



ASEE Environmental Engineering & Sustainability Division Newsletter

Spring 2025

A Message from the Division Chair

Dear Colleagues,

I hope you are enjoying the summer weather and that this letter finds you well. I am excited to see many of you at our 2025 Annual Conference this June in Montreal, Quebec. The overarching theme for this year's conference is "Engineering Educators Bringing the World Together." What a timely and appropriate theme for this year's conference in Canada.

You know, we have an amazing division, and I want to extend my sincere thanks to all our members who continually mold and shape the next generation of environmental engineers and sustainability professionals. And yes, you are reading this correctly – we have now officially included sustainability professionals in our division. To emphasize this point, we now have a new division name! As of this year, we are the Environmental Engineering and Sustainability Division. The name change is a testament to the growing field of sustainability education and our on-going collaboration with outstanding programs like [Engineering for One Planet](#). Many thanks to previous Division Chairs Dr. David Sanchez and Dr. Shannon Isovitsch Parks for spearheading the division name change over the last two years.

Of note, we are looking to change our division's short name. In the past we have gone by "EED"; however, our actual short name is "ENVIRON." We will be discussing a change from ENVIRON to something more appropriate for our current division title at our annual Division Business Meeting. Speaking of which, our Business Meeting at this year's annual conference is on Tuesday, June 24th (3:15 to 4:45 PM). Please, please attend!

Amazing Program this Year! In addition to the business meeting, the number of sessions and panels our division is hosting at this year's ASEE Annual Conference is significant. We have six (!!) technical sessions, we have three panels, and we are participating in (co-sponsoring) several other panels. Please read further into this newsletter and/or look on-line at the ASEE Session Locator to find details about each event our division is hosting this year. I think this is some sort of a recent record for our division! Many, many thanks to Dr. Alexa Rihana-Abdallah for doing an absolutely phenomenal job as Program Chair! I couldn't have asked for a better partner as a division leader this year.

Nominate a Treasurer! Speaking of division leadership, we are looking for a new treasurer starting after the Annual Conference is complete. Being an officer in our division is a lot of fun! If you are interested in joining the leadership team, we are planning to elect our 2025-2026 treasurer at this year's annual conference! All nominations (self-nominations are welcome!) can be sent to me at andrew.pfluger@westpoint.edu. Candidates can also be nominated at our annual Business Meeting. As a reminder, signing up for treasurer starts a four-year journey in our division. Once elected, the new treasurer will progress to Secretary in 2026-2027, then Program Chair in 2027-2028 for the ASEE Annual Conference in Pittsburgh, PA, and then Division Chair in 2028-2029.

And after you nominate or vote for someone at our Business Meeting, please join us at our Division Social, which will go on Tuesday, June 24th from 7:00 to 9:00 PM. We will present awards, have great food, and chat about life as an educator (or really anything)!

Thank you to our Authors, our Division Delegates, our Division Director Team, and our Division Leadership. Serving as the Division Chair has been a fun and fulfilling job – mainly due to who I get to work with. First, thanks to the faculty and students who serve as authors, reviewers, and moderators. It is your hard work that powers our division! Second, thank you to our Division Delegates. We have really expanded participation in our Division leadership with delegate positions – right now we have a leadership team of almost a dozen awesome educators. Thanks also to our Director Team – each of which has provided fantastic guidance throughout the year: Dr. Michelle Marincel-Payne, Dr. Fethiye Ozis, Dr. David Sanchez, and Dr. Shannon Isovitsch Parks. A further huge thank you to not just Dr. Alexa Rihana-Abdallah (who should be thanked continuously for at least a week), but also to our Division Secretary, Dr. Stephanie Laughton, and our Division Treasurer, Dr. Jenny Mueller, who have done an absolutely amazing job this year!

I am looking forward to seeing all of you in Montreal!

