

# The ASEE Environmental Engineering Division Newsletter

Spring 2021

## A Message from the Division Chair

Dear Colleagues,

Congratulations for successfully completing the pandemic-academic year of 2020-21! Under changing constraints, we adapted to online and hybrid teaching, adjusted to new schedules and expectations, and learned to communicate and collaborate using new media. Throughout this past year, I have been amazed at the creativity and resiliency of our community in confronting these challenges. While this year's ASEE conference is virtual, I hope it will allow you easy access to ideas to energize your teaching as we continue to grapple with uncertainty for the upcoming fall, and opportunities to connect with colleagues and friends—connections that we desperately seek.

Now that summer is in full swing with “the sun above”, our outstanding Program Chair, Dr. Fethiye Ozis, has prepared an exceptional program for us to look to “the future ahead”. Our program will feature four strong, relevant technical sessions. I hope these sessions enable conversations and spark idea-sharing related to our roles as engineering educators who are also curators of inclusive teaching and public health professionals.

Beyond these inspiring sessions, we are pleased to offer opportunities for discussion throughout the conference. We know we all yearn for personal and professional connections a year and a half into the Covid-19 Pandemic, so we have prepared time to discuss best practices we might carry forward in our teaching from our adapted teaching techniques. We have also scheduled time to discuss opportunities for collaboration between the environmental engineering professional communities of ASEE, the Association of Environmental Engineering and Science Professors (AEESP) and the American Academy of Environmental Engineering and Science (AAEES). We are additionally collaborating with the Women In Engineering Division to provide a panel on the relevant topic of “Advocacy and Allyship by Men for Women in Engineering-Related Fields”. Please find a full list of our technical program on the next page.

An ASEE conference wouldn't be complete without our business meeting and social! We hope you'll join us Wednesday morning for our business meeting and then again that evening for the social—we'll have games and fun ready for you. Please consider actively engaging with our division: we need to elect our 2021-22 treasurer, update our bylaws, and discuss a new logo. If you are interested in serving on the leadership team, [nominations \(including self-nominations\) can be submitted HERE](#), and I hope you'll consider joining our team. The ballot will be sent out at the beginning of the conference and close after the social. We'll be in touch. If you have any questions, please don't hesitate to reach out.

As I reflect on the past four years, I have thoroughly enjoyed serving our division and look forward to continuing as an active member of our community. It has been my great honor to work with past and present colleagues. I sincerely thank past leaders in addition to our current leadership team: Program Chair, Dr. Fethiye Ozis, Secretary, Dr. David Sanchez, and Treasurer, Dr. Shannon Isovitsch Parks, as well as diversity representative, Alexa Rihana-Abdallah and P-12 representative, LTC Andrew Pfluger, for their dedication to our division and efforts to create an excellent conference. Lastly, but most importantly, I thank the many authors and reviewers for our outstanding line-up.

I look forward to “seeing” you at the end of July. I wish you a restorative and productive summer!

Sincerely,

Dr. Michelle K. Marincel Payne

## Sessions, Panels and Meetings

**14418. Intercultural Competency Infused Teaching**  
Mon. Jul 26, 2021 1:15 – 2:45 PM (PDT)

**13586. EED-Environmental Engineering Division  
(Panel on collaborations with AEESP & AAEES)**  
Tue. Jul 27, 2021 9:45 – 11:15 AM (PDT)

**14419. Innovative Approaches for Teaching  
Environmental Engineering**  
Tue. Jul 27, 2021 11:30AM – 1:00 PM (PDT)

**14420. Teaching Environmental Engineering in the  
COVID Era**  
Tue. Jul 27, 2021 1:45 – 3:15 PM (PDT)

**T573.2021 Interdivisional Town Hall Meeting-  
Rethinking Sustainability Breakout Room**  
Tue. Jul 27, 2021 3:30 – 5:00 PM (PDT)

**13581. Environmental Engineering Division Business  
Meeting**  
Wed. Jul 28, 2021 8:00AM – 9:30 AM (PDT)

**13600. Panel: Advocacy and Allyship by Men for  
Women in Engineering-Related Fields at the College  
Level**  
Wed. Jul 28, 2021 1:45PM – 3:15 PM (PDT)

