

Mechanics Division Newsletter

Fall 2018
Division Website: <https://sites.asee.org/mechanics/>

Chair: Devin Berg
Secretary: John Baker

Message from the Chair

Dear fellow Mechanics Division members,

It is a pleasure for me to serve as this year's chair of the Mechanics Division. I've been privileged to be a part of the Mechanics Division ever since I first became active with ASEE and I am happy to consider this division my home within ASEE. One of my favorites times of year is when I return to the ASEE Annual Conference and catch up with all of my friends in the division.

Speaking of the annual conference, we hope that you'll be joining us next June in beautiful Tampa, Florida. We hope to continue the successes we had as a division this past year in Salt Lake City. If you missed the 2018 conference, please check out the [Mechanics Division archived papers for 2018](#) to learn about all of the great work being done by your division colleagues. The Mechanics Division sessions were all well attended, including our annual session devoted to hands-on classroom demonstrations. I want to thank everyone who reviewed papers and abstracts, presented papers, moderated the sessions, showed classroom demos, and attended the talks!

Our business meeting was also well attended. Thanks to those who attended this meeting, as it is important to the functioning of the Division. For those that have not attended a business meeting, please do so next year as you be welcomed and offered the opportunity to contribute! The minutes of the meeting, as well as a list of Division officers and standing committee members is included in this newsletter.

At our annual Mechanics Division Awards Banquet at Squatter's Pub Brewery we heard an entertaining talk by Donald Bloswick from the University of Utah about his eclectic career in engineering research and education. We also presented this year's Division's awards to a very deserving slate of awardees. A complete list of the award winners is included in this newsletter. Congratulations!

Finally, I huge thank you to last year's Mechanics Division Chair, Vince Prantil, for guiding the division through another great year and to last year's Program Chair Elect, Carisa Ramming, for her efforts in organizing our awards banquet.

Looking forward to seeing you all in Tampa!

Regards,
Devin Berg
Associate Professor and Program Director
Mechanical Engineering
University of Wisconsin-Stout
2018-2019 ASEE Mechanics Division Chair

JOIN US IN TAMPA June 16-19, 2019

Next year's ASEE Annual Conference & Exposition will be held in Tampa, FL, June 16-19, 2019. More information on the conference is available at:

<https://www.asee.org/conferences-and-events/conferences/annual-conference/2019>

Mechanics Division News and Announcements

Ares Rosakis, Division Member, Honored by ASME

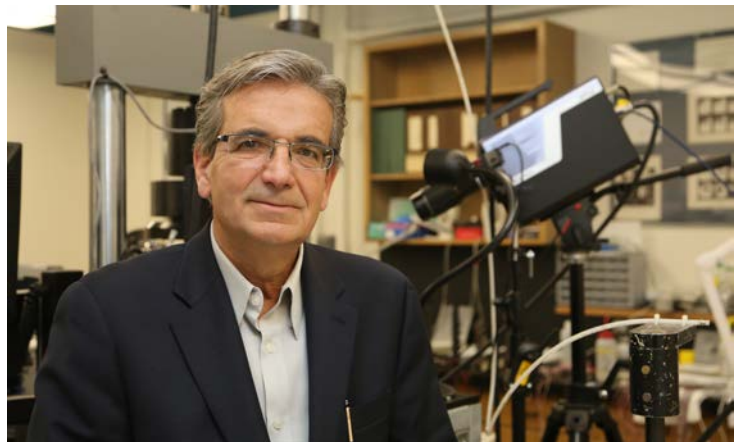
ASME Press Release:

NEW YORK, Sept. 17, 2018 – Ares J. Rosakis, a resident of Altadena, Calif., and professor at California Institute of Technology, is the recipient of an award from The American Society of Mechanical Engineers (ASME).

The former dean of the Division of Engineering and Applied Science at Caltech will receive the 2018 ASME Timoshenko Medal for pioneering contributions in the areas of earthquake source mechanics and seismic hazards mitigation. The prestigious medal will be presented Nov. 13, 2018, at the Applied Mechanics Dinner to be held in conjunction with the Society's International Mechanical Engineering Congress and Exposition, in Pittsburgh.

