

# Mechanics Division Newsletter

Fall 2019  
Division Website: <https://sites.asee.org/mechanics/>

Chair: Carisa Ramming  
Secretary: Vimal Viswanathan

## Message from the Chair

Dear friends in the Mechanics Division,

I hope this newsletter finds you well. I am honored to be serving as this year's Chair and thankful for the opportunity to work with an inspiring group of mechanics educators.

The Annual Conference in Tampa in June was a busy and successful conference for the Division. I would like to thank everyone who: served as a reviewer, shared knowledge and experiences as an author and presenter, kept logistics on track as a moderator, and attended the sessions. These efforts make our division one of the best at ASEE and certainly the most fun!

We were able to enjoy mingling at the Division Mixer, learning at our six technical sessions, sharing at our hands-on demonstration session, and planning for the division at our business meeting. We also celebrated all of our award winners (congratulations!) while reflecting on how we deliver our course content with our speaker, Dr. Autar Kaw.

As semesters and quarters get back into full swing during the January rush, so does our planning for the 2020 conference to be held in Montreal, Canada. I hope you will consider joining us. If you are interested in becoming involved through a leadership position or nominating a potential awardee, you may find more information in this newsletter.

Finally, a huge thank you to our Past Chair, Devin Berg for his guidance and patience, to Masoud Rais-Rohani for his help in the banquet planning and for getting us on a call schedule, and to Vimal Viswanathan for compiling this newsletter.

Happy teaching!  
Carisa

Carisa H. Ramming, P.E.  
Associate Professor  
College of Engineering, Architecture & Technology  
Oklahoma State University

### JOIN US IN MONTREAL June 21-24, 2020

Next year's ASEE Annual Conference & Exposition will be held in Montreal, Quebec, Canada, June 21-24, 2020. More information on the conference is available at: <https://www.asee.org/annual-conference/2020>

**Full papers for 2020 Annual Conference are due on Monday, February 3<sup>rd</sup>, 2020**

# Mechanics Division News and Announcements

## STEM Event for Girls at MSOE

*Contributed by Daniel Williams, Associate Professor of Mechanical Engineering, MSOE*

This past December Milwaukee School of Engineering hosted its 4th annual FLAME (Female Leaders Advocating for Mechanical Engineering) event. Girls from area high schools attended the day-long event where they were introduced to mechanical engineering through lab demos and hands-on activities. The day culminated in a question and answer session paneled by current women ME majors at MSOE, followed by a build and design project. The project entailed building a pneumatically powered Lego pick-and-place mechanism. As part of the build, they had to determine a good location to anchor the swing cylinder to achieve the desired motion. The event was sponsored by Generac Corporation and the Otto Maha Fluid Power endowment.



## Additional News Items

If you have any news items or announcements for the Spring 2020 newsletter, please send them to [vimal.viswanathan@sjsu.edu](mailto:vimal.viswanathan@sjsu.edu) by April 3<sup>rd</sup>, 2020.

## 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 Devin Berg at (715) 232-1133, [bergdev@uwstout.edu](mailto:bergdev@uwstout.edu).

# Call for Award Nominations (Submit by February 11, 2020)

## **Archie Higdon Distinguished Educator Award**

The Archie Higdon Distinguished Educator Award is given annually by the Mechanics Division for distinguished and outstanding contributions to engineering mechanics education. The nomination package should include the following:

1. A letter of nomination and no more than four accompanying letters of support which delineate the nominee's contribution to mechanics education,
2. Nominee's curriculum vitae.

The award consists of a plaque to be given at the annual Mechanics Division Banquet, a \$750 cash prize, and registration for the Mechanics Division Banquet for the awardee and a guest.

