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ANNUAL HIGHLIGHTS 2022-2023

Since 2004, the Center for Research on Learning and Teaching in Engineering (CRLT-Engin) has promoted evidence-based practices in engineering that enable students and instructors from diverse backgrounds and social identities to learn and thrive. This year, CRLT-Engin expanded its services in collaboration with other Michigan Engineering units to be a part of the Teaching Engineering Equity Center, support faculty teaching grants, and the Engineering Education Innovation Days.

Diversity, Equity & Inclusion

CRLT-Engin has expanded its capacity to provide programming for instructors focusing on inclusive and equitable teaching strategies.

In collaboration with the office of the Associate Dean for Undergraduate Education (ADUE), the Center for Socially Engaged Design, and faculty from the



Engineering Education Research program, CRLT-Engin is part of a \$1.2 million NSF-funded Teaching Engineering Equity Center at

Michigan Engineering. CRLT-Engin developed Equity-Centered Engineering Teaching Circles for faculty interested in integrating diversity, equity, and inclusion (DEI) content in their engineering courses and creating equitable and inclusive classroom environments.



Option 1 Teaching Circle Faculty participants and facilitators • May 2023

Nearly 30 unique faculty, of all ranks, representing 11 departments and programs participated in these highly successful faculty learning communities.

In addition, CRLT-Engin continued its DEI programming with a Community of Practice on Equitable Assessment with over 20 participating faculty, and offered two new workshops: one on neurodiversity and another one on empathy in teaching and learning.

Promoting Engineering Education Innovation

Two new collaborative initiatives launched in 2023 serve to elevate the culture of teaching at Michigan Engineering. In collaboration with CAEN, Nexus, Mosaic and ADUE, [Enhancing Engineering Education \(E3\) grants](#) awarded \$200K.

Over 150 faculty and staff participated in the inaugural [Engineering Education Innovation \(EEI\) Days](#) event in May 2023. CRLT-Engin hosted a panel discussion on Teaching Engineering Equity and Inclusion, moderated by Tershia Pinder-Grover (CRLT-Engin) and with opening remarks from former Dean Alec Gallimore.



EEI Days - DEI Panelists • May 8, 2023

Panelists (shown above) included Drs. Kelly Hanson (Technical Communications), James Holly, Jr. (Mechanical Engineering/Engineering Education Research), Mark Moldwin (Climate and Space Sciences and Engineering), David Nordsletten (Biomedical Engineering), and Melissa Wrobel (Biomedical Engineering).



I think doing the demo at the end of the [teaching circle] was a good idea because it made us actually think about how we might apply some of the things that we've been talking about and left me with a product that I can actually use."

-Teaching Circle Participant

BY THE NUMBERS:

2,287

Event attendees (1,327 unique attendees, 91 total events)



3,040

Total participants (1,660 unique individuals)

\$200K

Amount given for educational grants



69%

of Instructors engaged in services



Michigan has a wealth of different kinds of resources and it is usually hard to know all of them if there has been no exposure to them. Having this exposure in the form of an orientation is extremely beneficial and is a great reference for the future.”

- Fall 2022 Student Instructor

2023 Winners

Richard and Eleanor Towner Prize for Outstanding Engineering GSIs

The Richard and Eleanor Towner Prize for Outstanding Engineering GSIs rewards creativity and innovation as an instructor. There were 69 total nominees, representing 14 of the 15 programs and departments in Michigan Engineering.



Patrick Doran

MECHENG 360



Timothy Keebler

CLIMATE 102



Mackenzie Warwick

NERS 491/492



Alexander Rees

NERS 491/492

Honorable mentions:

Cameron Kabacinski (ECE)
James Tan (CHE)
Jana Pavlasek (ROB)

Teaching & Learning Programs

CRLT-Engin offers a myriad of programs, including teaching workshops and orientations for new faculty, graduate student instructors (GSIs), and undergraduate instructional aides (IAs). In addition to 12 seminar series workshops, CRLT-Engin delivered 30 customized programs on topics such as engagement and transparent assignment design.

CRLT-Engin also hosted online and in-person orientations for 40 new faculty members, followed by monthly gathering sessions as part of the New Faculty Foundations (NFF) program. These gatherings build community and connect new engineering faculty with key resources. For the new GSI and IA orientation, participants engaged in online modules addressing topics such as equitable teaching and the science of learning, while also participating in a practice teaching session to deliver a lesson to a small group of their peers and a trained facilitator.



491

Unique participants in customized workshops

561

New instructors who participated in the teaching orientation

699

Total participants in diversity, equity, and inclusion (DEI) events

One-on-One Services

CRLT-Engin consultants, including the College of Engineering’s graduate student Engineering Teaching Consultants (ETCs), met one-on-one over 470 times with faculty, staff, graduate student instructors, and undergraduate instructional aides to discuss a variety of teaching topics. The instructional consultants also conducted 35 midterm student feedback (MSF) sessions, which is a process where consultants help instructors identify evidence-based teaching strategies to enhance their teaching based on students’ expressed needs and suggestions.



471

One-on-one services

1,380

Engineering students offered feedback this academic year

“You get incredibly valuable feedback, and the students really appreciate it, too. There’s literally no downside; only positives!”

- AERO Assistant Professor

...Promoting excellence and innovation in engineering education.