Ascend the Mountains at Snowbird!
Register NOW for the Summer Bioengineering, Bioengineering, and Biotransport Conference 2015
Snowbird Resort, Utah
June 17-20, 2015
Online Registration Deadline: June 15, 2015

Use the ACTIVE hyperlinks to navigate the PDF Newsletter:
Access Contents, Webpages, Emails

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MESSAGE FROM THE CHAIR

It has been yet another productive year for the Bioengineering Division, and it has been a tremendous honor to have served as the BED Chair. I would like to begin by thanking Ken Fischer, who has been an outstanding editor for the BED Newsletter. Ken has spent many hours over the past 4 years reporting the news of our division biannually, and this issue will be his last as editor – enjoy! Beginning this July, Wei Tan from the University of Colorado will be our new editor. Please join me in welcoming Wei in her new role.

I would like to take this opportunity to highlight some of the activities of the Division. Rita Patterson, former Chair of the Division (2010-2011), was featured in the 2014 Veterans Affairs Special Edition of the USA Today in an article entitled Walking Tall, about developments in prosthetics to meet the needs of our wounded warriors. Coverage in this major national media outlet was organized by Christine Reilley, Director of Business Development Engineering Sciences, ASME. Christine serves as the BED liaison to ASME. Read more about it on page 7!

The Honors Committee, chaired by Noshir Langrana, has elected an exceptional slate of ASME Society Level medalists that will be recognized at the 2015 Summer Bioengineering, Biomechanics, and Biotransport Conference (SB3C - http://www.sb3c2015.com/). Also, the committee has been very active in using the Division’s segregated funds to endow new medals. Please stay tuned for exciting announcements while we await final approvals!

I would like to recognize the momentous efforts of the SB3C organizing committee, led by Ross Ethier (Conference Chair). This dedicated group of volunteers has spent countless hours organizing what promises to be a phenomenal event. We will hold our annual committee meetings on Wednesday, June 17, in Snowbird, Utah. I encourage all members to attend technical committee or open administrative committees meetings to have the opportunity to shape the future of your Division.

As numerous new initiatives have been launched and we chart through a period of change, I am delighted to turn over the Chair position to Sara Wilson, who has worked with distinction as Secretary and Vice Chair. Her calm and confident approach to leadership will serve the Division well.

In closing, the BED continues to be a strong and vibrant Division due solely to the dedication of all the volunteers. I am constantly impressed by our members’ commitment to serve the Division. I look forward to seeing you at SB3C 2015!

Matt Gounis, Chair
ASME Bioengineering Division
2014-2015

Ascend to Snowbird and SB3C 2015!
| BED Committee Meeting Schedule, Wednesday, June 17 |  |
|-----------------------------|-------------------------------|------------------|
| BED Executive Committee*    | Cliff Lodge, Ballroom 1       | 7:00-9:30 am     |
| SB³C Organizing & Program   | Cliff Lodge, Ballroom 1       | 9:30-10:20 am    |
| SB³C Conference Oversight*  | Cliff Lodge, Ballroom 1       | 10:30-11:20 a    |
| Membership Development      | Cliff Lodge, Ballroom 2       | 10:30-11:20 am   |
| New Directions              | Cliff Lodge, Ballroom 3       | 10:30-11:20 am   |
| Education                   | Cliff Lodge, Ballroom 1       | 11:30-12:20      |
| Finance*                    | Cliff Lodge, Ballroom 2       | 11:30-12:20      |
| Cell and Tissue Engineering | Cliff Lodge, Ballroom 1       | 12:30-1:20 pm    |
| Industry Advisory           | Cliff Lodge, Ballroom 2       | 12:30-1:20 pm    |
| Fluid Mechanics             | Cliff Lodge, Ballroom 1       | 1:30-2:20        |
| Design Dynamics and Rehab   | Cliff Lodge, Ballroom 2       | 1:30-2:20        |
| Honors*                     | Cliff Lodge, Ballroom 3       | 1:30-2:20        |
| Solid Mechanics             | Cliff Lodge, Ballroom 2       | 2:30-3:20        |
| Biotransport                | Cliff Lodge, Ballroom 3       | 2:30-3:20        |

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<th>BED Committee Meeting Schedule, Friday, June 19</th>
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<td>JBME Editors (with lunch)*</td>
<td>Cliff Lodge, Primrose A</td>
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<td>BED Open Executive Business</td>
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<th>BED Committee Meeting Schedule, Saturday, June 20</th>
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<td>Student Leadership Committee</td>
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*Indicates Closed Meetings. All other meetings are open to all SB3C attendees. All meeting locations and times may be subject to change. Check the final SB3C 2015 program information on site.
On behalf of the 2015 Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C) Organizing Committee, welcome to **SB3C2015**, a new and exciting meeting with a fine pedigree. The SB3C meeting is a great opportunity for us to come together to discuss outstanding research, catch up with old friends, and meet new friends and colleagues. Although our primary focus is scientific and technical exchange, the program incorporates relaxation as well. Come and dance to the awesome tunes of BEDRock at the free Friday night concert. And remember, we are located in a spectacular setting and have programmed free time so that everyone can enjoy the natural beauty of this amazing part of the world.

The theme of the **SB3C2105** meeting is “Synergy of Modeling and Experiments in Biomechanics, Bioengineering and Biotransport”. In line with this theme we have selected Plenary Speakers, and will run Workshops and Challenge Sessions, to address research that covers the complex, messy and real-world intersection between modeling and measurement. We are particularly delighted to welcome Professors Margaret Gardel and Andrew McCulloch as our plenary speakers; they are both outstanding researchers and leaders in the areas of cellular and cardiac biomechanics, respectively.

