The ASEE Environmental Engineering Division Newsletter

Spring 2020

A Message from the Division Chair

Dear Colleagues,

This year's ASEE Annual Conference will be a remarkable one as we try hard to overcome the challenges presented by the COVID-19 Pandemic and enter into an exciting virtual environment to learn and share our educational and research findings. The theme of the conference is "At Home with Engineering Education". Yes, that's right, you can participate in any or all of the conference activities at the comfort of your home. Hope this presents a "relaxed" learning and sharing experience for all of us.

It is undoubtedly quite encouraging to note that our division's technical program is well packed with several informative presentations and panels. We will have six virtual sessions in which you will have opportunities to hear from our presenters and interact with them. Be sure to watch the pre-recorded presentation videos before attending the interactive "questions and answers" (Q & A) sessions. The presenters will also give a quick summary of their talks in a two-minute presentation during the Q & A session to facilitate further discussion.

Dr. Michelle Marincel Payne, Program Chair of our division, has done an outstanding job of finalizing the peer-review process, organizing the technical content and overseeing the logistics of presentation schedules and session arrangements. Follow the session themes and presentation titles as you prepare your personalized virtual conference schedule. We will also have the divisions mixer event, environmental engineering division's business and social meetings as usual. We hope to see you all actively participating in these events.

I have thoroughly enjoyed serving the division in different capacities over the past four years and will look forward to being an active member of our environmental engineering and science education family. It has been a great honor to work with the previous and current colleagues on the division's leadership and the members of our division. Without the support from these members, it would not have been possible to make this journey. My sincere appreciation and thanks to the current division's leadership, Dr. Michelle Marincel Payne, Dr. Fethiye Ozis, and Dr. David Sanchez for their dedication and excellent cooperation. Lastly but most importantly, I would like to acknowledge and appreciate all the authors and reviewers for their hard work and dedication to our profession.

Let us look forward to an exciting virtual ASEE conference and a bright engineering education future.

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2019-2020
Environmental Engineering Division Officers

Division Chair

Dr. Veera Gnaneswar Gude

Associate Professor
Department of Civil and Environmental Engineering

Mississippi State University
Mississippi State, MS

Program Chair

Dr. Michelle K. Marincel Payne

Assistant Professor
Department of Civil and Environmental Engineering

Rose-Hulman Institute of Technology
Terre Haute, IN

Secretary

Dr. Fethiye Ozis

Senior Lecturer
Department of Civil and Environmental Engineering

Northern Arizona University
Flagstaff, AZ

Treasurer

Dr. David Sanchez

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

University of Pittsburgh
Pittsburgh, PA

Sessions, Panels and Meetings

12571. Emphasizing Communication and the Humanities in Environmental Engineering

Mon. Jun 22, 2020 10:20 – 10:40 AM (EDT)

12866. Innovative Development for Various Faculty Lines *(Panel, Joint session with Faculty Development Division)*

Mon. Jun 22, 2020 1:00 – 1:30 PM (EDT)

12942. The Engineer of 2020: Realizing the Vision? *(Panel, Co-sponsored and hosted by the Engineering and Public Policy Division)*

Mon. Jun 22, 2020 1:00 – 1:30 PM (EDT)

12572. A Focus on Sustainability

Tue. Jun 23, 2020 10:40 – 11:00 AM (EDT)

11980. Best in 5 Min: Demonstrating Interactive Teaching Activities *(Joint session with Civil Engineering Division)*

Tue. Jun 23, 2020 2:30 – 3:30 PM (EDT)

12573. Inventive Opportunities for Research Exposure

Wed. Jun 24, 2020 10:20 – 10:40 AM (EDT)

12574. Innovative Approaches to Improving Student Learning

Thu. Jun 25, 2020 10:00 – 10:20 AM (EDT)

12950. Environmental Engineering Division Business Meeting

Thu. Jun 25, 2020 4:00 – 5:00 PM (EDT)

13025. Environmental Engineering Division Social

Thu. Jun 25, 2020 5:00 – 6:00 PM (EDT)

