

Mechanics Division Newsletter

Spring 2020

Chair: Carisa Ramming
Secretary: Vimal Viswanathan

Visit the Mechanics Division Website: <https://sites.asee.org/mechanics/>

Message from the Chair

Dear Colleagues and Friends of the Mechanics Division,

I hope this message finds you safe and healthy! What a strange time these last six months have been. As we prepare to meet virtually for the first time in ASEE history, we can be certain that at least some things will be the same – thought-provoking papers and presentations during our nine technical sessions, the hands-on demonstrations that spark creativity in our classrooms, and collegiality with our fellow mechanics instructors. In addition, please remember to join us from your favorite easy chair during our business meeting on Friday.

JOIN US ONLINE June 22-26, 2020

This year's ASEE Annual Conference & Exposition will be a completely virtual experience. You can enjoy all the programs without leaving your home! For additional details, please visit:
<https://www.asee.org/annual-conference/2020>

I would like to send a tremendous thank you to our division officers who worked throughout the year, dealing with the ever-changing logistics to bring our program together. These amazing colleagues include Masoud Rais-Rohani (Program Chair), Jul Davis (Program Chair Elect), Vimal Viswanathan (Secretary), Jacob Moore (Treasurer), Christine Masters (Awards Chair) and Devin Berg (Past Division Chair).

I look forward to “seeing” everyone virtually and catching up. I know we will all have exciting experiences and tips to share from our unusual circumstances.

Best wishes,



Carisa Ramming
Chair of the ASEE Mechanics Division 2019-2020

2020 Mechanics Division Annual Conference Program

Program Chair, Masoud Rais-Rohani

Program Chair-Elect, Julian Davis

ASEE Division Mixer Virtual Showcase

On Mon. June 22, 2020 4:30 PM to 5:30 PM. This is a great chance to catch up with old friends and meet new colleagues from our division and from the entire ASEE community.

Technical Sessions

In this year's virtual conference, the Mechanics Division has nine technical sessions.

Monday, June 22

Session M339 – Making Mechanics Courses Fun and More Effective, 10:40 AM-11:00 AM

Session M339B – Assessment Strategies in Mechanics, 11:40 PM-12:00 PM

Tuesday, June 23

Session T239 – Concept Inventories in Mechanics, 10:00 AM-10:20 AM

Session T339 – Grading and Feedback Models in Mechanics, 11:40 PM-12:00 PM

Wednesday, June 24

Session W339A – Alternative Methods of Teaching and Learning Mechanics, 10:40 AM-11:00 AM

Session W339B – Hybrid and Online Teaching of Mechanics, 11:20 AM-11:40 AM

Thursday, June 25

Session R239 – Improving Student Outcomes in Mechanics, 10:20 AM-10:40 AM

Session R339 – Learning Mechanics through Experimentation, 11:00AM – 11:20AM

Friday, June 26

Session F339 – Teaching Statics: What and How? 10:40 AM-11:00 AM

Hands-on Demonstrations Session (Mechanics Division and Mechanical Engineering Division)

Session W539: Wednesday, June 24, 2020 3:30 PM to 4:30 PM.

Mechanics educators will give a demonstration of the hands-on activities they have developed and/or used in engaging students and enhancing the learning outcomes in mechanics courses.

Virtual Business Meeting

Session F639: Fri. June 26, 2020 4:00 PM to 5:00 PM (see p.5 for more information)

Mechanics Division Virtual Awards Banquet

Session R739: Mechanics Division Virtual Awards Banquet

Date and Time: Thu. June 25, 2020 7:00 PM to 9:00 PM EST

Speaker: Prof. Damiano Pasini,
McGill University,
Topic: Functional Mechanical Metamaterials

...

Grab your favorite meal and drink and join your colleagues through your computer screen for the very first Mechanics Division Virtual Awards Banquet.