We were delighted to receive a large number of excellent abstracts. This is a true testament to the vibrancy and dedication of members of the community, who work so hard to advance human knowledge in Biomechanics, Bioengineering and Biotransport. We had about 716 abstracts submitted and have programmed an “action-packed” meeting with outstanding contributed papers, posters, and workshops.

First-time attendees, be sure to check out the student poster sessions and talks and encourage your favorite student competitors. We expect these sessions to to be a highlight of the conference. We will have 73 finalists presenting in the Bachelor, Masters, and Doctoral levels at SB3C2015.

The SB3C2015 meeting is delighted to welcome the participation of the Japanese Society of Mechanical Engineering, and notably their co-organization of a number of sessions. We are also grateful to the many Societies who have extended professional recognition to the meeting. We will pay tribute to the achievements of Avraham Shitzer through a special podium session in his honor. We are excited to include an Undergraduate Student Design Competition, several Challenge Competitions, and a number of workshops, ranging from “Taking the Guesswork out of the Interview Process” to “FEBio Workshop and Discussion”.

**James Ashton-Miller** (University of Michigan) is the winner of the Lissner medal for his experimental and theoretical biomechanical contributions and inventions in the area of unintentional injuries.

**Continues on Page 5**
A plenary session will highlight the ASME H.R. Lissner medal winner and a special workshop session will highlight the ASME Van C. Mow and Y.C. Fung medal winners. This year we have the pleasure to acknowledge the accomplishments of James Ashton-Miller (University of Michigan) as the winner of the Lissner medal for his experimental and theoretical biomechanical contributions and inventions in the area of unintentional injuries. The winner of the Mow medal for accomplishments at the mid-career level is Dawn Elliott (University of Delaware) for seminal contributions to research in musculoskeletal biomechanics. Adam Engler (UCSD) is the winner of the Fung award for his work on how physical and chemical properties of the niche influence stem cell function. Please join us in congratulating each of the awardees.

We would particularly like to thank and recognize the tremendous efforts of the members of the SB³C2015 Organizing Committee, Program Committee, Local Arrangements Committee, session chairs, workshop organizers and the many reviewers who worked hard to bring us this high-quality program. We are fortunate to receive financial sponsorship from our industry sponsors listed in the program as well as the National Institutes of Health (NIBIB) and the National Science Foundation (CBET/GARDE).

C. Ross Ethier
SB³C Conference Chair

Jeff Weiss
SB³C Program Chair

SB³C 2015 Travel Funding for Persons with Disabilities!!!

Through the generous contribution of NSF, the BED has money to help support SB³C 2015 attendees who have a disability and may have a hardship in attending and/or participating in a technical conference. The funding will cover the registration and hotel accommodations. Applicants do not need to be presenting and no affiliation is required.

Applications will be evaluated and awarded on a rolling basis. You can also get more information and download an application form at the SB³C 2015 conference website: http://sb3c.com/registration-submission/disability-travel-awards/

The SBC2013 forms will be accepted and applications from the above forms can be emailed to Dr. Lorin Maletsky, maletsky@ku.edu.
Head to the Mountains with BEDrock

The rock-n-roll band made up of BED members and friends will be rocking to NEW HEIGHTS! Everyone at SB^3^C 2015 is invited!

Friday, June 19, 2015  Plaza Deck  Rain Venue: Ballroom

2015 Band Members (left to right): Joseph Sherwood (Vocals/Guitar), Ross Ethier (Guitar), Joel Berry (Guitar), Luke Timmins (Guitar/Bass), Jeff Weiss (Bass), Justin Vorp (Drums), Patty Katsaros (Vocals), Clark Hung (Keyboard/Vocals), Alan Eberhardt (Percussion/Vocals), René van Donkelaar (Bass), Mike Moreno (Guitar), Jimmy Moore (Bass/Vocals)

Flying High: David Vorp (Manager)

*Venues and times may change. Check program and announcements at SB3C2015. While most band members are from the Bioengineering Division, the division is not responsible for the content of the concert or this advertisement. But BEDrock really wants you to come out and party at Snowbird!
Dr Rita Patterson is Research Director of the Department of Manipulative Medicine, the Director of the Osteopathic Heritage Foundation Physical Medicine Core Research Facility and Professor of Manipulative Medicine at the University of North Texas Health Science Center. Her work in prosthetics brought her national recognition in November 2014, in a special USA Today on Veterans. The article “Walking Tall: How prosthetics developed to meet new demands,” by Elizabeth Neus, explores the current capabilities of limb replacement prosthetics.

According to the Amputee Coalition of America, about 2 million Americans have lost a limb or were born without one, and another 28 million are at risk of losing a limb. The major causes of the amputation are diabetes or other vascular problems which continue to increase. While veterans who lost limbs in Iraq or Afghanistan only consist a small portion of the overall amputee population, they are among the most active. There is even a military-grade prosthetic so soldier-amputees can stay on active duty. That one is waterproof, tough enough for a parachute landing or a long run, and includes a stealth mode so the leg’s vibrations and motor sounds cannot be heard by the enemy. The young war-injured soldiers have really pushed the envelope of prosthetics.

Older amputees, however, may be less healthy in the first place, “less active,” said Dr Rita Patterson. “If you’re 60, you don’t want to run a marathon unless you’ve already been doing it. ... I don’t need a huge mechanically controlled arm if all I want to do is to hug my kids. We can create something fancy, but if they don’t want to use it, it doesn’t matter.” That is not to say that older, less healthy amputees shouldn’t get the full benefits of the latest prosthetics, Dr Patterson said. Her lab is working on a project where below-the-knee amputees are given a slightly more complex foot than they think they need. She said, “We’re trying to provide evidence where we can encourage them to move up their activity by giving them a more advanced foot.”