Sincerely,

Dr. Andrew Pfluger



ASEE ENVIRON Events at the 2025 Annual Conference in Montreal

ASEE ENVIRON Business Meeting

*Tues. 24 June 2025
3:15PM - 4:45PM
Salle B, Westin Montreal*

Members are strongly encouraged to attend and provide input for improvement ahead of the 2026 conference.

Key items for input:

(1) The Division Name has changed to “Environmental Engineering & Sustainability Division” this presents the need for a new short name. Name proposals will be collected and voted on during the meeting.

(2) The Business Meeting is where candidates for the Treasurer are presented to the division and the online election ballot is opened (closes at end of conference). Before the conference, nominations, including self-nominations, can be sent to Division Chair, Dr. Pfluger. Nominations will also be taken during the meeting.

Unable to join us this year in Canada?

Technology (wifi) permitting, we are planning to livestream the Business Meeting via Zoom so you can join remotely to stay up-to-date on Division activities—including getting to know the nominees for Treasurer. Keep an eye on your email for the link!

Annual Social Event & Awards Dinner

*Tues. 24 June 2025
7:00PM - 9:00PM
Restaurant Les Pyrénées (320 Saint-Paul St. W)*

Join us for an evening of food and fun at our Social Event & Awards Dinner. This event is open to all conference attendees and division members, as well as family and friends.

Please indicate your attendance via event titled “T725-Environmental Engineering & Sustainability Division Social” in your Conference Registration. This is a “free ticketed event” in the registration system so we have an accurate head count for the restaurant; however, meal payment will take place on an individual basis at Les Pyrénées.

During the event, we will present certificates to the Division Award recipients and will honor our outgoing Division Leadership.

ENVIRON Panels

T225 - Developing an Interdisciplinary Master's Program on Sustainability in Engineering and Design

*Tues. 24 June 2025
9:15AM - 10:45AM
515C, Palais des congrès de Montreal*

The Trottier Institute of Sustainability in Engineering and Design (TISED) at McGill University has launched a Master's program on sustainability in the areas of engineering and design. These important areas are part of the solutions for climate change and other sustainability challenges and are most effective when social, environmental, and economic ramifications are collectively assessed. The program was conceived as an innovative offering that delivers sustainability training and education in an interdisciplinary environment.

Moderated by Dr. Alexa Rihana Abdallah and Lt. Col. Andrew Pfluger

Panelists: Dr. Subhasis Ghoshal, Dr. Jim Nicell, and Dr. Yaoyao Zhao (McGill University)

T325 - Engineering for One Planet Mini-Grant Program: Teaching Sustainability across the Higher Education Landscape

*Tues. 24 June 2025
11:00AM - 12:30PM
515C, Palais des congrès de Montreal*

The panel will introduce the audience to the Lemelson Foundation Engineering for One Planet (EOP) initiative Mini-Grant Program (MGP). For the past three years, the EOP-MGP has brought teams of engineering educators together to develop curricula in engineering that puts sustainability at the core of engineering principles including design, manufacture, and scalability. The goal of the EOP-MGP is not only to produce new coursework and pedagogical approaches, but also to unite and empower the broader community of engineering educators and their students who are committed to sustainability throughout the life cycle of any engineering solution.

Moderated by Rachel Koroloff, Dr. Sarah Deleeuw, and Dr. David Sanchez

Panelists: Cindy Cooper (Lemelson Foundation), Dr. Medha Dalal (Arizona State University), Dr. Terrell Strayhorn (Virginia Union University), Dr. Roneisha Worthy (Kennesaw State University), Dr. Dustyn Roberts (University of Pennsylvania), Dr. Christopher Papadopoulos (University of Puerto Rico– Mayaguez)



ASEE ENVIRON Events at the 2025 Annual Conference in Montreal

ENVIRON Panels (Continued)

W425 - Environmental Engineers Solving Problems of Planetary Health

*Wed. 25 June 2025
2:00PM - 3:30PM
512D, Palais des congrès de Montreal*

Planetary health is defined as, "... a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth," (Planetary Health Alliance). In September 2023, the United States Bureau of Labor Statistics updated the formal definition of job code 17-2081 Environmental Engineers. The current definition now includes that, "environmental engineers use engineering disciplines in developing solutions to problems of planetary health." A moderated discussion of faculty leaders who share their views on common questions and their perspectives of classroom experiences will provide exemplars for the audience to consider as part of open discussion to incorporate the new definition of environmental engineering into classrooms, laboratories, and experiential learning environments nationally.

