

THE ACTION & REACTION

Newsletter of the Mid-Michigan Section of the American Institute of Chemical Engineers


Volume 26 Issue 3 November 2023

Mid-Michigan Section of AIChE Scholarship Opportunity Engineering Exploration Scholarship



Who: Students in grades 9-11

What: Full scholarship covering tuition, room, and board plus a \$100 travel allotment to explore science and engineering through hands-on laboratory, classroom, and field experiences

Where:  Summer Youth Program at Michigan Technological University (MTU) in Houghton, MI

More information available at: <http://www.syp.mtu.edu/index.php>

When: One-week session in the summer of 2024

Deadline: Applications due by midnight on Monday, **November 27, 2023**

Contact: Apply online at <https://www.aiche.org/community/sites/local-sections/mid-michigan/engineering-exploration-scholarship>

Mid-Michigan
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Questions? Contact Ted Calverley at 989-948-7078 or tcalverley@charter.net

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ENGINEERING EXPLORATION SCHOLARSHIP

What

Full scholarship covering tuition, room, and board plus a \$100 travel allotment to explore science and engineering through hands-on laboratory, classroom, and field experiences

Where

Summer Youth Program at Michigan Technological University (MTU) in Houghton, MI



Deadline

November 27, 2023

For Students in grades 9-11

**Week long session in
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Apply Now

For More Information :

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Words from the Chair

BY JYO LYN HOR, CHAIR

The 2023 – 2024 executive committee kicked off our new year with the annual Fall Kick-Off event. Everything is off to a hectic and exciting start as we dredged the pits of our collective memories on how to organize an in-person meeting, after many virtual meetings. As I was setting up my computer, I was reminded of the hardware complications of needing the right dongle compatible to both the computer and the projector, which I have taken for granted. Fortunately, Miao Wang and Pat Heider came to the rescue with a backup computer and extra connector cables. There was food, beer, and merriment as everyone jumped in on the trivia. But best of all, it was great to see everyone catching up with one another and making new acquaintances.

To keep the momentum going, we are piloting a hybrid format for the monthly seminars. Pat Heider, our Young Professionals Chair, went above and beyond to upgrade our projector to help with in-room presentation. In addition, he helped with the audio and video streaming by bringing his microphone and camera for the setup. He also organized a dry run so that we can test the internet connection from our venue MI

Element Grains & Ground prior to the meeting. Many thanks to Pat for his generosity and helpfulness. I also wanted to thank Preetam Giri for organizing many interesting seminars, including the talk by LeRoy Smith on Midland's nuclear power project that never happened, an interesting bit of local history and cautionary tale on project mismanagement. Roque Gochez, Molly Eller, and Sesha Mahadevan also stepped up and volunteered during these events. We just held our second seminar by speaker Karl Jacob, a faculty member at the University of Michigan, who taught us about the how powders and particles worked so differently than fluids and the gap in our chemical engineering curriculum in particle technology. It was a fun event with Karl's enthusiasm and live demonstrations. We are planning to continue with the hybrid format meetings for the foreseeable future. Just as the temperatures are cooling, our executive committee is hard at work planning for outreach events, scholarships, and other activities, please be sure to look out for the updates!

Finally, I would like to extend our appreciation to MI Element Grains & Ground,

who has graciously allowed us to use their venue for our kickoff and seminar events, and catered very delicious baked goods. Please join us in our next meeting there!



