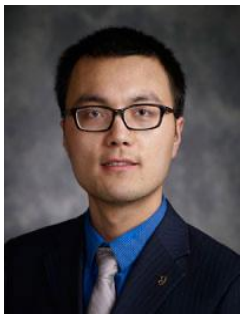
Social Media Chair: Gargi De

As the social media chair, Gargi created a new Instagram account and continues running the X account for ASME BED SLC. These accounts share information on the various deadlines for the conferences, events that might take place, job and fellowship opportunities, polls for grad panel events and updates from the SB3C Organizers. She was also involved in opening and handling the slack channels for participants looking for roommates and travel companions for the conference.

ASME BED Executive Committee, Member At Large Student Relations:

Zhenpeng Qin

As the faculty advisor, Dr. Qin oversees and mentors the student leadership committee, communicates important information from the SB3C organizing committee, and acts as a liaison between the student leadership, ASME Bioengineering Division, and SB3C organizing committee.



Women's Networking Group at SB³C

The Women's Networking Group brings together women faculty and industry leaders at the SB3C (Summer Biomechanics, Bioengineering and Biotransport Conference) to strategically promote a diverse and inclusive environment within the division. This group has been meeting since 2007 with the purpose to provide mentoring, networking and communication for women involved in the biomechanics field to help further their careers. It also seeks to promote the careers of women by identifying those that are eligible and deserving of awards and fellow status within ASME as well as other professional societies.

In April 2024, a mid-year webinar was hosted which featured Elyse Dickerson who is CEO of Eosera Inc., on her Journey into Entrepreneurship. She is a start-up CEO, with Fortune 500 experience, who helps small to mid-sized companies accelerate growth and build profitable businesses. She works extensively with highly regulated industries like pharmaceuticals and consumer healthcare products (CPG). I inspire management to uncover strategic opportunities in B2B and B2C markets. She has led a global business of $1.7B as well as scaled a company from scratch.

Editors' Note: ASME Journal of Biomechanical Engineering

C. Ross Ethier
Editor-in-Chief

Vicky Nguyen
Editor-in-Chief

The ASME Journal of Biomechanical Engineering had an exceptional year. The journal received 412 manuscript submissions in 2023, which was a significant increase from 2022. The acceptance rate in 2023 was 34%, which was more selective than in 2022. The average time a manuscript spends in review remains just over 3 months, which is in line with our peer journals. The Editors-in-Chief are committed to further reducing the time spent in review.

We sincerely thank all the Associate Editors (AEs) for their hard work and dedication. This year, the following AEs completed their terms: Antony Bowden, Sandra Shefelbine, and Sarah Vigmostad. We thank each of them for their service. We welcomed two new AEs: Peter Cripton and Byron Erath. We also welcomed back many AEs for a second term: Craig Goergen, Nicole Hashemi, Songbai Ji, Ethan Kung, Matthew Panzer, David Pierce, Francesco Travascio, and Tishya Wren. Persons at Associate Professor or higher rank, or with equivalent industrial positions/experience, are encouraged to contact Vicky and Ross if they are interested in possibly becoming an associate Editor for JBME.

The Journal has the pleasure of awarding the Richard Skalak Medal every year for the best paper published that year. The winner is selected by an independent external committee from a list of Editor's Choice papers, published in issue 146(9):090201, nominated by the Associated Editors. We thank the committee members, Victor Barocas (chair), Silvia Blemker, Joel Boerckel, Guy Genin, Keefe Manning, and Ian Sigal, for their hard work. The winner of the 2022 Skalak Medal was:Rooks, N. B., Schneider, M. T. Y., Erdemir, A., Halloran, J. P., Laz, P. J., Shelburne, K. B., Hume, D. R., et al., 2021, "Deciphering the "Art" in Modeling and Simulation of the Knee Joint: Variations in Model Development," ASME J. Biomech. Eng., 143(6), p. 061002.The committee also chose 2 honorable mentions:

Taebi, A., Vu, C. T., and Roncali, E., 2021, "Multiscale Computational Fluid Dynamics Modeling for Personalized Liver Cancer Radio Embolization Dosimetry," ASME J. Biomech. Eng., 143(1), p. 011002.
Witt, N. J., Woessner, A. E., Quinn, K. P., and Sander, E. A., 2022, "Multiscale Computational Model Predicts Mouse Skin Kinematics Under Tensile Loading," ASME J. Biomech. Eng., 144(4), p. 041008.

