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2025

Waste re-engineered



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LEADERSHIP VIEWS

*by Rodney Wilson, PE, President,
Ohio Society of Professional Engineers*



**NSPE-Ohio membership:
A gift of growth,
connection & opportunity**

As president of the Ohio Society of Professional Engineers (NSPE-Ohio), one of my key goals was to focus on growing our membership. In this column, I'll discuss the challenge of recruitment, highlight the benefits of membership, and explain why NSPE-Ohio's growth matters for you, your peers, the profession, and society.

The Recruitment Challenge

One goal of my presidency was simple: let's get serious about growing our membership. After careful consideration, I felt the best approach was to challenge each NSPE-Ohio member to recruit one new member over the next 12 months.

You may ask, "Why should I bother?" Recruiting a new member not only expands your professional network but also helps develop leadership skills and strengthens the organization. By bringing in new members, you're helping build a sustainable future for the profession.

What's more powerful is that when you invite a peer to join NSPE-Ohio, you're helping them connect with like-minded individuals who share your passion for engineering and progress. You're inviting them to join a legacy of excellence that shapes the profession's future. NSPE-Ohio members inspire others, make an impact, and advance the engineering field.

If you're thinking, "I'm not great at recruiting," you're not alone. Most engineers focus on developing technical skills in school, while leadership and recruiting skills often come later, typically in management roles.

The good news is you can sharpen your leadership skills by having a simple and meaningful conversation with an engineering peer about NSPE-Ohio membership. Simply share how you've benefited and how they will, too. It's not just about signing someone up—it's about sharing the value. Thankfully, the benefits of NSPE-Ohio membership are clear, relevant, and easy to communicate.

Practical Benefits of NSPE & NSPE-Ohio Membership

There are many practical benefits to becoming a member of the National Society of Professional Engineers (NSPE) and NSPE-Ohio. Here are a few highlights you can share with your peers when inviting them to join:

- **Continuing Education:** NSPE and NSPE-Ohio offer timely CPD (continuing professional development) webinars and conferences for professional engineers. Through NSPE-Ohio alone, more than 40 CPD hours are offered annually, with a 30 percent discount for members, and the Ohio programs are carefully screened to ensure compliance with the state's CPD law.
- **PE Magazine and OhioENGINEER magazine:** These two key publications are packed with timely and relevant news for professional engineers. Through a wide range of engineering articles—cutting-edge technical topics, ethics case studies, and more—these publications help PEs stay current.

See "NSPE-Ohio membership," page 2

On the cover:

The rotary kiln at the Waste to Energy (WtE) facility in Abu Dhabi, United Arab Emirates.

Our feature article explores how Ohio is tackling critical environmental and energy challenges through innovative waste-to-energy technology, reducing landfill waste while generating sustainable power and boosting local economies.

See feature, "Waste re-engineered," page 6.



- **Online Newsletters:** NSPE's virtual newsletters, *Daily Designs* and *NSPE Update*, keep members informed on the latest national engineering news. Meanwhile, NSPE-Ohio keeps members informed through three key state-level e-newsletters: *Administrative Update*, *Regulatory Update*, and *Legislative Update*.
- **Job Listings:** Through both NSPE and NSPE-Ohio, members have access to engineering job openings for career advancement.
- **Exam Preparation:** NSPE offers important resources for engineers preparing for the FE or PE exams.
- **Developing Local Connections at the Chapter Level:** NSPE-Ohio has 12 local chapters across the state. Through a local chapter, members network, discuss timely engineering interests and concerns, socialize and, in some chapters, earn CPD. Chapter connections can also help members in the job hunt.

These practical benefits make membership incredibly valuable to practicing engineers in Ohio and beyond.