2019–2020 Mechanics Division Awards

Archie Higdon Distinguished Educator Award:

- **Brian Self**, Prof. of Mechanical Engineering at California Polytechnic State University, San Luis Obispo

Ferdinand P. Beer and E. Russel Johnston, Jr., Outstanding New Mechanics Educator Awards:

- **Amir Danesh-Yazdi**, Assistant Professor of Mechanical Engineering at Rose-Hulman Institute of Technology.
- **David Flaherty**, Instructor, US Military Academy, West Point

2020 Best Paper Award:

Paper: Modification of a Physics Rotational Kinematics Concept Inventory for use with Engineering Dynamics Students

- **Ann Reimers**, Assistant Professor, Academic General Faculty, in the Engineering & Society and the Mechanical & Aerospace Engineering Departments at the University of Virginia
- **Stefen Beeler-Duden**, PhD Candidate in Developmental Psychology working in the Psychology Department's Vaish Lab at the University of Virginia

2019 Best Presentation Award:

Paper: Just a Moment – Classroom Demonstrations for Statics and Solid Mechanics

- **James Giancaspro**, Associate Professor of Civil Engineering at University of Miami
- **Diana Arboleda**, Structural Engineering Lecturer at University of Miami

Mechanics Division Annual Business Meeting

Date: Friday, June 26, 2020 4:00 PM to 5:00 PM (Session ID: **F639**)

This is a virtual meeting

All members and prospective members of the Mechanics Division are invited to the division business meeting. Division members will be allowed to vote. Draft minutes from last year's business meeting are provided on the following page.

One of the primary activities of the division business meeting is to elect new officers for the following positions.

Director. A director is a voting member of the Executive Committee. Main duties: attend the Executive and Business Meetings at the Annual Conference, elect the Program Chair Elect, and participate in decision making as issues arise. Directors must also be willing to accept a nomination for Program Chair Elect, which succeeds consecutively to Program Chair, Chair, and Immediate Past Chair. Term: 4 years.

Secretary. Main duties: Attend Executive and Business Meetings at the Annual Conference and record minutes; prepare ballots for elections of officers; prepare and distribute Newsletter (twice per year); assist Chair with ensuring that Division agenda is executed. Term: 1 year.

Treasurer. Main duties: Keep records of accounts; issue checks to award winners; pay and process other items as necessary. Term: 1 year.

If interested, please submit a nomination by 5:00pm on Wednesday, June 24, 2020. Nominations should be emailed to Carisa Ramming (carisa.ramming@okstate.edu). Include a brief statement of your current/past involvement in the Mechanics Division and your interest in serving in the office for which nomination is sought. If a person is being nominated for more than one position, please state preference. Self-nominations and/or multiple nominations are permitted.

If you have any items of business that you would like to be placed on the agenda for the Division Business Meeting, please contact Secretary Vimal Viswanathan (vimal.viswanathan@sjsu.edu) as soon as possible.

2019 ASEE Mechanics Division Annual Business Meeting Minutes (DRAFT)

Note: A final version will be approved at the 2020 Mechanics Division Business Meeting. Please forward any needed corrections via email to vimal.viswanathan@sjsu.edu.

Meeting Time: Wednesday, June 19, 2019, 1:30 PM to 3:00 PM
Location: Meeting Room 9, Tampa Marriott Waterside, Tampa, FL

Attendees: Ron Averill, John Baker, Devin Berg, Derek Breid, Phil Cornwell, Dom Dal Bello, Amir Danesh-Yazdi, Jul Davis, Eric Davishahl, Laura Emersom, Al Ferri, Anna Howard, Nicolas Libre, Chris Masters, Jacob Moore, Rungun Nathan, Chris Papadopolous, Masoud Rais-Rohani, Carisa Ramming, Geoffrey Recktenwald, Shraddha Sangelkar, Ren Tubergen, Vimal Viswanathan

Call to Order –1:30 pm (Berg)

1. Welcome/Introductions (Berg)
2. 2018 Business Meeting Minutes Approved (Motion: Ren Tubergen, Second: Chris Masters)
3. Elections/Appointments
 - a. Director 1 and Director 2 (2019-2023)
Nominees: Kristi Shryok, Geoffrey Recktenwald, Vimal Viswanathan
Elected as Directors: Kristi Shryok, Geoffrey Recktenwald
 - b. Treasurer: Jacob Moore (uncontested, winner by acclamation)
 - c. Secretary: Vimal Viswanathan (uncontested, winner by acclamation)
 - d. Program Chair Elect
Nominees Jul Davis, Phil Cornwell
Elected as Program Chair Elect: Jul Davis
 - e. Awards Chair: Christine Masters (appointed by Division Chair, Devin Berg)
 - f. Membership Chair: Jennifer A. Kadlowec (appointed by Division Chair, D. Berg)
4. PIC III Chair (Imbrie)
 - There is a new ethics code intended to mitigate problems with plagiarism.
 - There is a new session moderator handbook.
 - There is no more “use it or lose it” on funds. Operating account is being discontinued. Funds go to BASS account.
 - The best paper from the Mechanics Division for the 2019 conference was the best paper in PIC III. It was very close to being selected as the best paper in the conference.
 - There is a reorganization of the PICS under consideration. There are three scenarios under consideration, referred to as red, green, and blue.
 - This year to elect, a new PIC III chair will be elected.
 - Suggestions for ASEE from Mechanics Division members:
 - Implementation of option in Monolith for session moderators to email session authors.