Moderated by Dr. Alexa Rihana Abdallah

Panelists: Dr. Daniel Oerther (Missouri University of Science and Technology), Lt. Col. Andrew Pfluger (United States Military Academy), Dr. Jennifer Lueller (Rose-Hulman Institute of Technology), and Dr. Sarath Jagupilla (Stevens Institute of Technology)

Co-Sponsored Panel

T316 - Campus as a Living Classroom for Transformative Energy Performance; Can Engineering Educators Shift the Paradigm to Speed Up the Process?

*Tues. 24 June 2025
11:00AM - 12:30PM
512H, Palais des congrès de Montreal*

The Panel will share the collaborative work being accomplished by three academic institutions to decarbonize their campuses to create "Living Classrooms" while shifting the academic paradigm to equip energy engineers and others to accelerate the successful, community-scale energy transitions. The ASEE Conference theme of "Engineering Educators Bringing the World Together" is fitting for this discussion.

The panel will review their preliminary findings based on both their own institutions' experiences and wider benchmarking. These indicate there is a need for relevant, integrated multi-disciplinary energy transition education, structured around real-world scale projects that are large enough to represent the challenges of holistic decarbonization, and are structured for rapid replication. They also show the need to constantly incorporate technical and other best practices from anywhere in the world.

ENVIRON Poster Session

Mon. 23 June 2025 9:15AM - 10:45AM

001– Exhibit Hall 220 ABCDE, Palais des congrès

Board #155: Assessing the impact of project-based courses for engineering professional identity formation in 1st and 2nd year environmental engineering students

Board #156: Transforming Civil Engineering Education: Integrating the EOP Framework Across Four Courses

ENVIRON Technical Sessions

M325 - Technical Session 1: Integrating Sustainability in Engineering Curriculum: Pedagogy, Assessment, and Systems Thinking

*Mon. 23 June 2025 11:00AM - 12:30PM
515C, Palais des congrès de Montreal*

Incorporating the Envision Rating System as a Teaching Tool for Sustainability in Civil Engineering Infrastructure

On the Symbiotic Nature of Science, Sustainability, and Systems Thinking in an Introductory Course on Sustainability Concepts

More than Box-ticking: Accreditation and the Integration of Sustainability into Canadian Engineering Education

A vision for advancing sustainability pedagogy in engineering through ethnographic design awareness
Emotions in Education for Sustainability in Engineering

M425 - Technical Session 2: Course-level Innovations in Environmental Engineering: Projects, Case Studies, and Social Impact

*Mon. 23 June 2025 1:30PM - 3:00PM
515C, Palais des congrès de Montreal*

Application of Single-Point Rubrics in Introductory Environmental Engineering Projects: A Case Study

Bridging the Green Skills Gap: Engaging Undergraduate Students as Changemakers in Engineering Education

Beyond OILRIG: Impact of applied redox chemistry modules on cognitive and affective outcomes in a water and wastewater engineering course

Evaluating the inclusion of environmental justice in the civil engineering curriculum: Does it motivate students to work against inequity and strive for environmental and social justice?