Professional Benefits: Building Your Career & Community

While the practical benefits are significant, the professional advantages of membership are just as important. Let's dive into some of the key professional benefits:

- **Influencing Public Policy:** As an NSPE-Ohio member, you have the opportunity to share your technical expertise with policymakers, helping them make decisions that impact the public health, safety, and welfare. By sharing their knowledge and insights, members play a crucial role in ensuring that engineering solutions are integrated into policies that benefit society as a whole. This involvement not only elevates the profession but also helps protect and improve the communities we serve.
- **Volunteering/Service:** The Engineers Foundation of Ohio (EFO), NSPE-Ohio's sister organization, is a nonprofit dedicated to supporting engineering education from primary school to college and beyond. I highly recommend NSPE-Ohio members get involved with EFO; it's a rewarding experience.
- **Increased Professional Credibility:** With 147 years of history, NSPE-Ohio has built a reputation based on trust, integrity, dependability, and a commitment to excellence. NSPE-Ohio membership signals to employers and

colleagues that a member embodies these qualities—highly valued in the engineering profession—contributing to career advancement and personal growth.

- **Networking, Community Access, Knowledge Sharing & Career Advancement:** Membership in NSPE-Ohio provides access to a network of like-minded professionals and numerous opportunities to connect with engineers locally, statewide, and nationally. Through meetings, members can seek advice, share experiences, and build relationships. Engaging with this community fosters knowledge sharing and encourages personal growth. As members develop new skills, improve communication, and gain diverse perspectives, they will be better positioned for career advancement and increased job satisfaction.
- **Mentorship Opportunities:** NSPE-Ohio members have access to mentorship opportunities with experienced engineers. This guidance will help members develop leadership skills, foster professional growth, and contribute to a positive, supportive environment.
- **Boosted Confidence & a Sense of Belonging:** Being part of NSPE-Ohio helps members feel connected to a professional community, boosting their confidence and encouraging contributions. This sense of belonging strengthens members' ties to the profession and motivates them to engage with others.

Key Takeaways

To recap, emphasize both the practical and professional benefits of NSPE-Ohio membership when speaking with your engineering peers. **And don't forget:** Encouraging membership isn't just about professional perks—it's about instilling in your peers **a sense of purpose**—inspiring them to engage in work that benefits the profession and the public.

By inviting your peers to join NSPE-Ohio, you're helping them become part of a network that values excellence, innovation, and progress. You're introducing them to a legacy that is shaping the future of engineering at the state and national levels. Most importantly, you're giving them the opportunity to contribute to something bigger than themselves.

Through your efforts, you're not just growing the organization—you're strengthening the profession.



Call to Action

If you haven't yet, I encourage you to consider the benefits of membership and help us grow this important professional community by recruiting a new member today.

It has been my pleasure to serve as president of NSPE-Ohio, and I strongly believe that understanding benefits of membership will help make recruitment easier and more effective.

Together, we can build a stronger and more connected professional community.

NEWS

Ohio Turnpike invests \$319M in 2025 infrastructure



The Ohio Turnpike Commission has allocated \$319 million for capital improvement projects in 2025, with nearly \$229 million designated for roadway and bridge work. This includes resurfacing 170 lane miles, pavement reconstruction at a toll plaza, and various bridge replacements and repairs across multiple counties.

In Fulton County, two resurfacing projects will maintain traffic flow with single lane closures at night. Lucas and Wood counties will see extensive resurfacing from milepost 59.5 to 74 while keeping two lanes open in each direction. Sandusky County will undergo resurfacing, five bridge deck replacements, and a bridge removal. Erie County's projects include resurfacing, along with two bridge replacements that require detours.

Lorain County will see seven bridge redecking projects, some requiring road closures and detours. In Cuyahoga County, pavement replacement and three bridge projects will be completed while maintaining traffic. Three Portage County bridges will be redecked, one will be replaced, and one will have a deck overlay. Additional projects in Summit, Trumbull, and Mahoning counties will improve infrastructure while minimizing disruptions.

NSPE-Ohio & EFO announce slates for June 14 elections at Annual Meetings at Embassy Suites Columbus Dublin



Dennis Irwin, PhD, PE, FNSPE, the Ohio Society of Professional Engineers (NSPE-Ohio) Nominating Committee chair, and Tina Sutermeister, PE, MBA, FNSPE, the Engineers Foundation of Ohio (EFO) Nominating Committee chair, have announced the following slates of officers and board members as approved by their respective boards for fiscal year 2025-2026.