Compared to lower limbs, arms and hands have long been more complex. Hands need to be able to grip strongly, but also touch delicately, and the arms need more fine control as well as muscle power from the natural arm. “You need both hands to do some things, but they just avoid it,” Dr Patterson said. “It's like being in a sling. You can't do everything, but you can do most things.” Much of the research in upper-limb prosthetics is now focused on human-machine interfaces, where the amputee controls the arm with his or her nerve impulses or thoughts.

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USA Today describes the hip and mid-thigh prostheses of veteran Dan Berschinski, a double-leg amputee.

Paralympian Amy Purdy wore flexible prosthetic feet to dance with Derek Hough on Dancing with the Stars.
BIOMETRANSFER

The Biotransport (BIOT) committee will hold their annual meeting at the 2015 Summer Biomechanics, Bioengineering and Biotransport Conference on Wednesday, June 17, 2015 at 2:30 PM in Ballroom 3. At the BIOT committee meeting, we will deliberate on the status of the past initiatives, ongoing activities, and future direction of our committee in the ASME BED and HTD divisions. We will take this opportunity to recognize several achievements of our members. This is an open meeting and everyone interested in linking transport of energy, mass, and momentum with medicine and functioning of living systems is encouraged to attend. The attendees are expected to advocate, exhort and opine on our future activities! Please, contact the committee chair, Rupak Banerjee (rupak.banerjee@uc.edu) for further details or clarifications.

DESIGN, DYNAMICS & REHABILITATION

The Design, Dynamics, and Rehabilitation Committee will have its annual meeting in at 1:30 pm, Wednesday, June 17th in The Cliff Lodge Ballroom 2 at Snowbird Resort. This committee covers a wide variety of topics including human movement measurement and modeling, rehabilitation, medical device design (orthopedic, cardiovascular, BioMEMS), engineering for surgery, and robotics. At the committee meeting we will let you know about the sessions we have organized for the current SB3C meeting, select theme leaders for next year’s meeting, and discuss workshops and special sessions for future meetings. Everyone with interest in design, dynamics, and/or rehabilitation is encouraged to attend, including post-docs, faculty members, and industry members. We also encourage regular member of other committees to attend. Those who would like more information are encouraged to contact the committee chair, Martin Tanaka (mtanaka@email.ecu.edu) or the vice-chair, Tammy Bush (reidtama@egr.msu.edu).

SOLID MECHANICS

The annual meeting of the Solid Mechanics committee will be held at SB3C2015 on Wednesday, June 17, at 2:30 pm, in Ballroom 2. We are always looking for people who want to get involved - reviewing abstracts, chairing sessions, organizing workshops - so please join us at this gathering for an overview of our contributions to SB3C2015 offerings and a discussion of our programming for the 2016 meeting. If you want to get involved but cannot attend the meeting, please email me (Rich Debski - genesis1@pitt.edu), Solids Chair.
The Tissue and Cellular Engineering (TCE) Technical Committee is looking forward to our annual gathering at the upcoming Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C) to be held in Snowbird Utah, June 17-20, 2015. In preparation for that meeting, the TCE technical committee managed the review of more than 120 very high quality abstracts – thanks to all our sub-theme leaders and reviewers! These submissions were ultimately programmed into 8 podium sessions and 5 thematically linked and interactive poster sessions.

Podium sessions at the SB3C will be:
- Organs, Morphogenesis, & Collective Cell Behavior
- Musculoskeletal Tissue Engineering - Molecular, Soluble, and Mechanical Regulation of Tissue Development
- Musculoskeletal Tissue Engineering - Matrices and Interfaces
- Nano-, Micro-, and Multi-Scale Mechanics of Cells and Tissues
- Cardiovascular Tissue Engineering
- The Cellular Microenvironment (joint with JSME)
- Mechanotransduction I - Cellular and Sub-Cellular Biophysics (joint with JSME)
- Mechanotransduction II - Interactions between Cells and Their Environment (joint with JSME)

Poster Sessions at the SB3C will be:
- Fabrication and Manipulation of the Cellular Microenvironment
- Multi-Scale Mechanics in Cell & Tissue Engineering
- Tissue Engineering and Regenerative Medicine: Materials and Interfaces
- Tissue Engineering and Regenerative Medicine: Cells, Constructs, Culture Systems, & Regeneration
- Mechanotransduction and Sub-Cellular Biophysics

Of note, two of our Podium sessions, the Cellular Microenvironment and Mechanotransduction I – Cellular and Sub-Cellular Biophysics, were jointly programmed with the Japanese Society for Mechanical Engineering, and we look forward to fruitful interactions with members of that organization both at the SB3C meeting and beyond.

The SB3C is shaping up to be an excellent meeting with a great showing by members of the TCE committee. Details on the meeting, including registration, location and travel, housing, etc. can be found at: http://sb3c.com/. As always, if you have questions or suggestions, or want to get involved in the TCE sub-themes, reviewing abstracts, or planning symposia and other new initiatives for next year, please don’t hesitate to reach out to me (lemauck@mail.med.upenn.edu) or Ed Guo (exg1@columbia.edu). Please also plan to attend our TCE technical committee meeting, scheduled for Wednesday June 17th, 2015, from 12:30-1:20 in Ballroom 1 of the Cliff Lodge at Snowbird. At that meeting, we’ll discuss the business of the TCE and develop new ideas to expand our impact at next year’s meeting. Look forward to seeing all of you soon!