Widely published in the field of dynamic fracture mechanics of engineering solids, Rosakis has also applied optics-based experimental mechanics techniques and high-speed photography to investigate the basic physics governing seismic rupture nucleation and earthquake rupture growth. His research on "laboratory earthquakes" and discovery of "super-shear" earthquake speeds in the lab has earned Rosakis recognition and honors from several international science and engineering groups, including the American Society of Civil Engineers, American Association for the Advancement of Science, Society of Experimental Mechanics, and American Geophysical Union.

He is a member of the National Academy of Sciences, National Academy of Engineering, and American Association for the Advancement of Science, among other groups. A fellow of ASME, Rosakis received his education and training at Oxford and Brown University, earning a Ph.D. from Brown in 1983.



Engineering Educators Slack Channel

Division members are invited to join the new Engineering Educators Slack where you can ask and answer questions, discuss issues, and share resources. Join here: <https://bit.ly/2PX5kTn>

Collaboration Invitation: Open Educational Resource (OER) textbook for Statics and Dynamics

Dan Baker, Colorado State University, would like to hear from other mechanics instructors interested in developing an OER textbook for Statics and Dynamics that would include learning material (i.e. a book/website) along with a companion problem (homework) database to which all contributors could continually add. Anyone interested in learning more may contact Dan directly at dan.baker@colostate.edu.

Division Bylaws Revision Approved by ASEE Board of Directors

In Fall 2018, the ASEE Board of Directors approved the following bylaws revision that was previously approved by the Mechanics Division membership:

Previous Language: Article 3. Membership. The members of this Division are those members of the American Society for Engineering Education who identify to ASEE their wish to be affiliated with the group each year and who pay the division dues of \$2 per year.

Approved New Language: Article 3. Membership. The members of this Division are those members of the American Society for Engineering Education who identify to ASEE their wish to be affiliated with the group each year and who pay the division dues. The dues will be established or changed through a majority vote of the attendees present at the Annual Business Meeting.

The current bylaws are available at: <https://sites.asee.org/mechanics/bylaws/>

Annual Dues Increase

The division membership has approved an annual dues increase to \$3. This increase is effective with the bylaws change listed above.

Additional News Items

If you have any news items or announcements for the Spring 2019 newsletter, please send them to john.r.baker@uky.edu by March 15, 2019.

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 Ralph Flori at (573) 341-7583, reflori@mst.edu.

Call for Award Nominations (Submit by January 11, 2019)

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 **January 11, 2019**. To submit nominations (or to arrange by mail) or for additional information please contact the Awards Committee Chair Chuck Krousgrill at krousgr@purdue.edu

2018 Mechanics Division Awards

The Mechanics Division Annual Awards Banquet was held Tuesday, June 26, at Squatters Pub Brewery in Salt Lake City. Attendees were treated to a very interesting and entertaining presentation by Dr. Donald Blowski, Emeritus Professor at the University of Utah.

Please see: <https://mech.utah.edu/faculty/donald-bloswick-professor/>

The awards presented at the banquet are listed below. The Mechanics Division James L. Meriam Service Award was not awarded in 2018.

- **Ferdinand Beer and E. Russell Johnston, Outstanding New Mechanics Educator Award:** Jacob Moore, Penn State Mont Alto



McGraw-Hill Representatives Heather Ervolino and Shannon O'Donnell present the award to Jacob Moore, along with Mechanics Division Awards Chair, Phillip Cornwell (far right).

- **Archie Higdon Distinguished Educator Award:** Arun Srinivasa, Texas A&M University



Pearson Representatives Norrin Dias and Demetrius Hall present the award to Arun Srinivasa (second from right), along with Phillip Cornwell (far right).

- **Mechanics Division 2018 Best Paper Award:**

Paper Title: *Standardizing the Statics Curriculum across Multiple Instructors*

Authors: Kimberly Demoret, Jennifer Schlegel, and Matthew Jensen, Florida Institute of Technology



Mechanics Division Awards Chair, Phillip Cornwell (right), presents the award to Matthew Jensen and Kimberly Demoret.

- **Mechanics Division 2017 Best Presentation Award**

Paper Title: *Demo or Hands-on? A Crossover Study on the Most Effective Implementation Strategy for Inquiry-Based Learning Activities*

Authors: Brian P. Self and James M. Widmann, Cal Poly, San Luis Obispo



Mechanics Division Awards Chair, Phillip Cornwell, presents the award to Brian Self (left) and James Widmann (center).