The NSPE-Ohio Annual Member Meeting, the EFO Annual Member Meeting, and the joint NSPE-Ohio/EFO Installation Ceremony will all take place

in person on Saturday, June 14, 2025, at the **Embassy Suites Columbus Dublin** (5100 Upper Metro Place, Dublin, OH 43017) as part of the All-Ohio Engineering Conference.

Elections for the NSPE-Ohio positions shall be held at the NSPE-Ohio Annual Meeting on Saturday, June 14, 2025, at 1:30 p.m. All NSPE-Ohio members are invited. No registration fee is required of members to attend the NSPE-Ohio Annual Meeting.

Elections for the EFO positions shall be held at the EFO Annual Meeting on

Saturday, June 14, 2025, at 2:30 p.m. All EFO members are invited. No registration fee is required of members to attend the EFO Annual Meeting.

The NSPE-Ohio/EFO joint Installation Ceremony will be held on Saturday, June 14, 2025, at 4:00 p.m. Guests are welcome.

For more information about the All-Ohio Engineering Conference, including virtual CPD hours (June 12-13) and in-person activities (June 14), please refer to the registration materials on pages 4-5 or online at www.OhioEngineer.com.

NSPE-Ohio Board of Directors Slate for 2025-2026

<u>Executive Committee</u>	<u>Position</u>
Kevin Houser, MSME, PE.....	President
Richard Springman, MSME, PE.....	President-Elect
Rodney Wilson, PE.....	Past President
Tony Grgas, Jr., PE.....	Treasurer
Travis Rhoades, PE.....	VP of Legislative & Government Affairs
Joe Cherry, PE, FNSPE.....	VP of Education

<u>Voting Director</u>	
Vacant.....	Political Action Committee Chair
Dave Dexter, PE, FASPE, FNSPE.....	Constitution & Bylaws Chair
Fred Tito, PE, FNSPE.....	Investment Committee Chair
Vacant.....	Young Engineer Representative

<u>Chapter Directors</u>	
Jared Alexander, EI.....	Akron District Chapter
Dennis Irwin, PhD, PE, FNSPE.....	Buckeye Chapter
Jeff Kennedy, PE.....	Canton Regional Chapter
Winn Holcombe, PE.....	Dayton Chapter
Mehrdad Rowhani, PE.....	Franklin County Chapter
Terry McClain, PE.....	Lorain Chapter
Joe Warino, PE, PS, FNSPE.....	Mahoning Valley Chapter
Robert Seaman, PE.....	Maumee Valley Chapter
Chett Siefiring, PE, FNSPE.....	Northeast Chapter
Tony Grgas, Jr., PE.....	Southwest Ohio Chapter
Joe Cherry, PE, FNSPE.....	Toledo Regional Chapter
Don Quicksall, PE.....	Tuscarawas Valley Chapter

<u>Nonvoting Directors</u>	
Vacant.....	Student Council President

EFO Board of Trustees Slate for 2025-2026

<u>Executive Committee</u>	<u>Position</u>
Joe Cherry, PE, FNSPE.....	President
Randall Reeder, MS Ag, PE.....	President-Elect
Scott Dilling, MSME, PE.....	Past President
Dennis Irwin, PhD, PE, FNSPE.....	Treasurer
Kevin Houser, MSME, PE.....	NSPE-Ohio President

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Jared Alexander, EI.....	Akron District Chapter
Dennis Irwin, PhD, PE, FNSPE.....	Buckeye Chapter
Jeff Kennedy, PE.....	Canton Regional Chapter
Winn Holcombe, PE.....	Dayton Chapter
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Joe Warino, PE, PS, FNSPE.....	Mahoning Valley Chapter
Robert Seaman, PE.....	Maumee Valley Chapter
Chett Siefiring, PE, FNSPE.....	Northeast Chapter
Tony Grgas, Jr., PE.....	Southwest Ohio Chapter
Joe Cherry, PE, FNSPE.....	Toledo Regional Chapter
Don Quicksall, PE.....	Tuscarawas Valley Chapter

2025 ALL-OHIO ENGINEERING CONFERENCE

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June 12-13 | Virtual CPD Program

June 14 | Annual Meetings & Events, Dublin, OH

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... to the All-Ohio Engineering Conference, June 12-14. Earn 12 virtual CPD hours on Thursday and Friday, and enjoy in-person meetings, meals and activities on Saturday.

