

Mechanics Division Newsletter

Spring 2025

Chair: Chris Venters

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

Secretary: Adrian Rodriguez

Message from the Chair

Greetings from North Carolina on this (currently) cold February day. I don't have much in the way of division updates, but as we look forward to reuniting in Montreal in June for the ASEE Annual Conference, I will highlight a few of our planned division events.

Our ***Hands-on Mechanics special session*** is an annual favorite, showcasing engaging demos and other hands-on activities from fellow mechanics educators. If you have something that you would like to share during this informal session, please email program chair Dan Baker (dan.baker@colostate.edu) for more information.

The ***Mechanics Division Awards Banquet*** (social - ticketed) is a great way celebrate the accomplishments of our members while reconnecting with friends and meeting new faces. Among the awards presented will be those described in the "Call for Award Nominations" in this newsletter, along with awards for the 2025 Best Paper and 2024 Best Presentation.

All are welcome at our division ***business meeting*** on the Wednesday of the conference, where we will elect new officers and discuss other items. I hope you will consider attending and getting involved in the leadership of the division. Thank you to all current officers and committee members, who are listed near the end of this newsletter.

And of course, plan to attend our ***technical program***, which is shaping up to be the largest in recent years based on the anticipated number of papers.

Looking forward to seeing you in Montreal!

Chris Venters

2024-2025 ASEE Mechanics Division Chair

Associate Professor

East Carolina University

ventersc@ecu.edu

JOIN US AT THE MECHANICS DIVISION BANQUET!

Burgundy Lion
Tuesday, June 24, 2025
6:00-8:00 p.m.

Come out and connect with your fellow division members at an event that is no short of surprises! Don't miss out!

Message from the Program Chair

I am excited to see everyone in Montreal! Thanks to many of you, we will have nearly 50 papers presented by our division in 10 sessions. As you plan your flights, try to stay for most of the day on Wednesday as we have our Business meeting that morning and three technical sessions that day, wrapping up at 3:30 pm. We also promoted a Sunday Workshop: Unlock the Future of Teaching with PrairieLearn: Transform Your Mechanics Courses with OER Assessments.

Have a great spring!

Dan Baker

2024-2025 ASEE Mechanics Division Program Chair

Teaching Associate Professor

Colorado State University

dan.baker@colostate.edu

Mechanics Division News and Announcements

Resources: Open Educational Resources (OER) for Mechanics

Contributed by Dan Baker and Jacob Moore

Have you ever wanted 100% of your students to have access to the course textbook from the first day of your course until after they have graduated, all free of charge? Open Educational Resources (OER) may be your answer. OER are a high-quality alternative to commercial textbooks, with the opportunities in Engineering Mechanics growing each year. Here are two resources we have written:

- [Engineering Statics by Daniel Baker and Will Haynes](#) - Engineering Statics is a free, openly licensed textbook used by over 20,000 learners each month. The text covers all the standard Engineering Mechanics: Statics topics and features interactive figures that allow students to test their conceptual knowledge as they read. Additionally, most chapters conclude with a series of algorithmic exercises for students to practice what they have learned.
- [Mechanics Map by Jacob Moore](#) - The Mechanics Map is another free and openly licensed textbook for engineering statics and dynamics. Used by more than 14,000 learners each month, the resource has written explanations, video lectures, hundreds of worked examples with both written and video solutions, and a full set of homework problems.

Outside of the content that the article's authors have created and used themselves, several other open resources exist. Below are just a few examples of open content you might consider incorporating into your courses.

- [Mechanics of Materials by David Roylance](#) – This book was written as part of the Massachusetts Institute of Technology Open Courseware Project and has since been brought into [LibreTexts](#), where students, faculty, and outside experts work together to build freely available open education resources (OER). LibreTexts has a convenient remixing feature that allows an instructor to pull content from various books and have it remixed into a cohesive, custom online text.
- [Engineering at Alberta](#) – Hosted by the University of Alberta, this resource includes content for a number of introductory and advanced mechanics courses, including statics, solid mechanics and FEA, vibrations, and advanced dynamics.
- [Engineering Mechanics: Statics by Libby Osgood, Gayla Cameron, Emma Christensen, Analiya Benny, and Matthew Hutchison](#) – This textbook is built in the popular Pressbooks system. The book pulls heavily from Mechanics Map discussed earlier but expands upon and adapts the content, bringing it in a different direction as is allowed with some of the Creative Commons licenses.
- [Applied Fluid Mechanics Lab Manual by Habib Ahmari and Shah Md Imran Kabir](#) – This lab manual provides students with the theory, practical applications, objectives, and laboratory procedure of ten experiments. The manual also includes educational videos showing how students should run each experiment and a workbook for organizing data collected in the lab and preparing result tables and charts.
- [Hands-On Mechanics](#) – Last but not least, the Mechanics Division hosts a website full of hands-on activities shared by our members that you can bring into your classroom. The site is curated by Devin Berg, longtime webmaster for the division, and the system allows for anyone to upload and share their own materials as well as a system for reviewing content.

These are just some of the resources out there. Please consider using OER to increase student access and reduce student costs. We recommend searching the web, <https://oercommons.org/>, or <https://open.umn.edu/opentextbooks> to find OER options for the courses you teach. If you don't find exactly what you are looking for remember that many of the resources allow you to mix and match content or to add to the content yourself, and if you are open to it (pun intended) you might even consider licensing your own materials openly and sharing them with other mechanics educators.