We welcomed Byron Erath as a social media director and Spencer Szczesny as a Diversity Advocate. We would like to acknowledge and thank Hannah Dailey, Daryl Dickerson, Byron, and Spencer for their considerable time and effort to improve the Journal's reach and impact. Byron is working with Hannah to publicize newly published papers on LinkedIn and X (@JBMEjournal). Darryl organized a highly successful JBME-sponsored workshop at SB3C 2023, entitled "Demystifying the Review and Editing Process". Spencer and Daryl are organizing a workshop, "Acknowledging and Addressing Bias in the Peer Review Process," for SB3C 2024. All are welcome to join and contribute to the conversation.

The journal published a special section and 3 special issues in 2023:

Current Trends in Impact and Injury Biomechanics (Guest Editors: Matt Panzer, Barclay Morrison, and Francisco Jose Lopez Valdes)

Education in Biomechanics (Guest Editors: Debanjan Mukherjee and Victor Lai).

Advancing Inclusivity in Biomechanical Engineering Research (Guest Editors: Sara Roccabianca, Daryl Dickerson, Matthew Bersi)

Annual Special Issue (Guest Editor: Joao S. Soares)

JBME welcomes proposals for special issues and review articles on emerging topics and on computational and experimental methods in biomechanics and bioengineering. Persons interested in organizing a special issue are encouraged to contact Ross and Vicky.

Editors' Note: Journal of Medical Devices

Xiaoming He
Co-Editor

As the new co-editors of Journal of Medical Devices (JMED), we wish to thank the previous editors, Rupak Banerjee and Will Durfee, for their longstanding support of the journal. We also express thanks to the editorial staff, associate editors, guest editors, reviewers, and authors who make this journal what it is. We look forward to serving the Bioengineering Division and the Design Engineering Division through our stewardship of JMED.

JMED is a unique international forum for highlighting research on the development and characterization of medical devices and systems for biomedical applications. Of interest are devices of all scales from quantum to nano, micro, and macro; and for all biomedical applications including experimental, diagnostic, therapeutic, and interventional usages. JMED publication formats include full-length research articles, technical briefs, and letters to the editor; the Design Innovation Paper category reports about novel devices for which there may be less extensive clinical or engineering results.

JMED publishes quarterly, and the March 2024 issue marks 18 years for the journal. In June of 2023, JMED published the Special Section on Tissue Engineering and Regenerative Medicine. We plan to continue hosting special issues and special sections on topics of broad interest to the medical devices research community. Special-issue topics in progress at the time of this writing include Machine Learning in Medical Device Technology, and Internet of Medical Things (IoMT) for Ambient Assisted Living.

Carl Nelson
Co-Editor

Our vision for the journal is to continue to build on the successes of the recent past – increasing citations, impact factor, and breadth of representation among both the authorship and the editorial team of JMED. We continue to accept nominations for additional associate editors; please send your nominations to either of the co-editors.

We are committed to rapid processing of manuscripts and providing constructive feedback to authors. In service to the medical devices research community, we look forward to many positive interactions and success for JMED in our coming years of editorial service.

Xiaoming He and Carl Nelson,
University of Maryland and
University of Nebraska-Lincoln

ASME BIOENGINEERING DIVISION

ASME Journal of Engineering and Science in Medical Diagnostics and Therapy (JESMDT)

Ahmed Al-Jumaily
Editor

Ahmed Al-Jumaily, Professor of Biomechanical Engineering (Auckland University of Technology, New Zealand) serves as the Editor-in-Chief of the **ASME Journal of Engineering and Science in Medical Diagnostics and Therapy**.