SB3C online registration deadline is June 15, 2015!
**FLUID MECHANICS**

The Fluids Committee annual meeting will be held Wednesday, June 17, 2015 from 1:30-2:20pm in Ballroom 1 at the Summer Biomechanics, Bioengineering and Biotransport Conference. We are always looking for people who would like to get involved and help review abstracts, chair sessions, provide feedback, and/or organize workshops. Please join us at this open meeting where we will begin discussion of our programming for the 2016 meeting. If you are unable to attend but would like to get involved, please contact me at Loth@UAkron.edu.

In addition to the podium and poster sessions, the Fluids Committee will also hold two workshops this year. First is the Aneurysm CFD Challenge to be held in the Wasatch Room Friday, June 19 from 8:00-9:30am. This workshop is designed to mirror a “real-world” collaboration starting from Digital Imaging and Communication in Medicine (DICOM) data. This challenge will examine: variability of image segmentation, differences in CFD results when surface and boundary conditions are not provided, and the value of CFD with respect to aneurysm rupture risk prediction. The organizers are Kenichi Kono (Wakayama Rosai Hospital, Japan) and Kristian Valen-Sendstad (University of Toronto).

The second workshop is on Simvascular, which is an open source software package that provides a complete pipeline from medical image data to cardiovascular blood flow simulation results and analysis. This workshop will be held in the Wasatch Room on Saturday June 20 from 11:30-1:00pm and will introduce the newly released SimVascular project to the SB³C community as well as provide a step-by-step tutorial on the software. The workshop will cover the basic steps of model construction, meshing and flow simulations, as well as underlying theory, numerical methodology and best practices for high quality results. The organizers are Alison Marsden, (UCSD), Shawn Shadden (UC Berkeley), and Nathan Wilson (Open Source Medical Software Corporation).

Finally, I would like to thank Keefe Manning (Vice-Chair and Theme Leader) and Brandon Dixon (Theme Leader) for their tremendous efforts in helping to manage the reviewing and programming of the Fluids submissions.

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**Encourage Students and Postdocs to GET INVOLVED with BED Leadership**

**SB³C 2015 authors:**

Please **nominate your students** for our **Student Leadership Committee**. The purpose of this committee is to aid students in gaining leadership experience and to facilitate planning and execution of student events for upcoming conferences and other local/virtual programs.

The students need to commit to a one-year term including coming to SB³C 2015 and attending a one-hour planning meeting at SB³C. Please send your nominations to Kristen Billiar (kbilliar@wpi.edu, BED Board Member in Charge of Student Affairs). The nomination should include a short paragraph about the student in the body of an email indicating why the student is suitable for a position on the committee. We envision the committee consisting of about 10 graduate students, but committed undergraduate students are welcome as well.

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**Postdocs are encouraged to join our technical committees.**
The BED has several administrative committees: Education, Honors & Awards, Inclusion and Diversity, Industry Advisory, Membership, New Directions, and Student Affairs. Additionally, the BED selects representatives to other bioengineering organizations and to committees within ASME. Within ASME, the BED has representatives to the Thurston Award Committee, the ASME annual meeting (IMECE), and the Engineering Sciences Segment (ESS). Beyond ASME, the BED typically has representatives to the American Institute for Medical and Biological Engineering and the U.S. National Committee on Biomechanics. Reports from these committees and representatives follow.

EDITOR’S NOTE
It has been a tremendous privilege and honor to be the ASME Bioengineering Division’s newsletter editor for the past four years. While it was periodically quite a workload, it was also very exciting at times to see the happenings in the BED and help keep member abreast of them. I am also thankful that I was able to have a role in planning and goal setting for the division. Most importantly, it was great to get to know so many people from all disciplines within the BED. The division is truly blessed to have such wonderful, friendly people who give of their time and talents, and are happy to do so. I especially want to thank the BED chairs, John Bischof, Michele Grimm, David Vorp, and Matt Gounis, as well as all the technical and administrative committee chairs for supplying their reports for the newsletter in a timely manner (and putting up with all my reminders). Welcome new editor, Wei Tan. It is time for me sign off... over and out.

Ken Fischer
Outgoing Editor, BED Newsletter
University of Kansas
1530 W 15th St, Rm 3138
Lawrence, KS 66045-7609
fischer@ku.edu

Enjoy an adrenaline rush between sessions at SB³C 2015!
MEMBERSHIP DEVELOPMENT COMMITTEE

Please consider nominating your colleagues to become ASME Fellows. Fellow Grade is the highest elected grade of membership within ASME, the attainment of which recognizes exceptional engineering achievements and contributions to the engineering profession. You can access nomination information at: https://www.asme.org/about-asme/get-involved/honors-awards/fellows

The process of becoming a fellow involves a nominator and three sponsors. Two of the three sponsors are required to be ASME Members or Fellows. It is important that nominators are in the field of the nominee. Nominations are considered quarterly and announced annually in the BED Fall newsletter. Please contact me if you are interested in nominating one of our BED members, and I will help with the process: holmes@virginia.edu.

Jeff Holmes
Chair, BED Membership Committee
2014 – 2017

EDUCATION COMMITTEE

The Education Committee of the Bioengineering Division is pleased to present both a poster session and several workshops at the SB3C meeting. We’ll have a poster session, “Best Practices in Biomechanics, Bioengineering, and Biotransport Education” on Thursday afternoon. Friday will feature a Problem-Based Learning workshop. Saturday will feature two concurrent workshops – one on Teaching Undergraduate Design (co-sponsored with the Design, Dynamics, and Rehabilitation Committee), and another on Writing a Successful Mentoring Plan. Many thanks in advance to our workshop organizers this year – Alisa Morss Clyne, Martin Tanaka, Ken Fischer, Sara Wilson, and Rouzbeh Amini.