## **Ferdinand P. Beer and E. Russell Johnston, Jr., Outstanding New Mechanics Educator Award**

The Ferdinand P. Beer and E. Russell Johnston, Jr., Outstanding New Mechanics Educator Award is given annually to up to two individuals (contingent to availability of funds) who have shown a strong commitment to mechanics education. The winners are selected on the basis of their exceptional contributions to mechanics education. Individuals who have no more than five years of academic experience past their first regular academic appointment are eligible. The nomination package should include the following:

1. A letter of nomination which delineates the nominee's contribution to mechanics education and no more than two additional letters of support,
2. A one-page letter from the nominee describing his or her personal philosophy regarding mechanics education,
3. Nominee's curriculum vitae.

The award consists of a plaque to be given at the annual Mechanics Division Banquet, a \$750 cash prize, registration for the Mechanics Division Banquet for the awardee and a guest, and also registration for the Mechanics Division Business Meeting Luncheon.

## **Mechanics Division James L. Meriam Service Award**

The Mechanics Division James L. Meriam Service Award may be given annually to recognize significant service to the Mechanics Division as characterized by notable leadership, significant contributions, and prolonged and dedicated service. Candidates for the award must be members of the Mechanics Division and must have served the Division for a minimum of ten years. No individual may receive the award more than once, and members of the Division's Awards Committee are not eligible for the award until two years after completing their service on that committee. Nominations may be made by all members of the Mechanics Division except for those members serving on the Division's Awards Committee. Each nomination package must include the following:

1. A chronological listing of the candidate's service to the Division,
2. A narrative statement detailing the significant elements of the service.

The award consists of a plaque to be given at the annual Mechanics Division Banquet, and registration for the Mechanics Division Banquet for the awardee and a guest.

Attendance at the ASEE Annual Conference is required for the awardees. Nominations are due by **February 11, 2020**. To submit nominations (or to arrange by mail) or for additional information please contact the Awards Committee Chair Christine Masters at [cbm100@psu.edu](mailto:cbm100@psu.edu).

# 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](mailto: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, Geoffery Rektenwald, Vimal Viswanathan  
Elected as Directors: Kristi Shryok, Geoffery Rektenwald
- b. Treasurer: Jacob Moore (uncontested, winner by acclimation)
- c. Secretary: Vimal Viswanathan (uncontested, winner by acclimation)
- 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.

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## 2019 Mechanics Division Awards

The Mechanics Division Annual Awards Banquet was held Tuesday, June 18, at American Social Bar & Kitchen in Tampa. Attendees were treated to a very interesting and entertaining presentation on “A Solution to the Paradox of Choices – Lecturing, Flipped, Blended”, by Dr. Autar Kaw, from the University of South Florida.

**Ferdinand Beer and E. Russell Johnston, Outstanding New Mechanics Educator Award**  
Daniel W. Baker, Colorado State University

**Archie Higdon Distinguished Educator Award**  
Phillip J. Cornwell, Rose-Hulman Institute of Technology

**Mechanics Division James L. Meriam Service Award**  
Not awarded this year

**Mechanics Division 2019 Best Paper Award**  
*Do They Understand Your Language? Assess Their Fluency with Vector Representations*  
Eric Davishahl (Whatcom Community College), Todd Haskell (Western Washington University), Jill Davishahl (Western Washington University), Lee Singleton (Whatcom Community College), and Wade H Goodridge (Utah State University)

**Mechanics Division 2018 Best Presentation Award**  
*Effect of Assessment Methods on Performance in Mechanics of Materials*  
Ron Averill, Geoffrey Recktenwald, and Sara Roccabianca (Michigan State University)

Congratulations to the recipients! Also, we gratefully thank our sponsors, McGraw-Hill and Pearson, for their continuing support of the awards banquet.