The journal seeks to bridge the gap between engineers and non-engineers and translate engineering knowledge into clinical applications to accelerate biomedical innovation, trial, and commercialization. The Journal publishes original research on implementing engineering and science principles in medical diagnostics, imaging, characterization, and therapy. It spans four primary areas where engineering impacts applied biomedicine: biotechnology in pharmaceutics, clinical applications of biomaterials, biotechnology in clinical systems, and imaging, diagnostics, and therapeutics. We encourage colleagues from the BED to join the Editorial Board. The Journal has completed seven successful years with seven volumes and 28 issues, including eight Special Issues. Several indices, including Scopus and Engineering Index, have cited the journal.

The JESMDT website can be found at: https://journaltool.asme.org/home/JournalDescriptions.cfm?JournalID=32&Journal=JESMDT

Pneumonia Screening by MamaOpe Medicals, Ugand - Winner of ASME iSHOW

MamaOpe Medicals is based in Kampala, Uganda on the African continent. MamaOpe Medicals was the winner of the ASME ISHOW Kenya 2022 innovation showcase. They developed a non-invasive tool for screening pneumonia accurately and automatically using patient vitals.

For decades, pneumonia has remained the leading cause of death due to infectious disease around the world. In low-income countries, most pneumonia deaths are among children under five years of age, while in high-income countries adults over 70 years of age have the highest mortality rates.

Pneumonia is an acute respiratory infection of the lungs. When someone is infected, their lungs are filled with fluid and it becomes difficult to breathe. Every year, it claims the lives of more than 725,000 children under the age of 5, including around 190,000 newborns, who are particularly vulnerable to infection. Every day, at least one child dies every 43 seconds from pneumonia. Almost all of these deaths are preventable.

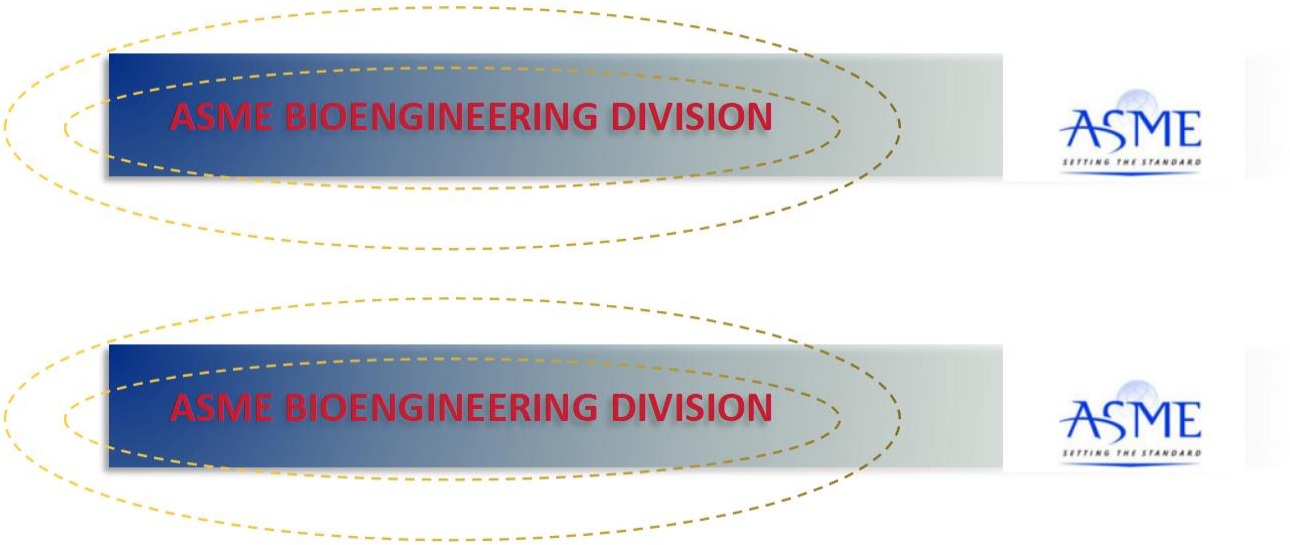
If children are diagnosed early and correctly, pneumonia can be easily treated with affordable oral antibiotics. Severe cases can then be referred to facilities that are better equipped to deliver advanced care. However, inaccurate diagnosis, inadequate supplies of medicines and weak referral systems remain a challenge in fighting the disease in low- and middle-income countries and in humanitarian contexts. According to the World Health Organization (WHO) international guidelines for the management of pneumonia, assessment of a child's respiratory rate is a critical component for diagnosing children with pneumonia in low-resource settings. However, counting respiratory rates is challenging, particularly in children as they may breathe irregularly, and it can be difficult to keep them calm for an entire minute.