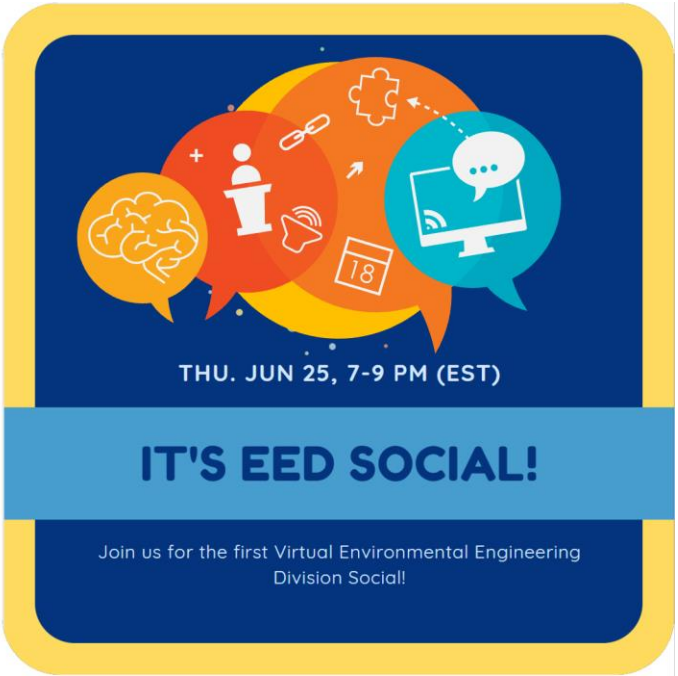
EED Business Meeting

Thursday June 25, 2020
4:00 – 5:00 PM (EDT)

Members are strongly encouraged to attend to provide the Division with enriching feedback for improvements and input for the 2021 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.
Thanks for all the volunteers to serve as a treasurer for our division. The ballot is now closed. The voting process by EED members will take place during the conference. The ballot will be distributed to the EED email list, and close on Thursday June 25, 2020 by noon (EDT).
The new treasurer for our division will be announced during the business meeting.

EED Social

Thursday June 25, 2020
5:00-6:00 PM (EDT)



This social event is currently open to all conference attendees and may be open to 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.

DIVISION AWARDS

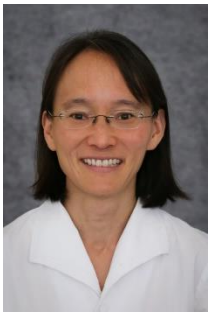
2020 Best Paper Award

Developing a Multi-Campus Model for REU Sites

Authors: Pamela McLeod
Stanford University

Junko Munakata Marr
Colorado School of Mines

Pamela McLeod is the Education & Outreach Director and Diversity & Inclusion Manager for the Engineering Research Center for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt) at Stanford University. Dr. McLeod earned M.S. and Ph.D. degrees in Civil & Environmental Engineering from Stanford and a B.S. in Environmental Engineering from Manhattan College. Her professional interests include engineering education, collaborative community development, science communication, and integrating inclusive practices into engineering research enterprises.



Junko Munakata Marr is a Professor and Associate Department Head in the Civil and Environmental Engineering Department at Colorado School of Mines. Dr. Munakata Marr earned M.S. and Ph.D. degrees in Civil Engineering from Stanford and her B.S. in Chemical Engineering from Caltech. Her research interests center on microorganisms in engineered environmental systems, including biological wastewater treatment and methanogenesis from unconventional sources. Other interests include sustainable community development and engineering education. She has served as a Fulbright Senior Scholar, Fellow of the Japan Society for the Promotion of Science, and as a Shultz Family Humanitarian Engineering Faculty Fellow.