## 2019-20 Mechanics Division Officers and Standing Committees

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

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

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

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

**Directors:** Anna Howard, North Carolina State University (2016-20)  
(919) 513-4019, [annahoward@annahoward.com](mailto:annahoward@annahoward.com)  
Brian Self, California Polytechnic State University (2017-21)  
(805) 756-7993, [bself@calpoly.edu](mailto:bself@calpoly.edu)  
Renard Tubergen, Calvin College (2017-21)  
(616) 526-7313, [rqt3@calvin.edu](mailto:rqt3@calvin.edu)  
Phillip Cornwell, Rose-Hulman Institute of Technology (2018-22)  
(812) 877-8232, [cornwell@rose-hulman.edu](mailto:cornwell@rose-hulman.edu)  
Chris Venters, East Carolina University (2018-22)  
(252) 737-1028, [ventersc@ecu.edu](mailto:ventersc@ecu.edu)  
Kristi Shryock, Texas A&M University (2019-23)  
(979) 845-0735, [kshryock@tamu.edu](mailto:kshryock@tamu.edu)  
Geoffrey Recktenwald, Michigan State University (2019-23)  
(517) 432-3658, [GDR@msu.edu](mailto:GDR@msu.edu)

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

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

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

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

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

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

**Awards Committee:** Christine Masters, Chair ([cbm100@psu.edu](mailto:cbm100@psu.edu)), Jakob Bruhl ([jakob.bruhl@usma.edu](mailto:jakob.bruhl@usma.edu)),  
Julian Davis ([jldavis2@usi.edu](mailto: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 New Officer Introduction

### **Geoffrey Recktenwald, Michigan State University - Director (2019 - 23)**



Geoff Recktenwald is a member of the teaching faculty at Michigan State University. He received his Ph.D. in Theoretical and Applied Mechanics from Cornell University in 2006. His primary technical interests are dynamics, stability, and nuclear reactor physics. He dedicates a significant amount of time to mentoring student design groups and developing the S.M.A.R.T. pedagogical method. Geoff received the Mathematics Junior Faculty Teaching Award at Cornell in 2009 and the Withrow Award for Teaching Excellence at MSU in 2017. At MSU Geoff teaches courses in engineering mechanics and design. His innovative pedagogical efforts are focused on Strengths of Materials and Dynamics.

### **Vimal Viswanathan, San Jose State University - Secretary (2019-20)**



Vimal Viswanathan is an assistant professor of mechanical engineering at San Jose State University, San Jose, CA. He earned his Ph.D. in mechanical engineering from Texas A&M University and worked at Georgia Institute of Technology and Tuskegee University before joining San Jose State University. His research interests include design creativity, innovation, additive manufacturing, design automation and engineering education. He teaches courses such as Dynamics, Mechanical Design and Product Design. He was awarded Applied Materials Faculty Award for Excellence in Teaching in 2019. He has co-developed a brain-based, media-rich blended model for teaching engineering courses.



## Mechanics Division - Opportunities for Involvement

All members and prospective members of the Mechanics Division are invited to the Mechanics Division Annual Business Meeting, held each year in June at the ASEE Annual Conference. One of the primary activities of the division business meeting is to elect new officers and fill available committee positions.

Some of the offices are described below. For a full list of positions, see “2019-20 Mechanics Division Officers and Standing Committees”, provided earlier in this newsletter.

**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.

### Officer Nominations:

You are welcome to submit nominations before or during the 2020 Mechanics Division Annual Business Meeting. Self-nominations and/or multiple nominations are permitted. Nominations may be submitted via email in advance of the meeting to Carisa Ramming ([carisa.ramming@okstate.edu](mailto:carisa.ramming@okstate.edu)). Include a brief statement of the nominee’s current/past involvement in the Mechanics Division and nominee’s interest in serving in the specific office. If a person is being nominated for more than one position, please state preference.

### 2019 Annual Division Business Meeting Agenda Items:

If you have any items that you would like included on the agenda for the Annual Division Business Meeting, please contact Division Secretary, Vimal Viswanathan ([vimal.viswanathan@sjsu.edu](mailto:vimal.viswanathan@sjsu.edu)), or Division Chair, Carisa Ramming ([carisa.ramming@okstate.edu](mailto:carisa.ramming@okstate.edu)), before the 2019 Annual Business Meeting.