The Mamaope pneumonia screening tool was developed in response to this challenge. Mamaope automatically measures the respiratory rate of a child and classifies the breathing rate according to the WHO guidelines for childhood pneumonia and gives a standardized lung auscultation output for the clinician.

A child dying from pneumonia every 43 seconds is far too many, urgent action is needed now to end these preventable deaths. MamaOpe Medicals is currently looking for manufacturing partners and raising funds to scale.

Olivia Koburongo(koburongo@mamaope.com)

Director Quality and Operations, MamaOpe Medicals Ltd.



ASME Fellows 2023-2024

John Oshinski
2023-2024

Dr. Oshinski is known for his efforts at advancing the collaboration between Emory University and the Georgia Institute of Technology, as well as his dedication to advancing the technologies of MR imaging. He received his undergraduate degree from Kalamazoo College and BS, MS, and PhD from Georgia Institute of Technology. The underlying mission of his research is the application of engineering principles and technical problem-solving techniques to current clinical problems in the imaging, diagnosis, and treatment of cardiovascular disease. His research has concentrated on developing imaging applications that directly impact disease diagnosis and patient care.

Jessica Wagenseil
2023-2024

Dr. Wagenseil is an expert on cardiovascular mechanics, specifically focusing on cardiovascular development, extracellular matrix proteins, and on microstructurally-based constitutive modeling. Her work is important for testing clinical interventions for elastin-related diseases and for designing better protocols for building tissue-engineered blood vessels. She is on the faculty of Washington University in St. Louis, where she previously earned a PhD. She received her bachelor's degree in Bioengineering from the University of California, San Diego

Ed Sander
2023-2024

Dr. Edward Sander is a Professor of Biomedical Engineering at the University of Iowa, where he has been a faculty member since 2011. He holds the position of Robert and Virginia Wheeler Faculty Fellow in Engineering and is a

researcher at both the Iowa Institute for Biomedical Imaging and the Iowa Technology Institute. Dr. Sander received his BSE in Chemical Engineering from The University of Texas at Austin in 2000, and his MS and PhD in Biomedical Engineering from Tulane University in 2004 and 2006, respectively. His research focuses on multiscale mechanics and modeling, biomaterials, tissue engineering, and microscopy, with specific areas including wound healing, skin tissue engineering, microvessel formation in engineered skin, multiscale biomechanics of native and engineered tissues, and image-based multiscale modeling of mechanics and damage in ligaments and tissue.

ASME BIOENGINEERING DIVISION

Important Reminders

Nominate yourself or colleagues to be an ASME Fellow
Deadlines: March 1, June 1, September 1 and December 1
Details here: https://www.asme.org/about-asme/honors-awards/fellows
Nominate colleagues for ASME Awards (Lissner, Fung, Mow, Woo, Nerem, Grood)
Deadline: September 1
Details here:
https://www.asme.org/get-involved/technical-divisions/technical-divisions-community-pages/bioengineering-division#honors-and-awards
Consider volunteering for the BED Executive Committee
Reach out to Matt Fisher (mbfisher@ncsu.edu) with any questions

ASME BIOENGINEERING DIVISION

Edward Grood Interdisciplinary Team Science Medal in Bioengineering Awardee 2023-2024