**12 CPD hours
including state-
mandated ethics
education***

DAY 1

THURSDAY, JUNE 12 – VIRTUAL CPD

Challenging Regulations: How Overturning the Chevron Decision Shifted the Balance of Power (1.0 CPD Hour)	Ethics Seminar	8:30 – 9:30 a.m.
<i>by Rebecca Bowman, Esq., PE, DFE (NAFE #1153)</i>		
Forensic Analysis of a CPVC Water Line Failure (1.0 CPD Hour)		9:45 – 10:45 a.m.
<i>by Edward Fronapfel, MSCE, PE, F.ASCE, F.NAFE, CEO, SBSA, LLC/Charles Taylor Engineering Technical Services</i>		
Hydrogen at Scale (1.0 CPD Hour)		11:00 a.m. – 12:00 p.m.
<i>by John Weidner, PhD, Dean, College of Engineering & Applied Science, University of Cincinnati</i>		
Artemis: The Role of Ohio in Our Return to the Moon (1.0 CPD Hour)		12:30 – 1:30 p.m.
<i>by John Sankovic, PhD, MBA, PE, Professor, Kent State University</i>		
Major Updates to the 2024 Ohio Energy Code (1.0 CPD Hour)		1:45 – 2:45 p.m.
<i>by Ned Heminger, PE, LEED AP, Executive Vice President, HAWA, Inc.</i>		
Industry 4.0: Technologies, Use Cases and Benefits (1.0 CPD Hour)		3:00 – 4:00 p.m.
<i>by Nathaniel Kay, PE, TUV Functional Safety Engineer, Systems Engineer, McNaughton-McKay Electric Company</i>		

DAY 2

FRIDAY, JUNE 13 – VIRTUAL CPD

Navigating Complexities in Engineering Ethics & Standards (1.0 CPD Hour)	Ethics Seminar	8:30 – 9:30 a.m.
<i>by John Greenhalge, MBA, Executive Director, State Board of Registration for Professional Engineers & Surveyors</i>		
Assessing Risk of Structure Damage Over Abandoned Coal Mines (1.0 CPD Hour)		9:45 – 10:45 a.m.
<i>by Abdolreza Osouli, PhD, PE, Executive Director, Marino Engineering Associates</i>		
Micropiles (1.0 CPD Hour)		11:00 a.m. – 12:00 p.m.
<i>by Sebastian Lobo-Guerrero, PhD, PE, DGE, Geotechnical Project Manager/ Laboratory Manager, AGES Inc.</i>		
Traffic Control Devices: Work Zones (1.0 CPD Hour)		12:30 – 1:30 p.m.
<i>by Deb McAvoy, PE, PTOE, Associate Professor, Ohio University</i>		
Geophysical Mapping of Buried Features (1.0 CPD Hour)		1:45 – 2:45 p.m.
<i>by Kyle Shalek, PhD, Regional Manager - Geophysical Services, Terracon Consultants, Inc.</i>		
Working Platform Designs on Saturated Subgrades (1.0 CPD Hour)		3:00 – 4:00 p.m.
<i>by James Elsey, PE, Area Engineer, CMC InQuik Tensar</i>		

DAY 3

SATURDAY, JUNE 14 – EMBASSY SUITES BY HILTON COLUMBUS DUBLIN

Awards Luncheon	11:30 a.m. – 1:00 p.m.
Ohio Society of Professional Engineers (NSPE-Ohio) Annual Meeting	1:30 – 2:30 p.m.
Engineers Foundation of Ohio (EFO) Annual Meeting	2:30 – 3:30 p.m.
Joint NSPE-Ohio/EFO Installation Ceremony	4:00 – 5:00 p.m.
NSPE-Ohio Year-End Dinner Celebration	6:00 p.m.