Designing and Implementing Integrated Project Based Courses for First- and Second-Year Environmental Engineering Students



ASEE ENVIRON Events at the 2025 Annual Conference in Montreal

ENVIRON Technical Sessions

M525 - Technical Session 3: Emerging Trends in Engineering Education: AI, Clean Energy, and Curriculum Design

*Mon. 23 June 2025 3:15PM - 4:45PM
515C, Palais des congrès de Montreal*

The Global Context of Clean Energy Materials, an EOP aligned undergraduate engineering course
Harnessing the Power of GenAI: A New Era for Data Science Education for Civil and Environmental Engineering
Process Mining for Curricular Insight: Evaluating Student Progression in Environmental Engineering Programs
A New "Age of Generative AI" Paradigm for the Development and Management of Curricula in Undergraduate Environmental Engineering Programs

T425 - Technical Session 4: Embedding Engineering for One Planet (EOP) Framework in Engineering Education

*Tues. 24 June 2025 1:30PM - 3:00PM
515C, Palais des congrès de Montreal*

Integrating Sustainability into Materials Courses through the Engineering for One Planet Framework
Applying Engineering for One Planet (EOP) Framework to Teach Environmental Risk in Two Institutions
Enhancing Sustainability Literacy in Engineering Education: Insights from Implementing the Engineering for One Planet Framework
Redefining Engineering Education: A Sustainable and Inclusive Approach through the EOP Framework
Enhancing Civil Engineering Curriculum with Engineering for One Planet (EOP): Insights from an EOP Mini-Grant Project
Integrating Engineering for One Planet Principles in Engineering Design Curriculum

ENVIRON Technical Sessions

W125 - Technical Session 5: Toward a New Paradigm in Environmental Engineering: From Knowledge Frameworks to Learning Impact

*Wed. 25 June 2025 8:00AM - 9:30AM
522B, Palais des congrès de Montreal*

Integration of Sustainability in STEM Programs: Assessing Student Knowledge and Perceptions
Towards a Refresh of the Environmental Engineering Body of Knowledge
Re-envisioning the Curricular Pathway in Environmental Engineering
Active learning in introductory environmental engineering course
Environmental Engineering Grand Challenges Revisited: Integrative Review of Educational Efforts 2019 to 2024

W326 - Technical Session 6: Transformative Practices in Evolving Learning Environments

*Wed. 25 June 2025 11:30AM - 1:00PM
522A, Palais des congrès de Montreal*

Teaching Teachers to Integrate Sustainability into Engineering Education: Lessons Learned from UTA's EOP Institutionization Program
Collaborative Learning in Engineering: Analyzing the Effects of Group Formation on Student Outcomes
Gender-Based Performance in a Collaborative Learning Engineering Classroom
Documenting takes on recycling, honing rapid ethnographic skills: Transdisciplinary graduate student explorations in a rural U.S. southwestern campus community
Pandemic Educational Interventions - Minimal Impact on Student Grades as a Proxy for Student Learning

Save the Date!

While we are happy for all those who plan to join us in 2025 in Montreal, Canada,
We also hope to see you at next year's conference.
The Call for Papers will be issued in September.

ASEE Annual Conference & Exposition 2026
Charlotte, North Carolina
21-24 June 2026



ASEE ENVIRON 2025 Division Awards

2025 Best Faculty Paper Award

This award recognizes the best paper submitted to the Division. The author must be a current member of the ASEE ENVIRON Division. The author (not a graduate student or colleague) must present the paper. For multiple authors, at least one author must be a division member, and the presentation at the conference must be made by a division member.

Paper Title: On the Symbiotic Nature of Science, Sustainability, and Systems Thinking in an Introductory Course on Sustainability Concepts

*Presented in Session M325
Monday 23 June 11:00 AM
515C, Palais des congrès de Montreal*

Christopher Papadopoulos, PhD is Professor of Engineering Sciences and Materials at the University of Puerto Rico, Mayagüez (UPRM). He earned B.S. degrees in Civil Engineering and in Mathematics from Carnegie Mellon University (1993) and a Ph.D. in Theoretical and Applied Mechanics at Cornell University (1999). At UPRM he is a member of the steering committee of the