Top (left to right): Atefeh Razavi, Fateme Esmailie, Huang Chen, Hoda Hatoum, Breandan Yeats, Shelley Gooden. Second row (left to right): Imran Shah, Taylor Sirset-Becker, Lakshmi Prasad Dasi, Sri Krishna Sivakumar, Beom Jun Lee. Third row (left to right): Courtney Ream, Pradeep Yadav, Vinod Thourani, Aniket Venkatesh. Bottom row (left to right): Alessandro Veneziani, Venkateshwar Polsani, Milad Samaee, Mani Vannan, and Scott Lilly.

ASME BIOENGINEERING DIVISION

ASME Bioengineering Division Awards

Y.C. Fung Early Career Award 2024

Adrian Buganza Tepole
Associate Professor
Purdue University

H.R. Lissner Medal 2023

Marjolein C H van der Meulen
Professor
Cornell University

Van C. Mow Medal 2024

Thao D. Nguyen
ProfessorJohns
Hopkins University

Robert M. Nerem Education and

James E. Moore Jr.
Professor
Imperial College London

Savio L-Y. Woo Translational

Guy M. Genin
Professor
Washington University

ASME BIOENGINEERING DIVISION

Be sure to ‘Opt-In’ for emails from the Bioengineering Division

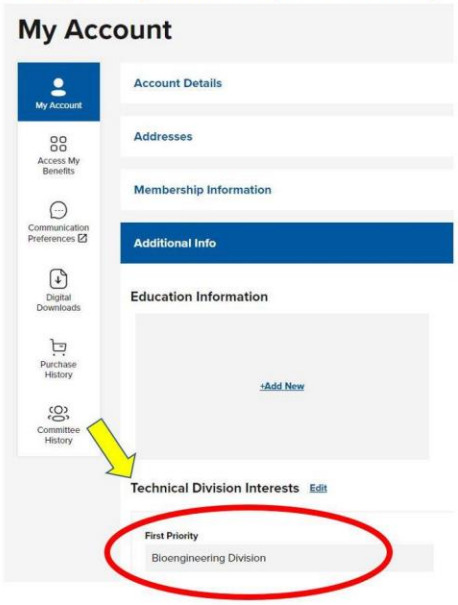
Log into your member account at ASME.org.

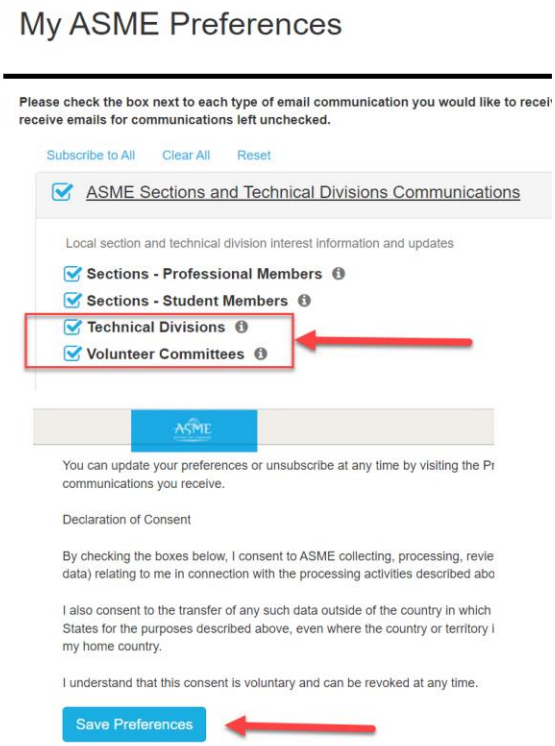
Under My Account -> Additional Information -> Technical Division Interests -> First Priority: Bioengineering Division

In addition, please be sure that you have selected to 'opt in' for emails from the Division. This is done through My Account -> Communication Preferences -> "ASME Sections and Technical Divisions Communications". You will need to save your selections, while also confirming through email.