2025 ALL-OHIO ENGINEERING CONFERENCE

REGISTRATION FORM

Name _____

NSPE-Ohio/NSPE Member? ___ No ___ Yes, Member # _____

Title _____

Company _____

Address _____

City _____ State _____ ZIP _____

E-Mail (required) _____

DayPh # _____ Mobile # _____

Emerg. Contact _____ Ph # _____

Registration Fees	NSPE-Ohio/NSPE Member 30% discount	Nonmember
Thursday & Friday CPD	<input type="checkbox"/> \$199	<input type="checkbox"/> \$286
Thursday-Only CPD	<input type="checkbox"/> \$114	<input type="checkbox"/> \$164
Friday-Only CPD	<input type="checkbox"/> \$105	<input type="checkbox"/> \$151
Saturday Annual Meetings	<input type="checkbox"/> No Cost	
Saturday Awards Luncheon	<input type="checkbox"/> \$35	<input type="checkbox"/> \$50
Dinner @ MTM Tavern Dublin <small>(Order off menu & pay on your own)</small>	<input type="checkbox"/> RSVP	<input type="checkbox"/> RSVP
	Subtotal \$ _____	
	<i>If postmarked after Fri., June 6, add 20%</i> \$ _____	
	Total \$ _____	

Same CPD pricing since 2020!

Dinner RSVP required by June 6

Payment Options

Check (payable to Ohio Society of Professional Engineers)

Or VISA MasterCard AMEX Exp. Date: ___/___

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Registration Information

Three Easy Ways to Register

1. Register online at OhioEngineer.com.
2. Return the registration with your payment.
Ohio Society of Professional Engineers
400 South Fifth Street, Suite 300
Columbus, Ohio 43215-5430
3. Call 1-800-654-9481 (Ohio toll-free) or 614-223-1144.

Registration for all paid events requires advance payment. The NSPE-Ohio & EFO Annual Meetings are free to their respective members.

How You Will Benefit

The All-Ohio Engineering Conference is worth up to 12 CPD hours.

State Employees – Get Your Reimbursement!

State of Ohio exempt employees are eligible for reimbursement on conference, seminar and training events through the Employee Development Fund. Log into your OAKS account to apply for reimbursement. For details, please e-mail edfunds@das.ohio.gov.

Cancellation Policy & Substitutions

Registrants may withdraw from the program with full refund less a \$75 processing fee provided NSPE-Ohio is notified in writing (ospe@ohioengineer.com or via U.S. mail) by the registration deadline. After that time, registrants are responsible for the full registration fee. Substitutions of attendees may be made by the registration deadline, although nonmember differential rates will apply if a nonmember replaces an NSPE-Ohio member.

Continuing Professional Development Hours

NSPE-Ohio programs are designed to meet the requirements for Ohio's continuing professional development (CPD) law and State Board of Registration for Professional Engineers and Surveyors (State Board of Registration) rules. NSPE-Ohio programs are also designed to comply with the law in KY, NC and WV. The program also meets CPD requirements in many additional states. Be sure to consult those states' licensing authorities. For Ohio licensees, the State Board of Registration determines the acceptance of individual courses for CPD credit. The State Board of Registration does not preapprove any courses or course providers. Professionals should only claim credit commensurate with the extent of their participation in the program. In compliance with the State Board of Registration's rules, we must track participant attendance for the virtual CPD program. Be sure to respond to the attendance verification questions so your attendance may be verified in case you are audited by the State. CPD Certificates of Attendance will be emailed after the program.

Seminar Handouts

The handouts for the CPD hours will be available to you online.

Sponsorship Opportunities Are Available

For information, including details on complimentary registration benefits, download NSPE-Ohio's 2025 Sponsorship Kit at www.OhioEngineer.com.