Sustainability Engineering initiative, which seeks to develop new Minor, Bachelors, Masters, and professional certificate programs. In this regard he is PI of A New Paradigm for Sustainability Engineering: A Transdisciplinary, Learner-Centered, and Diversity-Focused Approach, (de)funded by the NSF HSI program and he is a member

of the Engineering for One Planet Network. He also co-chaired the 18th International Conference on Nonconventional Materials and Technologies (NOCMAT2022). Papadopoulos brings a systems thinking, transdisciplinary, circular-economic/cradle-to-cradle mindset to sustainability innovation, curricular design, and pedagogy, and personal lifestyle, actively collaborating with several faculty, students, and sustainability-focused organizations in Puerto Rico and in the US.

Christopher Jensen, PhD is a Professor in the Department of Math and Science at the Pratt Institute in New York where he teaches a variety of environmental science, ecology, and evolutionary biology courses to Pratt students. In addition to his technical research in cultural and biological system interactions, he conducts pedagogical research aimed to identify best-practices for scientific learning in non-majors and fostering their application of scientific learning in professional and personal lives.



Ivan Baiges-Valentin, PhD is a Professor at the University of Puerto Rico– Mayaguez. (UPRM) His technical research in material science and engineering focuses on the relationships between plastics, industrial ecology, and sustainability. At UPRM, he was part of the team responsible for developing and implementing the campus's Environmental Management System and the Materials Impact Management System.



Krystal Colón Rivera, M.S., Licensed Psychologist (P.R.), is a doctoral student in the School Psychology Program at the University of Puerto Rico, Mayagüez Campus. She holds a master's degree in School Psychology. Her professional experience includes psychological assessments, socioemotional interventions, and applied research in school and university settings. She has collaborated on interdisciplinary projects related to sustainability in engineering, executive functions, and mental health. Her doctoral research examines the impact of a sustainability-focused engineering curriculum on students' mindset, executive planning, and academic performance. Her areas of interest include executive functions, physical activity, how children and youth learn, and the development of culturally responsive interventions.





ASEE ENVIRON 2025 Division Awards

2025 Best Student Paper Award

This award recognizes the best paper written by a student. The first author of the paper must be an undergraduate or graduate student, must be an ENVIRON member, and must present the paper at the Annual Conference. Faculty may be co-authors. The paper must focus on pedagogical issues. The Division may award up to three awards per year.

Harnessing the Power of GenAI: A New Era for Data Science Education for Civil and Environmental Engineering

*Presented in Session M525
Monday 23 June 3:15 PM
515C Palais des congrès de Montreal*



Matthew Yukio Takara is a PhD student at Carnegie Mellon University in the Department of Civil & Environmental Engineering. His technical research area is in Machine Learning and sensing applications for sustainability in smart cities.



Dr. Fethiye Ozis is an Associate Teaching Professor in Carnegie Mellon University's Department of Civil & Environmental Engineering. In her role, she teaches a wide range of courses across the curriculum, conducts research on innovative pedagogical strategies, and supervises graduate students conducting educational research in the department.



Dr. Allison Connell Pensky is a Senior Data Science Research Associate at Carnegie Mellon University. Her role is to work closely with instructors to support assessment goals. More recently, she has cooperated and led several research projects related to generative AI in the university classroom.

2024-2025 ENVIRON Division Officers

Division Chair

COL Andrew Pfluger, Ph.D., P.E.,
BCEE
Associate Professor
Department of Geography &
Environmental Engineering
United States Military Academy
West Point, NY



Program Chair

Dr. Alexa Rihana-Abdallah
Professor
Civil, Architectural & Environmental
Engineering
University of Detroit-Mercy
Detroit, MI



Secretary

Dr. Stephanie Laughton
Assistant Professor
Department of Civil, Environmental,
and Construction Engineering
The Citadel
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Treasurer

Dr. Jennifer Mueller, P.E.
Associate Professor
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Terre Haute, IN