Sincerely,

Jyo Lyn Hor

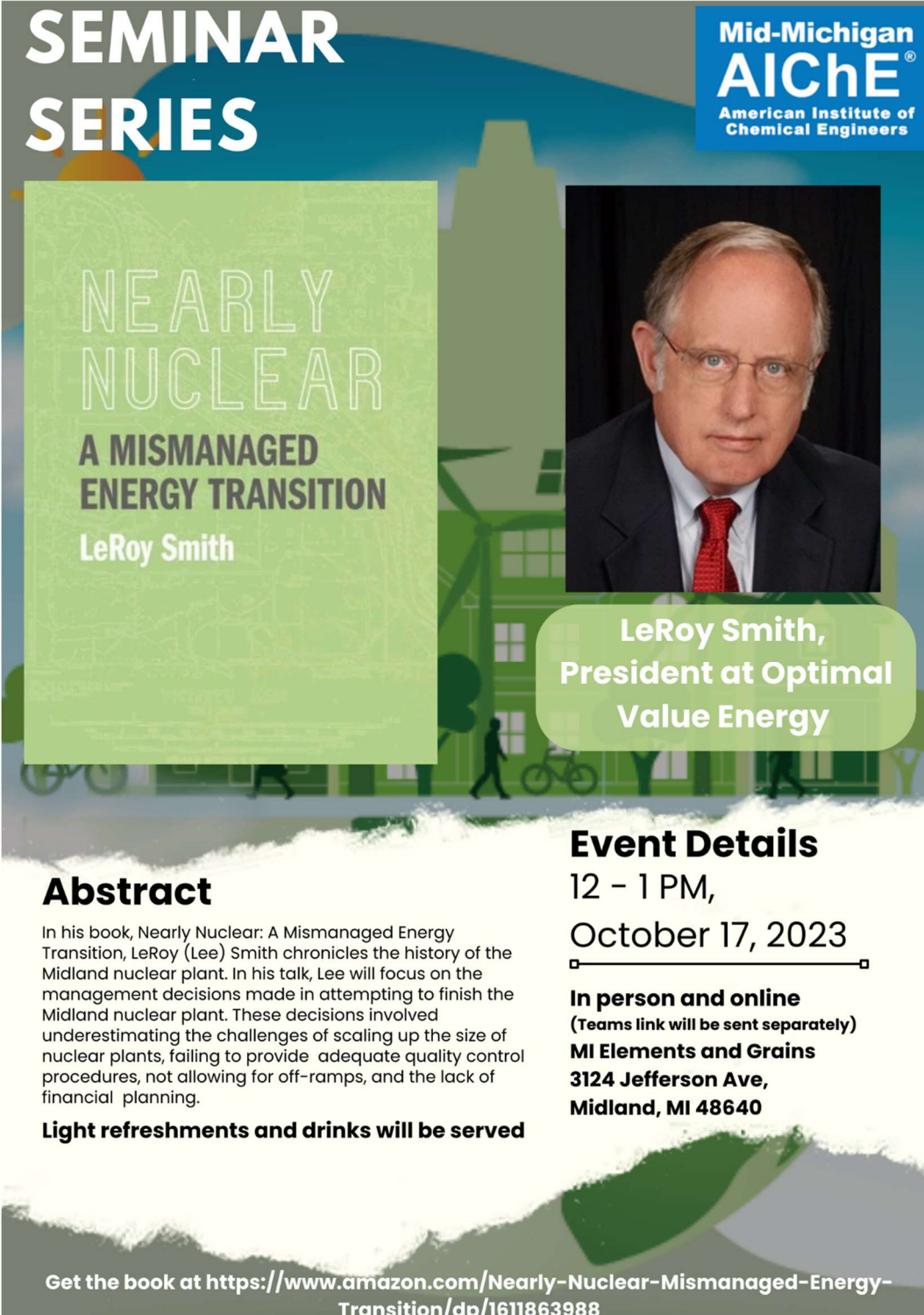
Kick off meeting

BY JYO LYN HOR, CHAIR

We ushered in the MMAIChE 2023-2024 programming year at MI Element Grains & Ground on the evening of September 12, keeping the tradition of a casual in-person meeting with a trivia icebreaker to challenge our members with fun facts and introduced our new executive committee. ~20 attendees enjoyed tasty baked goods (focaccia, Nutella croissants, and pretzels) and beverages while mingling.



October 2023 Seminar Series



SEMINAR SERIES

Mid-Michigan AIChE
American Institute of Chemical Engineers

NEARLY NUCLEAR
A MISMANAGED ENERGY TRANSITION
LeRoy Smith

LeRoy Smith,
President at Optimal Value Energy

Abstract

In his book, *Nearly Nuclear: A Mismatched Energy Transition*, LeRoy (Lee) Smith chronicles the history of the Midland nuclear plant. In his talk, Lee will focus on the management decisions made in attempting to finish the Midland nuclear plant. These decisions involved underestimating the challenges of scaling up the size of nuclear plants, failing to provide adequate quality control procedures, not allowing for off-ramps, and the lack of financial planning.