Contributions, Gifts, Dues & Fees

Contributions, gifts, dues and fees to the Ohio Society of Professional Engineers are not tax deductible as charitable contributions. However, they may be tax deductible as ordinary and necessary business expenses. Please consult your tax advisor.

Schedule of Events

Schedule and faculty are subject to change without notice.

By registering for this program you acknowledge that your photographic image may be taken for publication purposes.

NSPE-Ohio reserves the right to limit the number of registrations.

Your satisfaction is 100% guaranteed!



Waste re-engineered

Current crisis & cause for concern

One of the most basic and fundamental realities of our modern civilization is our exponentially growing reliance on electrical power. Virtually every aspect of our lives requires power, which is now a normative expectation. We press a button, and power is there, in an instant. Unfortunately, the older grid systems are now proving to be insufficient to handle the voracious power requirements of our modern lifestyles, and our never-ending technological advancements.

Congruent with the need for a reliable, ever-increasing supply of power, is the societal shift to massive levels of consumerism. This comes with exponential increases in packaging, and non-consumable waste. With the growth of the global population, waste has become one of the most prolific and horrendous problems to be dealt with today. The state of Ohio alone produces more than 30 million tons of municipal solid waste (MSW) annually. This waste is creating massive, and possibly irreversible environmental concerns, under the current "landfill" model. This comes with growing health issues that are a direct result of the ongoing pollution of our land, air, and water.

Consider the fact that the normal resolution for dealing with MSW in the USA continues to be the dumping of MSW into landfills, which in many places, are now at, or close to capacity. This comes with significant environmental impacts, including soil leaching, and the emission of massive amounts of methane gas (CH₄) into the atmosphere. The Environmental Protection Agency (EPA) estimates that landfills are the third largest source of human-caused methane emissions in the USA, emitting as much greenhouse gas as twenty-three million gasoline cars driven for a year. Studies through ScienceDirect (Themelis and Ulloa, 2006), concluded that one ton of typical MSW will produce approximately 0.12 tons of CH₄, within the first year of landfilling. Of even further concern, is that over time, the global warming potential (GWP) of CH₄ is much greater than that of carbon dioxide (CO₂). The

Intergovernmental Panel on Climate Change has determined that the GWP of CH₄ creates an equivalency of approximately 84 times that of CO₂, stated as CO₂ equivalents, when calculated over the first twenty years of landfilled MSW.

In short, there needs to be viable solutions created and implemented to move our societies, both locally and globally, towards an immediate solution that addresses these two immense problem areas related to the management and storage of waste, and the generation of reliable power.

A proven solution is attainable

In the quest for sustainable waste management, various technologies have emerged to treat and eliminate waste while minimizing environmental impact. Among these is pyrolysis, a thermal decomposition process conducted in the absence of oxygen, which breaks down organic waste into valuable byproducts such as syngas, bio-fuel, and char. Pyrolysis solutions are a major step towards healthier communities, and the true implementation of a circular economy.



An engineer at Barcelona waste-to-energy firm Tecam reviews a drawing.

Another advanced approach of waste treatment is Waste-to-Energy (WtE), often referred to as controlled pyrolysis, with energy recovery. It stands out as a method that processes waste materials at high temperatures, with controlled oxygen and water injections, to generate electricity or heat.

While both technologies offer viable waste treatment solutions, their applications differ significantly, making it crucial to assess their roles in modern waste treatment strategies, and a reduced

dependency on landfill solutions.

The need to remove and reduce waste hasn't always delivered a healthy or acceptable solution over the past 100 years. This includes the historical use of incineration methodologies. However, in our modern societies, given our increasing concerns for the environmental impacts of our actions, incineration without the corresponding flue gas treatment is no longer a satisfactory solution. After the incineration process, there should always be a flue gas treatment for emissions abatement, for a safe, healthy output.

Fortunately, developments in WtE technologies provides the much-needed solutions to both critical issues of waste treatment and power generation, where the elimination of the waste is the catalyst for the generation of electrical energy.