We will be sending communications regarding the upcoming ASME Bioengineering Executive Committee elections via the ASME portal. As such, we want to make sure all members receive this info. While we will also share information here and on twitter, secure ballots will be sent using the ASME portal.

Select “Bioengineering Division” as your First Priority





FINAL STEP:

Confirm the email verification link. Without completing this step, your selections will not be confirmed.

ASME BIOENGINEERING DIVISION

IMECE® International Mechanical Engineering Congress & Exposition®

Track 6: Biomedical & Biotechnology Engineering

Arthur Erdman
University of Minnesota

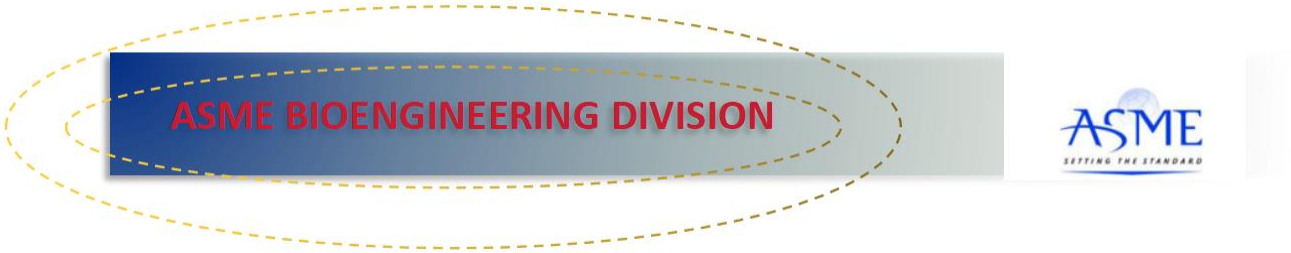
Guy Genin
Washington University in St. Louis

Pengfei Dong
Florida Institute of Technology
Track Chair

Yuan Feng
Shanghai Jiao Tong University
Track Co-Chair

Yi (Jason) Hua
University of Mississippi
Track Co-Chair

This track focuses on the implementation of various engineering principles in the conception, design, development, analysis and operation of biomedical and biotechnological systems and applications. Authors and presenters are invited to participate in this track to expand international cooperation, develop understanding of bioengineering principles and methodology and promote efforts in implementing engineering principles to biomedical and biotechnological systems. There were 181 abstracts submitted and 108 were accepted and presented at the congress, in which 80 full papers were published in the proceedings. The proposed topics were 16, in which 11 topics with different sessions were finalized in the Track. The Track was organized by Linxia Gu Florida Institute of Technology, Martin Tanaka Western Carolina University, Reuben Kraft Pennsylvania State University, and Ahmed Al-Jumaily Auckland University of Technology.



ASME Bioengineering Division Roster 2023-2024

EXECUTIVE COMMITTEE

Chair
Alisa Clyne

Past Chair
Shannon Stott

Secretary
Spencer Lake

Secretary-Elect
Guy Genin

Treasurer
Parisa Saboori

Member in Charge of Member Affairs
Matthew Fisher

Members at Large
Craig Goergen
Bob Hauck
Jessica Oakes
Josue Sznitman

Communications & Outreach
Yaling Liu

Student Relations
Zhenpeng Qin

Student Leadership Team
Shelby White

Bioengineering Division Women's Networking Group
Rita M. Patterson
Jennifer Wayne, Co-Chair

TECHNICAL COMMITTEE CHAIRS

Biotransport
Bumsoo Han
Sihong Wang

Design and Rehabilitation
Anita Singh
Antonia Zaferiou

Education
Victor Lai
Zhongping Huang
Chiara Bellini

Fluid Mechanics
Alejandro Roldan-Alzate
Lucas Timmins

Tissue and Cellular Engineering
Grace O'Connell
David Corr, Co-Chair
Alix Deymier, Incoming Co-Chair

Solid Mechanics
Kristin Myers
David Pierce

Industry
Ethan Kung
Lin Li