**14795. Environmental Issues and the Impacts of  
Intersectionality**  
Wed. Jul 28, 2021 3:30PM – 5:00 PM (PDT)

**13583. Environmental Engineering Division Social**  
Wed. Jul 28, 2021 7PM – 9 PM (PDT)

## 2020-2021 Environmental Engineering Division Officers

### Division Chair

Dr. Michelle K. Marincel Payne

Associate Professor  
Department of Civil and  
Environmental Engineering

Rose-Hulman Institute of  
Technology  
Terre Haute, IN



### Program Chair

Dr. Fethiye Ozis

Senior Lecturer  
Department of Civil and  
Environmental Engineering

Northern Arizona University  
Flagstaff, AZ



### Secretary

Dr. David Sanchez

Assistant Professor, Dept. of Civil  
and Environmental Engineering  
Assistant Director, Mascaro  
Center for Sustainable Innovation

University of Pittsburgh  
Pittsburgh, PA



### Treasurer

Dr. Shannon L. Isovitsch Parks

Assistant Professor  
Dept. of Civil Engineering  
University of Pittsburgh at  
Johnstown  
Johnstown, PA



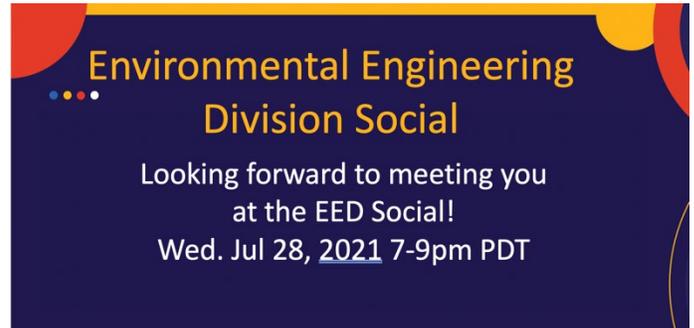
## **EED Business Meeting** **Wednesday July 28, 2021** **8:00AM – 9:30 AM (PDT)**

Members are strongly encouraged to attend to provide the Division with enriching feedback for improvements and input for the 2022 conference. A call-in option will be available at no cost to non-conference attendee members, which will be shared via our EED email list.

We will be voting for a new Treasurer and nominations are currently being accepted. Nominations (including self-nominations) for Treasurer can be submitted here [NOMINATION LINK](#) until Thursday July 22, 2021 or at the Business meeting. The ballot will be distributed to the EED conference attendees, and close on Wednesday July 28, 2021 by 11:59pm (PDT). The new treasurer for our division will be announced by the end of the conference.

Nominees will be encouraged to introduce themselves at the Business meeting and encouraged to mingle at the Division Social. Voting will close after the social and the results disseminated by the next day.

## **EED Social** **Wednesday July 28, 2021** **7:00-9:00 PM (PDT)**



This social event is currently open to all conference attendees and all division members, prospective members, families and friends. A call-in option may be available at no cost to non-conference attendee members. As soon as we hear back from ASEE, we will inform members about this potential option via our EED email list. The event provides a relaxed atmosphere to socialize and honor the Division Award recipients and the Outgoing Division Chair. The division honors the awardees with a plaque, honorarium and a free invitation for the 2021 dinner which we will have to postpone until 2022.

# DIVISION AWARDS

## 2021 Best Paper Award

### Assessment of Reflective Thinking in Graduate Engineering Students: Human and Machine Methods

Authors: Roman Taraban, Micah Iserman, Jessica Pittman, Nigel Yeo, Ryan Campbell, Jeong-Hee Kim, Danny D. Reible

*All Authors are from Texas Tech University*



**Five of the coauthors (from left to right) Ryan Campbell, Danny Reible, Roman Taraban, (seated) Jessica Pittman and Jeong Hee Kim**

Dr. Roman Taraban is Professor in the Department of Psychological Sciences at Texas Tech University. He received his Ph.D. in cognitive psychology from Carnegie Mellon University. His interests are in how undergraduate students learn, and especially, in critical thinking and how students draw meaningful connections in traditional college content materials.

Dr. Micah Iserman, Texas Tech University is interested in language use, mental representation, and social processes.

Ms. Jessica C Pittman is a third year graduate student in the Experimental Psychology doctoral program at Texas Tech University. Current interests are in the overlap of cognition and education with a direct focus on note taking.

Mr. Nigel Yeo is a senior student at Texas Tech University, pursuing a degree in psychology. He hopes to attend graduate school and become an occupational therapist in the future. His interests include travelling to new places and exploring the United States. His hobbies are playing tennis and piano.

Dr. Ryan C. Campbell completed his Ph.D. through the University of Washington's interdisciplinary Individual Ph.D. Program (see [bit.ly/uwiphd](http://bit.ly/uwiphd)), Ryan is now a Postdoctoral Research Associate at Texas Tech University. He currently facilitates an interdisciplinary project entitled "Developing Reflective Engineers through Artful Methods." His scholarly interests include both teaching and research in engineering

education, art in engineering, social justice in engineering, care ethics in engineering, humanitarian engineering, engineering ethics, and computer modeling of electric power and renewable energy systems.