The major technological advances that have been achieved are a direct result of the design and engineering efforts of European company Tecam, located in Barcelona, Spain, which have put WtE far out front. Although there are other companies that have developed some of these types of WtE facilities, the sophisticated engineering and composition of the Tecam WtE solutions represent an efficient and effective use of land and equipment, to attain the desired results.

In 2020, in Europe alone, where WtE is an accepted and standard solution, there were 504 WtE facilities in operation, where those facilities eliminated 101 million tons of MSW (Confederation of European Waste-to-Energy-Plants), thereby producing significant amounts of electrical power that could be distributed into the communities.

Working with Tecam, W2E Americas, Inc. (W2EA) is a USA-based company that is on the forefront of bringing these cutting-edge, EPA-compliant, WtE solutions to the USA. Their first facilities are scheduled to begin construction in Ohio, along with several other states, in the coming months. In Ohio, W2EA has sourced local Ohio contractors and manufacturers, so that these mega-proj-

See "Our Energy Frontier," page 7

ects can be clearly described as "made in America," and "built for America," and even more specifically, "made in Ohio," and "built for Ohio."



Dan Shepherdson (left) and Tom Ondrejicka (right) visit Bernat Sala Maestro at the Tecam facility in Barcelona, Spain.

W2EA President and CEO Tom Ondrejicka commented, "To have the opportunity to work with so many highly skilled people, companies, and government officials in Ohio has been an amazing journey for W2EA. With facilities anticipated in several potential locations in Ohio, these operations will be the first to take the great strides towards a "zero-waste-to-landfill" strategy, while providing the electricity needed for economic development across Ohio." Looking down the road thirty years, Ondrejicka added, "WtE will be a major supplier of electricity in the USA, as it has become across the EU. Today, this is a significant initiative to bring this proven solution for waste remediation and energy generation to Ohio, given the immense impact these projects will have on job creation, the ability to build state-of-the-art permanent infrastructure, and the opportunity to enhance the security and sustainability of the electrical networks in the state of Ohio."

When asked about their interest in bringing their technology to the market in the USA, Bernat Sala, CEO of Tecam said, "We are excited about our close relationship with W2EA, and their knowledge and skills they have regarding WtE solutions. The opportunity to collabo-

rate and build our first WtE facilities in Ohio will allow Ohio to be the market leader in the USA, as a pioneer that showcases the value and effectiveness of these solution-based facilities."

The engineering behind the technology

The engineering required for building a WtE facility is complex and time-consuming, but the systems are customizable, so any WtE facility can be scaled to the location, the volumes of MSW available, and the needs of the local users of electrical power.

A typical facility is designed as a multi-lane parallel system, with mostly two or three lines in parallel, but it will depend on the considered mass flow-rates of the MSW. A typical facility requires approximately seven to 10 acres, including lands, roads, rail lines, and parking. Of further advantage, is that a WtE facility can allocate certain lanes to specific types of waste, including standard MSW, construction waste, hazardous waste, medical waste, various sludges and liquids, and any waste containing NORM and PFAS/PFOS forever chemicals, which have been proven to be highly toxic to our populations, and our environment.



WtE facility, Ambimed, Portugal.

As a brief description of the WtE process, after the recyclables are removed, the sorted MSW enters the primary chamber, which is on a decline plane, which rotates at a carefully calibrated speed, depending on the composition of the MSW. The MSW enters the primary chamber where it remains for between 45 to 90 minutes. In this step,

the main goal is to heat and gasify the volatile organic compounds contained in the MSW, and separate them from the non-volatile compounds such as ash. The primary chamber furnace operates around 600-850°C. The bottom ash is cooled and carefully extracted, while the flue gases move to the secondary combustion chamber.

The secondary chamber runs at a higher temperature, typically over 1100°C, where the flue gases remain in residence for around two seconds, to ensure complete oxidation of pollutants. After this oxidation step, the hot flue gases are sent to an energy recovery system, such as a steam boiler, to utilize the energy from the flue gases, by transforming them into superheated steam, to maximize the electrical production. This steam can be used for several applications: steam for close proximity users, electricity production in a steam turbine, or even hot water generation.