Survey: New Rigid Body Dynamics Concept Inventory

Contributed by Aime Baisley, Jul Davis, Geoff Recktenwald, Phil Cornwell, and Brian Self

Dear Mechanics Division,

At the 2024 annual meeting we presented our work-in-progress paper on a new rigid body dynamics concept inventory:

<https://nemo.asee.org/public/conferences/344/papers/42364/view>

As a follow up to that presentation, we would appreciate feedback from the Mechanics Community on the concept list we presented. To that end, we would ask that you please take about 10 minutes to fill out the following survey where you will be asked to indicate the importance of each dynamics concept and how well students understand the concept at the end of a semester:

https://ufl.qualtrics.com/jfe/form/SV_b9ktY6LdwXwUxtY

DEI Updates: ASEE Commission on DEI Quarterly Meeting (Sept. 2024)

Contributed by Adrian Rodriguez, Mechanics DEI Delegate

CDEI updates and General reminders:

- As you continue to review papers, keep an eye out for **DEI**-focused papers and mark them accordingly!
- Are you interested in getting involved in DEI at ASEE 2025? Please consider volunteering to review DEI papers:
 - The review process will occur between April 8-30, 2025.
 - Each volunteer reviewer will be assigned 3 papers to review.
 - Please fill out this [form](#) no later than **Feb. 28** if you are interested in volunteering!
- Do you know of a group (not affiliated with ASEE) that is championing DEI in their organization?
 - Nominate them for the **2025 ASEE Constituent Diversity, Equity & Inclusion Award**. An ASEE constituent includes, but is not limited to, ASEE Divisions, Councils, Zones, Regions, Committees, and ad hoc groups (not individuals).
 - Submit your nomination and supporting materials using this [form](#) by **Feb. 28**.

Archival Materials

Do you have any interesting Division materials from past decades? Specific materials can 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.

Call for Award Nominations

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 during the ASEE Annual Conference at the Mechanics Division Awards 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 during the ASEE Annual Conference at the Mechanics Division Awards Banquet, a \$750 cash prize, and registration for the Mechanics Division Banquet at the 2025 Annual Conference for the awardee and a guest.

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 during the ASEE Annual Conference at the Mechanics Division Awards 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 28, 2025**. Please submit nominations here: <https://forms.gle/biHywoe9KFHPWm2c9>. For additional information, please contact the Awards Committee Chair James Lord (jlord@vt.edu).

2024-2025 Mechanics Division Officers and Standing Committees

Chair: Chris Venters, East Carolina
(252) 737-1028, ventersc@ecu.edu

Program Chair: Dan Baker, Colorado State University
(970) 491-0261, dan.baker@colostate.edu

Program Chair Elect: Anna Howard, North Carolina State University
(919) 513-4019, annahoward@annahoward.com

Past Chair: Geoffrey Recktenwald, Michigan State University
(517) 432-3658, gdr@egr.msu.edu

Directors:

Andrew Sloboda, Bucknell University (2021-2025)
(570) 577-1861, andrew.sloboda@bucknell.edu
Nicolas Libre, Missouri University of Science and Technology (2022-2026)
(573) 341-7069, libren@mst.edu
Amir Danesh-Yazdi, Rose-Hulman Institute of Technology (2022-2026)
(812) 877-8305, daneshya@rose-hulman.edu
Amie Baisley, University of Florida (2023-2027)
(352) 392-4523, amie.baisley@eng.ufl.edu
Jacob Moore, Penn State Mont Alto (2023-2027)
(717) 749-6209, jmoore@psu.edu
Kristi Shryock, Texas A&M University (2023-2027)
(979) 458-6842, kshryock@tamu.edu
Hadas Ritz, Cornell University (2024-2028)
(607) 255-0897, hr32@cornell.edu

Secretary: Adrian Rodriguez, University of Texas at Austin
(830) 968-7054, adrian.rodz@utexas.edu

Treasurer: Sahithya Reddivari, Georgia State University - Perimeter College
(678) 891-3735, sreddivari@gsu.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: Geoffrey Recktenwald (Chair, gdr@egr.msu.edu), Phil Cornwell (phil.cornwell@usafa.edu), Jul Davis (julian.ly.davis@usi.edu)

Membership Committee: Jul Davis (Chair, jldavis2@usi.edu), Amie Baisley (amie.baisley@eng.ufl.edu), Maxine Fontaine (mkwan@stevens.edu), Amir Danesh-Yazdi (daneshya@rose-hulman.edu), Kristi Shryock (kshryock@tamu.edu)

Awards Committee: James Lord (Chair, jlord@vt.edu), Fanny Silvestri (silvestri.fanny@gmail.com), Jacob Moore (jmoore@psu.edu), Christine Masters (cbm100@psu.edu), Chris Papadopoulos (for plaques, christopher.papadopoulos@upr.edu), Alexander De Rosa (derosa@udel.edu), Hadas Ritz (hr32@cornell.edu), Huihui Qi (huiqi@eng.ucsd.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.

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 “2024-25 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: 3 years.

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 2025 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 Chris Venters (ventersc@ecu.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.

2025 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, Adrian Rodriguez (adrian.rodz@utexas.edu) or Division Chair, Chris Venters (ventersc@ecu.edu), before the 2025 Annual Business Meeting.