Light refreshments and drinks will be served

Event Details
12 – 1 PM,
October 17, 2023

In person and online
(Teams link will be sent separately)
MI Elements and Grains
3124 Jefferson Ave,
Midland, MI 48640

Get the book at <https://www.amazon.com/Nearly-Nuclear-Mismatched-Energy-Transition/dp/1611863988>



November 2023 Seminar Series

SEMINAR SERIES

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The Counterintuitive World of Particle Technology



Karl Jacob,
Solids Processing and Particle Technology expert.

M | CHEMICAL ENGINEERING
UNIVERSITY OF MICHIGAN

Abstract

Solids processing/particle technology is ubiquitous in industrial chemical processing. Entry-level engineers having an 80+% chance of working on a particle problem for their first project. Yet we chemical engineers are typically not trained to solve these types of problems and hence mistakes are made. In this seminar, we will explore some of the topics that chemical engineers should know about particle technology. In particular, we will look at some of the more counterintuitive topics (hopper flow/discharge, vacuum batch drying, size reduction, etc.) in solids processing that go against the gas/liquid paradigm that is our traditional chemical engineering training. The concepts will be underpinned with practical and fun demonstrations. By the end of the seminar, I sincerely hope that attendees will have some particle technology knowledge that can be applied to their jobs.

Light refreshments and drinks will be served

Event Details

12 – 1 PM,
November 8, 2023

In person and online
(Teams link will be sent separately)
MI Elements and Grains
3124 Jefferson Ave,
Midland, MI 48640

ACS
Chemistry for Life®

Day in the life of an industrial scientist

2nd edition

**Mid-Michigan
AIChE®**

Problem solving challenge, poster session, and networking!

Who:
Students pursuing a
STEM major

When:
Saturday January
27th, 2024
9 AM – 3 PM

Where:
Midland Center for
the Art
1801 W St Andrews Rd, Midland, MI 48640

Free Event!
Breakfast, lunch and snacks provided
Local transportation subsidized or provided
Registration required (use QR code)

Volunteers Needed!

Be a mentor at Day in the Life of an Industrial Scientist Network, collaborate on a problem-solving challenge, and discuss your career

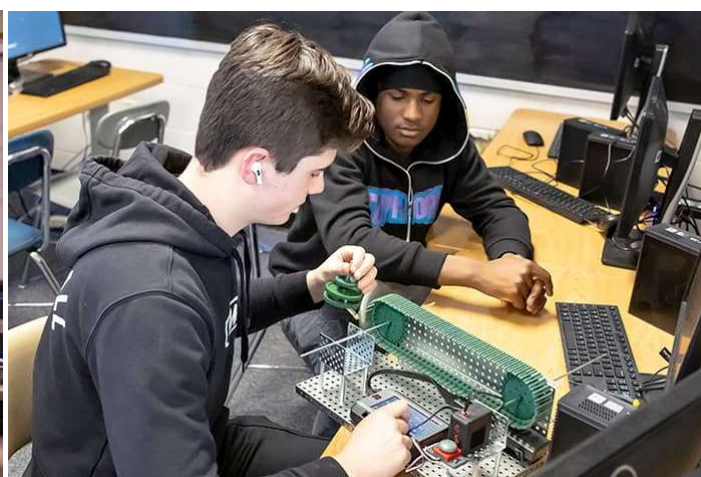
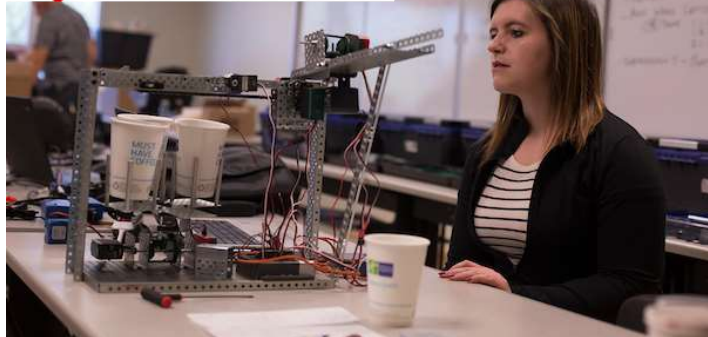
Saturday, January 27, 2024, 9 am – 3 pm