Have an idea for a future workshop? Do you want to be more involved in the Bioengineering Division in a small committee? Come give the Education Committee a try! The Education Committee meeting will be held at the SB3C on Tuesday, June 17th at 11:30am (Cliff Lodge, Ballroom 1) – we welcome both new and “more experienced” committee members. We will discuss future workshop planning and programming to serve our Division, as well as ideas for other pedagogy resources that we might develop.

See you at Snowbird!

Laurel Kuxhaus, Chair
BED Education Committee
2013 – 2016

BED committee meetings, scientific sessions, and networking opportunities at SB3C 2015 may be the peak of your Summer activities!
As the current chair of the BED Honors and Awards Committee, I encourage you all to nominate candidates for the Division’s three special recognition awards.

Nominations from the pool of active members of the BED are now open for the 2016 awards! To nominate a colleague or yourself for a 2016 award, please submit the nomination form to the Chair of the appropriate Honors Committee no later than Sept. 1, 2015. In preparing nomination packages please note that Honors committee members cannot submit a candidate or provide a letter of support to the committee they are serving.

Nominations forms can be found at https://community.asme.org/bioengineering_division/wiki/3494.honors-awards.aspx for three special recognition awards.

The details of three awards are as follows.

The Y.C. Fung Young Investigator Award recognizes outstanding investigators, early in their careers, for significant potential to make substantial contributions to the field of bioengineering and a demonstrated commitment to bioengineering. Candidates must have earned a relevant Ph.D. or equivalent degree within seven years of their nomination and must be under 36 years of age on June 1 of the year of nomination. The Chair of this Award Committee is Jeff Holmes (University of Virginia): holmes@virginia.edu

The Van C. Mow Medal is bestowed upon an individual who has made significant contributions to the field of bioengineering through research, education, professional development, leadership in the development of the profession, mentoring of young bioengineers, and service to the bioengineering community. The individual must have earned a Ph.D. or equivalent degree between ten and twenty years prior to June 1 of the year of the award. The Chair of this Award Committee is Ray Vanderby (University of Wisconsin): vanderby@ortho.wisc.edu

The H. R. Lissner Medal was created in 1977 by the Bioengineering Division of ASME to recognize significant contributions to bioengineering. These may be (1) research contributions; (2) new methods for measurement; (3) new equipment and instrumentation; (4) educational contributions; and/or (5) service to the BED and/or the bioengineering community. The Chair of this Award Committee is Noshir Langrana (Rutgers University): langrana@rutgers.edu

Please join us this summer as we recognize the recipients of the 2015 awards at the SBC banquet. Finally, I am reaching out to our community to consider nominating a deserving colleague for the 2016 awards.

Noshir A. Langrana
Chair, Honors & Awards Committee
2014 – 2017

Students will have chance to bloom at SB3C 2015!
The mission of the ASME BED Committee on Inclusion and Diversity is to identify critical diversity issues in the biomedical engineering community and to recommend strategies for addressing them. The committee works to recruit, retain and promote ASME BED members from diverse backgrounds, to make all members feel included and respected, and to establish an active appreciation and understanding for people of diverse backgrounds, thereby enabling all members of the community to be more aware and thus more effective in their professional actions.

This spring the committee has been working toward programming at SB3C in Snowbird, Utah and working to ensure a welcoming and inclusive environment at this meeting. We provided names for session chairs, keynote speakers and workshop participants. We also organized our own workshop. Led by Lakiesha Williams, Victor Barocas and myself, the Mentee-mentor Matching Mixer (and Best Practices in Mentoring) Workshop (Friday morning 8-9:30 am in the Maggie Room) is designed to develop lasting mentoring relationships between junior and senior colleagues in biomechanics, bioengineering and biotransport. Interested junior and senior participants can fill out the match form here: http://bit.ly/1DOEMvO. The extended deadline for submitting match forms is June 15, 2015, so there is still time! Matches will be announced in advance of the workshop; at the workshop, best practices for mentor-mentee relationships will be discussed and the remainder of the time will be used for meeting, mixing and mentoring.

The committee, led by Alison Marsden, also created, advertised and evaluated applicants for the first ever ASME BED Diversity Travel Awards. To increase diversity, and to provide a path for students, postdocs, and early career faculty from underrepresented groups to learn about graduate school opportunities and cutting-edge research in the expanding fields of biomechanics, bioengineering and biotransport, financial support was awarded to selected individuals to attend this summer’s meeting. Winners include attendees from diverse backgrounds, different levels of education and different parts of the country. Many are first time SBC attendees. If you see them in Utah, please welcome and congratulate them:

Emily Bermel Montana State
Grace O’Connell U of Cal Berkeley
Gabriela Espinosa Washington University
Katrina Knight U of Pittsburgh
Daniela Valdez-Jasso U of Illinois Chicago
Jose Miguel Valdez U of Arizona
Daniela Velez-Rendon U of Illinois Chicago
Sara Barreto Royal College of Surgeons Ireland
Julia Taussig U of Colorado Boulder
Bhargavi Krishnan U of Kansas
Audrey Ford U of Cal Berkeley
Alexandra Martinez U of Cal San Diego

As always, the committee welcomes input on topics for future events. Current ideas in consideration include best practices for recruiting and retaining a diverse faculty; using the power of privilege or what can white men do; tips for work/life balance; starting a family while in graduate school and/or pretenure; and dispelling myths of academic careers. Anyone with ideas, energy and/or enthusiasm to offer should email Naomi Chesler (Chesler@engr.wisc.edu).