- Availability of a luggage room at the conference center at future conferences.
- Option to pay extra for unrestricted WiFi at conference.
- Modifications in Monolith so file names cannot be viewed since they sometimes reveal identities of authors.
- Availability of a virtual tour of the conference center in advance of conferences.

5. Report from Division Officers

- a. Chair (Berg): The chair thanked the Program Chair, Carisa Ramming, and the Program Chair Elect, Masoud Rais-Rohani, for organizing an excellent annual conference for the division.
- b. Program Chair (Ramming)
 - b.i. Report on abstracts submitted, accepted and rejected
 - b.i.1. 46 abstracts submitted
 - b.i.2. 44 abstracts accepted
 - b.i.3. 2 rejected
 - b.ii. Report on papers submitted, accepted and rejected
 - b.ii.1. 35 papers submitted
 - b.ii.2. 4 papers removed by authors
 - b.ii.3. 0 papers rejected
 - b.ii.4. 1 paper in poster session
 - b.ii.5. 30 papers presented in technical sessions
 - b.iii. Report on how many reviewers
 - b.iii.1. 67 reviewers
 - b.iv. Report on sessions
 - b.iv.1. 6 technical sessions
 - b.iv.2. 1 business meeting
 - b.iv.3. 1 poster, 1 hands-on demo
 - b.iv.4. 1 awards banquet
- c. Program Chair-Elect (Rais-Rohani): Happy with speaker at banquet. He had been involved in ASEE for many years. Please accept reviewer invitations for the 2020 conference. Please let him know if you would like to moderate. Would like to have two moderators for every session.
- d. Secretary (Baker): Fall and Spring newsletter published 2018-2019.
- e. Treasurer (Moore): On Sunday, June 16, 2019, division had \$10,608.20 in BASS 303 in Operating Account.
- f. Awards Committee – No report. Committee Chair, Charles Krousgrill, not in attendance at meeting.
- g. Membership committee - No report. Committee Chair, Jennifer Kadlowec not in attendance at meeting. Jul Davis purchased mentioned “Mechanics Maniac” key chains that were given away at the mixer. There was agreement that these were a

nice addition. A suggestion was forwarded that a raffle item next year could be a “vector fold up” (see this year’s Mechanics Division best paper by Davishahl, et al.)

- h. Archivist/Hands-on Mechanics Website (Berg): A week before the conference, all hands-on demos were posted. There are now 74 hands-on demos posted. There have been about 350 visitors per month at the site.

Devin suggested combining the webmaster and archivist roles.

Devin stated that the hands-on mechanics division site domain registration charge would be \$132.84 for nine years.

Chris Masters made a motion to approve payment of \$132.84 for the site domain registration. Motion was seconded by Rungun Nathan. Motion passed unanimously.

6. New Business:

There was discussion that ASEE expects all divisions to include a diversity statement in their bylaws. Also, definitions of awards and awards selection processes should be included. It may be best to leave out specifics on financial issues, such as specific amounts on dues, since that complicates the process of making changes.

- 7. Meeting adjourned at 3:00 pm.