2018 ASEE Mechanics Division Annual Business Meeting Minutes (DRAFT)

Note: A final version will be approved at the 2019 Mechanics Division Business Meeting. Please forward any needed corrections via email to john.r.baker@uky.edu.

Meeting Time: Tuesday, June 26, 2018, 7:00 AM to 7:55 AM

Location: Room 250 C, Convention Center -Salt Palace, Salt Lake City,UT

Attendees: John Baker, Devin Berg, Jakob Bruhl, Dale Cope, Phil Cornwell, Jul Davis, LeAnn Faidley, Carrie Francis, Matthew Jensen, Jen Kadlowec, Jacob Moore, Rungen Nathan, Masoud Rais-Rohani, Caria Ramming, Geoff Recktenwald, Brian Self, Kristi Shryock, Chris Venters, Anna Howard, Ed Howard, Chris Masters, Vince Prantil, Ren Tubergen.

Call to Order – 7:02 am (Prantil)

1. Welcome/Introductions (Prantil)
2. 2017 Business Meeting Minutes Approved (Motion: Anna Howard, Second: Jacob Moore)
3. Nomination of Directors for 2018-2022
 - a. Director 1: Phillip Cornwell
 - b. Director 2: Chris Venters
 - c. Treasurer: Jacob Moore
 - d. Secretary: John Baker
 - e. Program Chair Elect: Masoud Rais-Rohani
 - f. Awards Chair: Charles Krousgrill
 - g. Membership Chair: Jennifer Kadlowec

There were no contested offices or committee chair positions. Nominated directors were approved first (Motion: Jul Davis, Second: Jacob Moore). The Program Chair Elect was then approved (Motion: Brian Self, Second: Jen Kadlowec). The remaining officers and chairs were then also approved. Vince Prantil will file the new officer form with ASEE Headquarters.

4. Report from Division Officers
 - a. Chair (Prantil)
 - b. Program Chair (Berg)
 - b.i. Report on abstracts submitted, accepted and rejected
 - b.i.1. 41 abstracts submitted
 - b.i.2. 41 abstracts accepted
 - b.i.3. 0 rejected
 - b.ii. Report on papers submitted, accepted and rejected
 - b.ii.1. 29 papers submitted
 - b.ii.2. 29 papers accepted
 - b.ii.3. 1 paper removed by authors
 - b.ii.4. 0 papers in poster session
 - b.ii.5. 0 rejected
 - b.ii.6. 28 papers in the conference
 - b.iii. Report on how many reviewers
 - b.iii.1. 83 reviewers
 - b.iv. Report on sessions
 - b.iv.1. 6 technical sessions
 - b.iv.2. 1 business meeting (executive committee met off site)
 - b.iv.3. 1 awards banquet

- c. Program Chair-Elect (Ramming): The Awards Banquet is scheduled for the evening of the business meeting, Tuesday, June 26, at Squatters Pub Brewery in Salt Lake City. At the time of the business meeting, the awards banquet had 19 attendees paid through ASEE.
- d. Secretary (Baker): Spring newsletter published in May, 2018.
- e. Treasurer (Moore): On Oct 1, 2017, division had \$8,096 in BASS 303 in Operating Account.

There was discussion regarding the desire of the ASEE Board of Directors that each division retain about two years of budget in reserve and that each division develop a plan for retaining a reserve balance. There was consensus on the following plan with no objections raised:

The division will hold two years of operating expenses in reserve in its BASS account. Current reserve levels are set at \$10,000. Monies collected beyond that reserve level will be used to supplement additional awards or to reduce expenses such as the price for members to attend the annual awards banquet.