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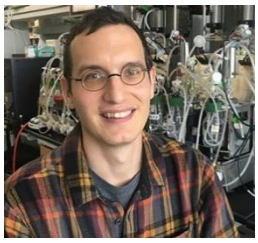
2020 Early Career Award

Overcoming Affective and Cognitive Chemistry Challenges in an Introductory Environmental Engineering Course Using a Flint Water Crisis Case Study

Authors: Matthew Scarborough
University of Vermont

Katherine (Trina) McMahon
University of Wisconsin-Madison

Early Career Awardee: Matthew Scarborough
University of Vermont



Matthew Scarborough is an assistant professor in the department of Civil and Environmental Engineering at the University of Vermont and director of the Environmental Microbiome Engineering Research Group. Matt earned his Ph.D. at the University of Wisconsin- Madison where he completed a certificate program in the integration of teaching, research, and learning (the Delta Program). As part of this program, Matt conducted an internship with Dr. Trina McMahon for her introductory environmental engineering course that is the subject of their ASEE paper for 2020. Matt continues to implement teaching-as-research practices in his courses related to biological processes engineering, resource recovery, and water and wastewater treatment.

Katherine (Trina) McMahon is a professor with joint appointments in the Departments of Civil and Environmental Engineering, and Bacteriology, at the University of Wisconsin Madison. She teaches courses in environmental engineering and environmental microbiology. Trina has been involved in the Delta Program, a founding node in the international Center for the Integration of Research, Teaching, and Learning (CIRTL) network, since 2003 when she arrived at UW. She co-hosted a popular online course on Evidence Based Teaching in STEM, created by CIRTL. She was the mentor for Dr. Scarborough's Delta internship which was the foundation for the work presented in this paper. Her research interests include microbial ecology of wastewater and freshwater systems, genomics, and general ecology.

2020 Best Diversity Paper Award

Environmental and Ecological Engineering in Context: A Foundational Graduate Course

Authors: Inez Hua
Purdue University

Loring Nies
Purdue University

Lindsey Payne
Purdue University

Dr. Hua has expertise in aquatic chemistry, environmental sustainability, water pollution control, and the environmental fate of organic contaminants. She has recently completed projects related to the photochemistry of emerging contaminants and water consumption in supply chains. Additional research areas include sustainable electronics and environmental sustainability in engineering education.

Dr. Nies' research interests include optimizing the future capacities of interdependent urban infrastructure systems and the molecular genetic characterization of the structure and function of microbial communities. Dr. Nies' research group also develops molecular genetic tools to assess the effects of anthropogenic chemicals on microbial communities.

Dr. Lindsey Payne is a Director in the Office of Engagement at Purdue University coordinating service-learning programs and initiatives. She has a courtesy appointment in Environmental and Ecological Engineering where she teaches the introductory seminar for the major and a service-learning course in which interdisciplinary teams of students collaboratively identify stormwater management problems, co-design solutions, maintain budgets, and evaluate impacts with community partners. Dr. Payne's research sits at the intersection of sustainability, teaching and learning, and engagement focusing on transdisciplinary decision-making frameworks in community-based design projects. She also specializes in the assessment of instructional effectiveness and student learning in active learning environments. She is the recipient of multiple teaching awards, and is the Chair of the Teaching Academy. She has a B.A in Biological Sciences from DePauw University and M.S. and Ph.D. degrees in Ecological Sciences and Engineering from Purdue University. She has also worked professionally in the non-profit and secondary education sectors, and currently serves on multiple community-based environmental boards.

OFFICERS: July 2020- June 2021

Outgoing Division Chair: Dr. Veera Gnaneswar Gude
Mississippi State University
gude@cee.msstate.edu

Division Chair: Dr. Michelle K. Marincel Payne
Rose-Hulman Institute Of Technology
marincel@rose-hulman.edu

Program Chair: Dr. Fethiye Ozis
Northern Arizona University
fethiye.ozis@nau.edu

Secretary: Dr. David Sanchez
University of Pittsburgh
david.sanchez@pitt.edu

Treasurer: *To be elected via online ballot, and announced at the business meeting.*

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, 2021. 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. Fethiye Ozis, fethiye.ozis@nau.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 1st 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
Thursday, June 25, 2020
4:00-5:00 PM EDT

ANNUAL SOCIAL AND AWARDS GATHERING
Session: 13025
Thursday, June 25, 2020
5:00-6:00 PM EDT