2019-20 Mechanics Division Officers and Standing Committees

Chair: Carisa Ramming, Oklahoma State University
(405) 744-9056, carisa.ramming@okstate.edu

Past Chair: Devin Berg, University of Wisconsin-Stout
(715) 232-1133, bergdev@uwstout.edu

Program Chair: Masoud Rais-Rohani, University of Maine
(207) 581-4120, masoud.raisrohani@maine.edu

Program Chair Elect: Julian Davis, University of Southern Indiana
(812) 461-5489, jldavis2@usi.edu

Directors: Anna Howard, North Carolina State University (2016-20)
(919) 513-4019, annahoward@annahoward.com

Brian Self, California Polytechnic State University (2017-21)
(805) 756-7993, bself@calpoly.edu

Renard Tubergen, Calvin College (2017-21)
(616) 526-7313, rqt3@calvin.edu

Phillip Cornwell, Rose-Hulman Institute of Technology (2018-22)
(812) 877-8232, cornwell@rose-hulman.edu

Chris Venters, East Carolina University (2018-22)
(252) 737-1028, ventersc@ecu.edu

Kristi Shryock, Texas A&M University (2019–23)
(979) 845-0735, kshryock@tamu.edu

Geoffrey Recktenwald, Michigan State University (2019–23)
(517) 432-3658, GDR@msu.edu

Secretary: Vimal Viswanathan, San Jose State University
(408) 924-3841, vimal.viswanathan@sjsu.edu

Treasurer: Jacob Moore, Penn State Mont Alto
(717) 749-6209, jmoore@psu.edu

Webmaster: Devin Berg, University of Wisconsin-Stout
(715) 232-1133, bergdev@uwstout.edu

Archivist: Devin Berg, University of Wisconsin-Stout
(715) 232-1133, bergdev@uwstout.edu

Nominating Committee: Devin Berg, Chair (bergdev@uwstout.edu), Vincent Prantil (prantil@msoe.edu),
Brianno Coller (bcoller@niu.edu)

Membership Committee: Jennifer Kadlowec, Chair (kadlowec@rowan.edu), Matthew Jensen
(mjensen@fit.edu), Shelley Lorimer (lorimers@macewan.ca), Nicolas Libre (libren@umsystem.edu),
Geoffrey Recktenwald (GDR@msu.edu).

Awards Committee: Christine Masters, Chair (cbm100@psu.edu), Jakob Bruhl (jakob.bruhl@usma.edu),
Julian Davis (jldavis2@usi.edu)

Notes: Two Directors are elected at each annual Business Meeting for terms of four years. Directors who have served for at least one year are eligible to be elected as Program Chair Elect (and to serve consecutively as Program Chair and Chair). Secretary and Treasurer are ex-officio (non-voting) elected at each annual Business Meeting for terms of one year. Webmaster and Archivist are ex-officio (non-voting) and are elected for terms of one year. The Nominating Committee is specified to consist of the three most recent Past Chairs. The Membership and Awards Committee are appointed to serve for terms of one year.

Mechanics Division News and Announcements

Archival Materials

Got any interesting Division materials from past decades? Specific materials might include articles, photographs, Readiness Test results, role of the Mechanics Division in developing the mechanics curriculum, etc. Please contact Archivist Devin Berg at (715) 232-1133, bergdev@uwstout.edu.

ASEE Awards

ASEE has numerous awards available including the Lifetime Achievement Award which might be appropriate for one of our Mechanics Division Members that have been huge contributors throughout their careers. The nominations generally open in November and close in January. For a full list of awards, please visit <https://www.asee.org/member-resources/awards/full-list-of-awards/national-awards/special>.

ASEE Lifetime Achievement Award in Engineering Education

The ASEE Lifetime Achievement Award recognizes individuals who have retired or who are near the ends of their careers for sustained contributions to education in the fields of engineering and/or engineering technology. The contributions may be in teaching, education, research, administration or educational programs, professional service, or any combination thereof.

The award was established through the efforts of the ASEE Lifetime Achievement Award Steering Committee and funded by an endowment created for this award by the contributions of ASEE Life Members and like-minded, Not-Yet-Life Member Fellows.

The Award: The recipient will receive a \$1,000 honorarium, travel assistance up to \$1,000 for travel to the ASEE Annual Conference to receive the award, and a commemorative plaque.

Eligibility: Candidates shall have demonstrated sustained contributions to education in the fields of engineering and/or engineering technology throughout their careers. These contributions may be in any combination of the following:

- Demonstrated excellence in teaching either undergraduate or graduate courses
- Mentorship of students beyond the classroom
- Important contributions to the understanding of teaching and learning through the conduct and publication of educational research
- Demonstrated leadership through the administration of departments, schools or college of engineering or engineering technology
- Volunteer activity and leadership in education societies

The candidates will be retired or near retirement and will have devoted their careers primarily to engineering education. ASEE membership is not required.