Midland Center for the Arts

Sign up or questions: Contact Kim Dinh at kdinh@dow.com

Call for Volunteers – Engineering Design and Development (EDD) course

BY CARLOS ESCOBAR, K-12 STEM CHAIR



Dear MMAICChE Community,

Are you looking for ways to engage with your community and support the development of future engineers? If so, there is a great volunteering opportunity to act as a judge, or as a future mentor, in an Engineering Showcase in which junior and senior students from Midland High School and Dow High School present the solution to a well-defined and open-ended problem. Please read the information below for more details about the course and the role of mentors and judges. If interested, you can **contact Corey Spurling (spurlingca@midlandps.org)**. Corey is a Project Lead the Way (PLTW) & Career Technical Education Teacher at both Midland and Dow High Schools.

Course Description

The Engineering Design and Development (EDD) course is the capstone course in the PLTW high school engineering program. It is an open-ended engineering research course in which students work in teams to design and develop an original solution to a well-defined and justified open-ended problem by applying an engineering design process.

Students will perform research to select, define, and justify a problem. After carefully defining the design requirements and creating multiple solution approaches, teams of students select an approach, create, and test their solution prototype. Student teams will present and defend their original solution to an outside panel.

While progressing through the engineering design process, students will work closely with experts and will continually hone their organizational, communication and interpersonal skills, their creative and problem solving abilities, and their understanding of the design process.

Students work in pairs to groups of four, depending on the scale of the problem they have selected. Each group works with two mentors throughout the course, one professional engineer and another that is an expert within scope of their problem. Over the course of the year, each group develops their own solution and prototype. At the end of April or early May we host an Engineering Showcase where students present their solutions to panels of Engineers. Where we need volunteers is for mentors and panel members "judges". This year we have been able to secure enough mentors, however we need 5-10 per year and this has proven challenging in the past. For our Showcase, we need 10-15 Engineers to act as panel members "judges". Below is a brief description of each role.

Mentors - Meet with students in person or virtually at minimum once per month- and have email correspondence as needed. Meetings tend to be 30-45 minutes in length. Students are to provide mentors with all materials and agendas prior to each meeting. The purpose of the mentor is to guide/consult students and not do the work for them.

Judges - Attend the Engineering Showcase at H.H. Dow High School in Midland, MI to serve as a panel member. The showcase has typically been held from 5-7:30pm in late April or early May, depending on AP and IB testing dates (most of our students take these assessments). At the showcase they would attend a judges meeting, interact with groups in a trade show setting, and judge students' formal presentation

MMAIChE 2023-2024 Executive Committee



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Chair-elect
Roque Gochez
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Past Chair
Miao Wang
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The Mid-Michigan Section of AIChE gratefully acknowledges the support provided by the following sponsors.



Donating to Support a Future Engineer through Mid-Michigan AIChE is Easy!



The Mid-Michigan Section of AIChE is involved in STEM educational outreach. We provide classroom demonstrations and support aspiring engineers through scholarships for summer camps and chemical engineering degrees. Your donation will be used to help Mid-Michigan AIChE sustain the scholarship fund that sends high school students to the Michigan Technological University Summer Youth Program or to an accredited university or college for a degree in chemical engineering.

You can choose to donate using a PayPal account or with a Debit or Credit card.

The PayPal link is:

https://www.paypal.com/donate/?cmd=_donations&business=eestangland%40character.net&item_name=Scholarships+donations+to+Mid-Michigan+AIChE¤cy_code=USD

OR scan the QR Code on your smartphone – it takes seconds!



Donations are tax-deductible and our secretary can provide you with a receipt.
We sincerely thank you for financially supporting aspiring chemical engineers.

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P.O. Box 2496, Midland MI 48641-2496, U.S.A.

www.aiche.org/community/sites/local-sections/mid-michigan

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