- f. Awards Committee (Cornwell)
 - Sponsors of awards:
 - \$2000 from McGraw-Hill.
 - \$2000 Pearson (doubled up because invoices weren't sent last year).
 - Two awards checks for \$750 will be sent out.
 - g. Membership committee (Kadowec): Membership is low, at approximately 200. There was discussion of passing out pens at the ASEE Division Mixer. Jen will come up with options. Members present are urged to encourage friends to consider joining.
 - h. Archivist/Hands-on Mechanics Website (Berg): The hands-on website is available. Devin is still uploading materials. There have been no interaction or comments posted, but there have been lots of looks. Members are encouraged to check it out and contribute.
5. PIC III Chair (Imbrie)
- For the first time in a while, ASEE has money in reserve.
 - The division should have a process in place for nominating members for society awards. There were only about 20 nominees this year.
 - The Program Chair-Elect can now access Monolith.
 - There were 3,841 registered for the conference this year.
 - ASEE is losing about 400 members per year.
6. New Business: None
7. Adjournment (Motion: Jacob Moore, Second: Ren Tubergen). Meeting adjourned at 7:55 am.

2018-19 Mechanics Division Officers and Standing Committees

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

Past Chair: Vincent Prantil, Milwaukee School of Engineering
(414) 277-7451, prantil@msoe.edu

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

Program Chair Elect: Masoud Rais-Rohani, Mississippi State University (2014–18)
(662) 325-8430, masoud.raisrohani@maine.edu

Directors: Ning Fang, Utah State University (2015–19)
(435) 797-2948, ning.fang@usu.edu

Kristi Shryock, Texas A&M University (2015–19)
(979) 845-0735, kshryock@tamu.edu

Julian Davis, University of Southern Indiana (2016-20)
(812) 461-5489, jldavis2@usi.edu

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

Secretary: John Baker, University of Kentucky
(270) 534-3114, john.r.baker@uky.edu

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

Webmaster: Brianno Coller, Northern Illinois University
(815) 753-9944, bcoller@niu.edu

Archivist: Ralph Flori, University of Missouri – Rolla
(573) 341-7583, reflori@mst.edu

Nominating Committee: Vincent Prantil, Chair (prantil@msoe.edu), Brianno Coller (bcoller@niu.edu), Christopher Papadopoulos (christopher.papadopoulos@upr.edu)

Membership Committee: Jennifer Kadlowec, Chair (kadlowec@rowan.edu), Matthew Jensen (mjensen@fit.edu), Julian Davis (jldavis2@usi.edu), Jennifer Kadlowec (kadlowec@rowan.edu), Shelley Lorimer (lorimers@macewan.ca)

Awards Committee: Charles Krousgrill, Chair (krousgr@purdue.edu), Jakob Bruhl (jakob.bruhl@usma.edu), Julian Davis (jldavis2@usi.edu), Jim Papadopoulos (jpapadopoulos@partners.org)

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

Chris Venters, East Carolina University - Executive Committee Director (2018-22)



Chris Venters is an Assistant Professor of Engineering at East Carolina University. He received his Ph.D. in Engineering Education and M.S. in Aerospace Engineering from Virginia Tech and his B.S. in Aerospace Engineering from NC State University. His primary research areas include conceptual knowledge development and assessment, relationships between procedural and conceptual knowledge, metacognition, and writing-to-learn in engineering. Much of Chris's research has been situated in statics. At ECU, he teaches courses in engineering design and engineering mechanics.

Phillip Cornwell, Rose-Hulman Institute of Technology - Executive Committee Director (2018-22)



Phillip Cornwell is a Professor of Mechanical Engineering at Rose-Hulman Institute of Technology. He received his Ph.D. from Princeton University in 1989, and his present interests include structural dynamics, structural health monitoring, and undergraduate engineering education. Phil has received an SAE Ralph R. Teetor Educational Award in 1992, the Dean's Outstanding Teacher award at Rose-Hulman in 2000 and the Rose-Hulman Board of Trustees Outstanding Scholar Award in 2001. He was one of the developers of the Dynamics Concept Inventory and the Rose-Hulman Sophomore Engineering Curriculum. He is a co-author of *Vector Mechanics for Engineers: Dynamics*, by Beer, Johnston, Cornwell, and Self. In addition, he helped develop the Los Alamos Dynamics Summer School at Los Alamos National Laboratory and was a mentor in the program for many years.

ASEE - Society 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.

Please visit:

<https://www.asee.org/member-resources/awards>

www.asee.org/member-resources/awards/full-list-of-awards

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.

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 “2018-19 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 2019 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 Devin Berg (bergdev@uwstout.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, John Baker (john.r.baker@uky.edu), or Division Chair, Devin Berg (bergdev@uwstout.edu), before the 2019 Annual Business Meeting.