Naomi Chesler, Chair
BED Inclusion and Diversity Committee 2014–2017

Ascend to Snowbird and SB3C 2015!
INDUSTRY ADVISORY COMMITTEE

In newsletters from the past couple years, we have highlighted some of the ‘other’ BED deliverables that are perhaps not as visible to the annual attendees of the flagship BED meeting, the SBC. Each of these meetings, or journals, has a different target audience. In some cases, the audience is primarily composed of scientists and engineers from industry, which is reflected heavily in the technical content of the meetings as well as the opportunities afforded to students to engage meaningfully with the industry side of biomechanical engineering. The Design of Medical Devices meeting has a long history in Minneapolis, and has an emerging annual meeting in Europe as well. Additionally, the Frontiers of Medical Devices conference, held in conjunction with ASME in 2013 and with BMES in 2015, represents an active technical collaboration between industry, academia, and the US Food and Drug Administration to focus on aspects of biomedical science and engineering that are relevant for bringing new biomedical solutions to the US.

If you have not tried out these meetings, we encourage you to do so! Submit your materials, or attend the meetings as a spectator, and learn more about the technical and non-technical challenges which are regularly encountered corporate research and development. Additionally, please reach out with additional ideas for increasing the extent to which academia and industry are effectively integrated across BED.

Jeff Bischoff
Chair, Industry Advisory and External Affairs Committees
2009 – 2015
NEW DIRECTIONS COMMITTEE

There’s big news from the New Directions Committee. A project is underway to establish a global biomechanics wiki portal that will act as a Bioengineering & Biomechanics Modeling Archive (BBMA). It is hoped that this will become a comprehensive multi-disciplinary library of computational models & data. The plan is to have data entered as wiki entries and moderated blogs. An industrial partnership program will be part of the BBMA. The archive will receive guidance and regulation from the NIH, FDA, and ISO. It is also hoped that archive will collaborate with BME journals as a mechanism for submitting data and supplementary materials.

Some of the current action items are to develop submission guidelines and enforcement rules, to establish guidelines for documentation format, data structure and format, and modeling software for consistency in describing and submitting models and data. Moving forward, the New Directions Committee plans to organize a panel at SB3C, contact journal editors, and discuss these steps with funding agencies.

The current plan is to move forward with cardiovascular models first and then extend to modeling of all biological systems. If you would like to provide input and/or help with this effort, then plan to attend the New Directions Committee meeting, Wednesday, June 17, 10:30-11:20 am, in Ballroom 3, at SB3C 2015! If you can’t be there, but want to help, contact Michael Sacks (msacks35@gmail.com). We hope to see you there!

Michael Sacks
Chair, New Directions Committee

SB3C 2015 STUDENT PAPER COMPETITION

We are looking forward to our first student paper competition at the Summer Biomechanics, Bioengineering, and Biotransport conference (SB3C) in just a few weeks. After a significant turnout at last year’s World Congress of Biomechanics, we were anticipating that the 2015 SB3C competition may not attract a significant amount of participation. However, I am happy to report that this was not the case. Students submitted 174 papers for the competition with a combined 41 submissions at the BS and MS levels, and 133 submissions at the Doctoral level. This represented roughly 25% of the submissions to the entire meeting and reflects the outstanding commitment to student education and training within the BED.

From those 174 submissions, we will have 72 students competing on site. The BS and MS level poster competitions each have two categories, and will compete on Thursday afternoon. The doctoral finalists will be competing within six concurrent podium sessions on Friday morning. Of course, deciding on the finalists that will compete onsite is never easy. We significantly appreciate the time and energy of the 100+ reviewers that helped to make this possible by judging the written portion of the competition.

The onsite judging will be equally critical and this year we are implementing a new web-based judging platform (populy.co) that will allow judges to enter their scores and comments via their smartphones. If you are willing to serve as a judge of either a poster or podium session at the meeting, please contact Steven Abramowitch (sdast9@pitt.edu). We look forward to seeing you in just a few weeks!

Steven D. Abramowitch, Overall Chair
Eric A. Kennedy, Ph.D Chair
Spencer Lake, M.S. Chair
Rouzbeh Amini, B.S. Chair
2015 Student Paper Competition

Steve Abramowitch
2015 Student Paper Competition
Two years ago at the ASME Summer Bioengineering Conference at Sunriver Resort, the ASME BED student leadership committee (SLC) was formed. The purpose of the committee was to engage students at future conferences through both social and informative events. During its first year, the committee planned three student events for the World Congress of Biomechanics – a social event and two informational panel sessions, which received overwhelmingly positive reviews. Based on the challenges and successes of the first year as well as the student feedback, this year’s SLC has been formally structured into three sub-committees to plan an outdoor social activity, a Q&A panel, and a workshop for the Summer Biomechanics, Bioengineering, and Biotransport Conference (SB³C) in Snowbird, Utah.

For the outdoor activity, interested students should meet Thursday, June 18th at 3pm at the Snowbird Center Level 3 Plaza Deck. There will be a choice of two options: do an easy group hike around Snowbird center or take a tram up to the top of Hidden Peak to explore the beautiful Wasatch Mountains. The latter group should be aware of the high altitude (11000 ft) of the Wasatch Mountains, the tricky terrain, and the potential for snow.

Our Q&A panel titled “Strategies for a Successful Post-doctoral Experience” is slotted for Friday, June 19th from 8-9:30am in the Maybird room. Here students will receive advice from current post-docs, professors, and program officers in the NSF and NIH regarding post-doctoral training experiences. Drs. Luke Timmins, Lowell Edgar, Alexander Leonessa, Guy Genin, Virginia Ferguson, Bradley Davidson, Jonathan Elsner, and Zeynep Erım have been confirmed for the panel. The session will begin with a short presentation by Dr. Zeynep Erım, NIH Program Officer in the Division of Interdisciplinary Training at NIBIB, which will be followed by an open Q&A session.