Dr. Jeong-Hee Kim is Chairperson and Professor of Curriculum Studies and Teacher Education in the Department of Curriculum and Instruction at Texas Tech University. Kim is a curriculum theorist, teacher educator, and narrative inquiry methodologist. Her research centers on various epistemological underpinnings of curriculum studies, particularly engaging in hermeneutical excavation of the stories of students and teachers around the notion of Bildung, a human way of developing or cultivating one's capacity. She received the Faculty Outstanding Researcher Award in 2018 from Texas Tech University, and the Out-standing Publication Award from the American Education Research Association in 2017 for her book, *Understanding Narrative Inquiry*, published in 2016. She has published numerous articles in journals including *Journal of Curriculum Studies*, *International Journal of Qualitative Studies in Education*, and *Educational Philosophy and Theory*.

Dr. Danny D. Reible is the Donovan Maddox Distinguished Engineering Chair at Texas Tech University. He was previously the Bettie Margaret Smith Chair of Environmental Health Engineering in the Department of Civil, Architectural and Environmental Engineering and the Director of the Center for Research in Water Resources at the University of Texas in Austin. Dr. Reible holds a Ph.D. in Chemical Engineering from the California Institute of Technology, and is a Board Certified Environmental Engineer, a Professional Engineer (Louisiana), and was elected to the National Academy of Engineering in 2005 for the "development of widely used approaches for the management of contaminated sediments". His research is focused on the fate, transport, and management of contaminants in the environment and the sustainable management of water resources.

## 2021 Early Career Award

**While this honor was not awarded this year we encourage eligible faculty to submit for 2022!**

## 2021 Best Diversity Paper Award

### Who will Lead Us Out of Climate Crisis? Gender, Race, and Early Career Pathways in Environmental Engineering

Authors: Shannon Katherine Gilmartin  
*Stanford University*

Angela Harris  
*North Carolina State University*

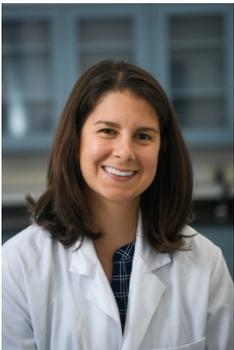
Christina Martin-Ebosele  
*Stanford University*

Sheri Sheppard  
*Stanford University*



Shannon K. Gilmartin, Ph.D., is a Senior Research Scholar at the Stanford VMware Women's Leadership Innovation Lab and Adjunct Professor in Mechanical Engineering at Stanford University. Her expertise is in education and workforce development in science and engineering fields. She has particular interest in access to and equity in engineering education and

practice, people's pathways into the engineering workforce, and people's advancement to senior leadership positions in engineering settings. She has long collaborated with many undergraduate students, graduate students, postdoctoral scholars, research scientists, faculty members, and industry professionals across a range of disciplines in large-scale studies of student experiences and workforce trends. Shannon's interests in the societal and cultural dimensions of environmental engineering and climate science (and what these dimensions mean for educational practice) began several years ago within and across many generative conversations with co-authors Angela Harris, Christina Martin-Ebosele, and Sheri Sheppard.



Angela Harris is an Assistant Professor in the Civil, Construction, and Environmental Engineering Department at North Carolina State University and member of the Global Water, Sanitation, and Hygiene (Global WaSH) faculty research cluster. Dr. Harris earned M.S. and Ph.D. degrees in Civil and Environmental Engineering from Stanford University and a B.S. in Chemical and Biomolecular Engineering from the Georgia Institute of Technology. Her research seeks to

characterize human exposure pathways of fecal contamination and to develop methods to interrupt pathogen transmission to protect human health. Harris is engaged in computational and laboratory investigations in addition to conducting field work domestically (particularly in North Carolina) and internationally (including Tanzania, Uganda, Kenya, Bangladesh, and Indonesia). Other interests include engineering education and wastewater-based epidemiology.



Christina Martin-Ebosele is a master's student in the Sustainability Science and Practice program at Stanford University, where she completed her bachelor's in Mechanical Engineering. As an engineer, she is passionate about research and technical work related to climate change. She has previous work experience as an engineer in

Motor Manufacturing at Tesla and a research assistant at Stanford University in the Soft Tissue Biomechanics lab. Christina is currently a Product Design Engineer at Apple, where she brings a sustainability perspective to product design.