Our workshop titled “Taking the Guesswork out of the Interview Process” will be held on Saturday, June 20th from 11:30am to 1pm in Eagles Nest. Professionals from academia and industry will provide valuable insight into the interview process as well as helpful preparation tips. Drs. Richard Leask, Luke Timmins, Bob Taylor, Jeff Holmes, Will Richardson, Alison Marsden, and Lara Silverman have committed to serving on the panel. We have prepared a mock interview activity for students to learn key skills and how to avoid common mistakes. The last half of the session will be designated for open Q&A with the panel.

We encourage all students at SB³C to attend an open meeting to provide feedback and ideas for next year’s SLC. This meeting will be held on Saturday, June 20th from 10:30-11am in Primrose A. It is also open to postdocs, faculty, and industry; we welcome your input and ideas for future student events!

There is a flyer in the SB³C program booklet, the SB³C webpage, and on the ASME Bioengineering Division Facebook page, which contains the above event information as well as a list of things to do in Snowbird. In the days preceding and during the conference, the SLC will be sure to post reminders and updates to the Facebook page and our Twitter account (@asmebedstudents), so please check back frequently. We are extremely excited for these student events and look forward to a strong turnout. For any questions please feel free to contact us through email at: asme-bed-slc@googlegroups.com. We look forward to seeing everyone in Snowbird!

Finally, if you are interested on serving on the SLC, please ask your advisor or other faculty member to nominate you by sending an email to Kris Billiar (kbilliar@wpi.edu) with a short note indicating the basis for the nomination.

Elisabeth Jensen, Lizz Iffrig, David Schreier, Kristine Fischenich, and Kathryn Drzewiecki
BED Student Leadership Committee

Kristen Billiar, Chair
BED Student Affairs Committee
ASME IMECE Activities

The Bioengineering Division contributes each year to the Biomedical & Biotechnology Engineering track at the ASME’s annual "International Mechanical Engineering Conference and Exhibition." The 2014 IMECE was held from November 14-20 in Montreal, Canada. The 2015 IMECE will be held November 13-19 in Houston, Texas. While this is a broad conference with many different areas represented, we do have a solid presence at this conference with 125 accepted abstracts and 86 final papers published in the proceedings in 2014 (authors have the option to submit for a technical presentation only or to submit a full paper). In 2014, there were 10 topics areas including:

1. Plenary presentations:
The dynamic mechanical function of the lung as a signature of pulmonary disease, Jason Bates, University of Vermont
Mechanical cardiovascular assist devices, Said Jahanmir, MiTiHeart Corporation

2. Biomechanics of trauma due to accidents, surgery or weapons

3. Innovations in processing, characterization and application of bioengineered materials

4. Bioinspired materials and nanomaterials

5. Viscoelasticity of biological tissues & ultrasound applications

6. Dynamics and control in biomechanical systems

7. Clinical applications of bioengineering

8. Transport phenomena in biomedical applications

9. Computational modeling and device design

10. PhD student paper competition

For the 2015 IMECE, 193 abstracts have been accepted from which 120 draft papers have been submitted and are currently being reviewed. Topic areas for 2015 include:

1. Damage Biomechanics

2. Vibration and acoustics in biomedical applications

3. Biomedical ultrasound

4. Bioinspired materials & structure

5. Dynamics and control of biomechanics systems

6. Clinical application of bioengineering

7. Transport phenomena in biomedical application

8. Computational modeling and device design

9. Sport biomechanics

10. Quantitative biomedical image analysis

11. Biological tissues & materials: modeling, synthesis and characterization

12. Advances in biomedical elastography

13. General biomedical and biotechnology applications

14. PhD student paper competition

This track of IMECE is chaired by Ahmed Al-Jumaily (Auckland University of Technology) with the assistance of co-chairs Sara Wilson (University of Kansas) and Erol Ulucakli (Lafayette College).

Sara E. Wilson
2015-2016 IMECE Representative
2013-2016

Ahmed Al-Jumaily
Biomedical & Biotechnology Engineering
IMECE Track Organizer

Stay on top of your field!

See you at SB3C 2015!
The Engineering Sciences Segment’s Segment Leadership Team (EES-SLT) is tasked with vetting future ASME meetings such as IMECE and NEMB. The protocol for this oversight is a work in progress.

The inaugural EES-SLT (Engineering Sciences Segment Leadership Team) of the TEC (Technical Events and Conferences) ASME Sector Council is made up of a diverse group of ASME members representing industry, academia, and governmental institutions that reflects our membership base. Since the formation of the TEC Sector in June 2014, the ESS-SLT has been learning about the various activities and opportunities that occur for ASME in the Engineering Sciences arena. This is a learning experience for all of us, so we appreciate your patience as we launch this new segment and interact with the TEC.

During the meeting of the entire TEC Sector in September 2014, we began to put together a strategic plan for the segment’s direction. The segment aims to position ASME as the world leader and convener on this market. Our work includes major events, such as:

- NanoEngineering for Medicine and Biology (NEMB) scheduled April 19 - 22 in Minneapolis
- Applied Mechanics and Materials Conference (McMAT) scheduled June 29 - July 1 in Seattle
- International Mechanical Engineering Congress and Exposition (IMECE) scheduled November 13 - 19 in Houston
- We are already discussing additional ventures, including the 5th ASME Micro/Nanoscale Heat and Mass Transfer International Conference in Singapore

John Bischof
BED Representative
2014 - 2017

US NATIONAL COMMITTEE ON BIOMECHANICS

The ASME BED’s Summer Bioengineering Conference was not held in 2014 in lieu of the World Congress of Biomechanics (WCB2014) held last July in Boston. The USNCB sponsored two primary symposia at WCB2014, one on Cancer Biomechanics (Cheng Dong, organizer) and one on Developmental Biomechanics (Larry Taber, organizer), each of which served as follow-up sessions to prior USNCB Frontiers in Biomechanics meetings. Both symposia were well attended and generated considerable excitement.