Sheri D. Sheppard, Ph.D., is professor of Mechanical Engineering at Stanford University. Besides teaching both undergraduate and graduate design-related classes, her lab (Designing Education Lab, DEL) conducts research how people become engineers. From 1999-2008 she was the Senior Scholar at the Carnegie Foundation for the Advancement of Teaching principally responsible for the Preparations for the Professions Program (PPP) engineering study, the

results of which are contained in the report *Educating Engineers: Designing for the Future of the Field*. In addition, she served as Chair of Stanford's Faculty Senate in 2006-2007, and as Associate Vice Provost of Graduate Education from 2008-2013. Dr. Sheppard was co-principal investigator on a National Science Foundation (NSF) grant to form National Center for Engineering Pathways to Innovation (EPICENTER; 2011-2016), and to form the Center for the Advancement of Engineering Education (CAEE), along with faculty at the University of Washington, Colorado School of Mines, and Howard University (2003-2009).

## OFFICERS: July 2021- June 2022

**Outgoing Division Chair:** Dr. Michelle K. Marincel Payne  
Rose-Hulman Institute of Technology  
[marincel@rose-hulman.edu](mailto:marincel@rose-hulman.edu)

**Division Chair:** Dr. Fethiye Ozis  
Northern Arizona University  
[fethiye.ozis@nau.edu](mailto:fethiye.ozis@nau.edu)

**Program Chair:** Dr. David Sanchez  
University of Pittsburgh  
[david.sanchez@pitt.edu](mailto:david.sanchez@pitt.edu)

**Secretary:** Dr. Shannon L. Isovitsch Parks  
University of Pittsburgh at Johnstown  
[shannon.parks@pitt.edu](mailto:shannon.parks@pitt.edu)

**Treasurer:** *To be elected via online ballot, and announced at the business meeting. You may submit nominations (including self-nominations) here: [NOMINATION LINK](#) until Thursday July 22, 2021.*

## BEST FACULTY PAPER AWARD

This award recognizes the best paper submitted to the Division. The author must be a current member of ASEE and of the Environmental Engineering 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.

The prize for winning Best Faculty Paper Award is dinner for the winner(s) up to three authors, recognition at the Division dinner, and one plaque.

## EARLY CAREER AWARD

This award recognizes the best paper written by an early career EED member. The award decision is made by the EED Awards Committee formed by division officers and/or division directors and/or invited external judges, and the paper is judged based on its ability to positively impact environmental engineering education.

Eligibility Criteria: The applicant(s) will be within the first four years of academic experience as a non-tenure track or tenure-track faculty member, and un-tenured as of August 31, 2022. All full-time years of academic experience count towards the time constraint. The applicant must teach at a four-year University that offers at least one environmental engineering course. Collaboration with senior or tenured faculty members is encouraged as long as the eligible faculty member(s) hold(s) the intellectual merit for the educational research or activity. In addition, the eligible faculty member(s) should be the lead author(s) and submit the manuscript to the division. Single authored papers are also accepted.

Application Process: To apply, authors must add the following sentence to the last line of the abstract: "I(We), am(are) an untenured faculty member(s) within the first four years of total academic experience, lead author(s) of

this paper, and eligible for the Environmental Engineering Division Early Faculty Paper Award." In addition, potential candidates must contact the program chair, Dr. David Sanchez, [david.sanchez@pitt.edu](mailto:david.sanchez@pitt.edu), to confirm years of academic experience, EED membership, and for papers with multiple authors, the degree of intellectual merit in their paper.

The prize for winning the Early Career Award is dinner for the winner(s) up to three authors, recognition at the Division dinner, and one plaque.

## MERITORIOUS SERVICE AWARD

Members of the Environmental Engineering Division who, in the opinion of the reviewing officers, have performed activities or provided services to the Division benefiting the Division and deserving of special recognition are eligible for this award. For example, a member who provides sustained active contributions of major tasks over many years might be eligible for this award. The current Division Chair and Program Chair are ineligible to receive this award. Nominations should document these contributions. A call for nominations will be published in electronic and/or other publications for the Division.

**Nominations may be submitted to the Division Chair by letter or email, with a deadline of March 1<sup>st</sup> of the year in which the award is to be presented.**

## 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 EED member, and must present the paper at the Annual Conference. Faculty may be co-authors. The paper must focus on pedagogical issues. The Division will award up to three awards each year with the awardees receiving \$500 each, with a plaque.

# **ENVIRONMENTAL ENGINEERING DIVISION**

## **BUSINESS MEETING**

**Session: 12950**

**Wednesday, July 28, 2021**

**8:00-9:30 AM PDT**

## **ANNUAL SOCIAL AND AWARDS GATHERING**

**Session: 13583**

**Wednesday, July 28, 2021**

**7:00-9:00 PM PDT**