USNCB also sponsored one of the Plenary talks at WCB2014: “Titin: A giant mechanical computer” by J. Fernandez at Columbia University. Finally, plans are underway for the next USNCB-sponsored Frontiers in Biomechanics Meeting, which will focus on Neuromechanics. If this topic is of interest to you, please contact me and I will put you in touch with the organizers.

David Vorp
BED Representative to the USNCB
2007 - 2015

The scenic Wasatch Mountains around Snowbird await! See you at SB³C 2015!
Summer Biomechanics, Bioengineering & Biotransport Conference
Snowbird Resort, Utah, June 17-20, 2015

Building on the legacy of previous summer bioengineering conferences, we are proud to announce the new and expanded 2015 Summer Biomechanics, Bioengineering and Biotransport Conference. This conference, now organized and run independently of ASME, will include all the elements that have made previous meetings great.

Conference topics will include:
• Biotransport
• Mechanobiology
• Growth and Remodeling
• Rehabilitation
• Human Dynamics
• Design and Devices
• Biomedical Engineering Education
• Cardiovascular Fluid Mechanics
• Tissue and Cellular Engineering
• Cardiovascular Tissue Mechanics
• Growth, Remodeling and Repair
• Injury
• Musculoskeletal Soft Tissue Mechanics
• Bone Mechanics
• Joint and Spine Mechanics
• Other Solid Mechanics Topics
• Respiratory and Other Fluid Mechanics

• See your colleagues and catch up on all the latest advances in a fantastic mountain resort location
• Plenary Lectures, Symposia, Workshops, and Student Paper/Poster Competitions
• Family-friendly atmosphere and schedule, with time for networking and leisure, including a concert by BEDrock!
• Great value: registration fee includes many meals and is heavily discounted for students. Competitive room pricing with the host resort, including multi-occupancy condos
• Easy to get to: Snowbird is a short 45 minute drive from Salt Lake City airport

Key Dates:
• January 16, 2015: abstract submission deadline
• April 1, 2015: notification of abstract acceptance
• April 24, 2015: early bird registration deadline
• June 17-20, 2015: SB³C Meeting

Online Registration Deadline, June 15, 2015

Meet Your Organizers:
C. Ross Ethier - Conference Chair / Jeff Weiss - Program / Rita Patterson - Finance / Crawford Downs - Exhibit Chair
Richard Leask - Information / Malissa Santinoranton - Publications / Steve Abramowitch - Student Competition
Tammy Haut-Donahue - Local Arrangements

www.SB3C2015.com
Thursday June 18th: Group hike and social
Join your fellow grad students for either an easy hike around Snowbird center, or take the tram up to the top of Hidden Peak to explore the Wasatch Mountains.

Time: 3pm-till
Location: Meet at Snowbird Center Level 3 Plaza Deck

Friday June 19th: How to make the most of your postdoctoral research
Attend this session for fantastic advice from current post-docs, professors, and NSF and NIH program officers regarding post-doctoral training experiences. A short presentation will be made by Dr. Zeynep Erüm, NIH Program Officer in the Division of Interdisciplinary Training at NIBIB, with a Q&A panel session to follow.

Time: 8-9:30 am
Location: Maybird

Saturday June 20th: Open meeting
Attend this open meeting to provide feedback on the events hosted at this conference as well as suggestions for future events.

Time: 10:30-11am
Location: Primrose A

Saturday June 20th: Taking the guesswork out of the interview process
Come join us for a workshop where professionals from academia, industry and government will provide valuable insight about the interview process and helpful interview preparation tips. This workshop will include both a mock interview demonstration as well as an open Q&A session.

Time: 11:30-1pm
Location: Golden Cliff Eagles Nest

For more information and live updates about the events follow us on Facebook (ASME Bioengineering Division) and on twitter (@asmebedstudents)
Don’t forget about the BEDrock concert Friday June 19th!

Food
Visit sb3c.com/venue/dining/ for a list of places to eat at snowbird and in downtown Salt Lake City

Sumner Activities
Snowbird offers a number of summer activities including tram rides, mountain coaster, alpine slide, a climbing wall, and ropes course. Find more information at www.snowbird.com/summer/activities/

Summer Events
Friday night catch a free family flick on the plaza deck while enjoying popcorn and other treats. Saturday there is a free outdoor concert

Hiking
Summer trail map available on the Snowbird website at www.snowbird.com/image/lib/trailmaps/Snowbird_SummerTrailMap.pdf

Rafting
Raft the Green River or Yampa River. Visit www.adrift.com

Find more information at www.snowbird.com
ASME NEMB: Annual Global Conference on NanoEngineering for Medicine and Biology  
Houston, TX  
Feb 21-24, 2016

ASME's 5th Annual Global Conference on NanoEngineering for Medicine and Biology (NEMB) brings together members of the engineering community, scientists, clinicians, students, and experts from industry to discuss the integration of engineering, materials science, and nanotechnology in addressing fundamental problems in biology and medicine.

Confirmed Plenary Speakers Include:

- John Bischof, University of Minnesota
- Dennis Discher, University of Pennsylvania
- Kathy Ferrara, UC Davis
- Kam Leong, Duke University
- Nicholas Peppas, UT Austin
- Rebecca Richards-Kortum, Rice University

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ASME BED ROSTER 2014-2015

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