After this energy recovery step, the flue gases are cooled down but still need to be treated before they are released into the atmosphere. Using injectable reactive agents, such as sodium bicarbonate, active carbon, and urea, any remaining compounds or particulates carried into the oxidation chamber are eliminated or removed through a bag-house filter. The emissions are primarily steam, which are then sent out the stack. These steam emissions are virtually free of any pollutants, toxins, odors, and particulates, including the elimination of all PFAS/PFOS elements. All ash created in the oxidation chamber is meticulously collected as fly ash, representing approximately two percent of the initial input volumes.

Primary inputs into the system comprised of MSW are consumed at 20-25 metric tons (MT) per hour, or approximately 200,000 MT per year, where the corresponding primary output from the turbine is constant and consistent electrical power generated at 20-25 megawatts (MW), or approximately 200,000 MWh per year, or 200 million kwh per year.

Key considerations & economic impact

The operational viability and effectiveness of a WtE operation varies and can only be determined through a full

See "Our Energy Frontier," page 8



Bernat Sala Maestro & some of the senior team.

and complete analysis of all relevant factors. This would include the availability of accessible land, a source of continuous waste materials, and a need and accessibility of a local consumer to acquire the consistent supply of power.

The constant throughout this process, however, is the need to involve multi-disciplinary engineers, trained and experienced in process flows, and the nuances related to the mechanical, electrical, environmental, and chemical requirements during the design, build, and operational stages of the facility. As Sala defined the work required by the engineering teams at Tecam, and on sites such as those planned for Ohio, he stated that, "Engineers' expertise and dedication are essential in tackling global environmental challenges and driving industrial sustainability forward. By combining cutting-edge technology with engineering excellence, we can make a real impact in reducing pollution and optimizing industrial resources."

Knowing this demand for highly skilled engineers, Ondrejicka added, "W2EA has had open and frank discussions with several educational institutions in Ohio, as it relates to our projected high demand for engineers, as well as the composition of a curriculum that will be needed to ensure a steady flow of well-trained engineers with a specialty in all aspects of WtE construction, and ongoing operational processes."

A WtE solution is a major step towards a more reduction-focused management of waste, and the true implementation of a circular economy in Ohio. Simply put, it eliminates waste, and from it, produces electrical power, which further enhances the lifestyle of the residents and the businesses within the local communities. This is done through a model of collaboration, co-operation, and communication, and includes the operators of the WtE facility, Tecam, and the consultants, engi-

neers, government agencies, educational institutions, and most importantly, the residents of the communities that have the potential to derive the most benefits from this innovative technology. In short, through open and transparent communication and education, the "fear" of the unknown is eliminated, which allows Ohioans to understand that a WtE facility is safe, and economically feasible, so they can internalize the benefits for themselves, their community, and the state.

The end result, is that infrastructure initiatives such as the WtE facilities proposed for Ohio bring an unparalleled number of financial benefits to the local economy, through job creation, manufacturing stimulus, increased tax-base revenues, and a reduced cost for the management of waste, and for solutions related to the generation of power.

We know and understand that sustainability is more than just a buzzword! Societal norms in today's world, both from the perspective of consumers and business entities are looking to create solutions that are not just here for today, but are solutions that work well into the future, for the benefit and well-being of our children and grandchildren. These solutions also need to be based on initiatives that are designed to save the planet, and not continue to destroy it. As often as possible, these solutions need to be based on the concept of circularity, where the products created at one stage can be reused at another, and then another, which helps to stop the endless cycle for the production of "new" products. To do this, all aspects of a mega-project like WtE needs the ongoing regulatory and financial support of government, the capital markets, and the environmental oversight groups.

Ondrejicka further stated, "The financial requirements to build a WtE facility are significant, but by working closely with private equity funders, bond agencies, and local and state government, we have confirmed an unprecedented level of interest in moving these WtE projects forward in Ohio, as well as other states."

Vision for good

As a proven technology used extensively in Europe, it is safe to say that it is imminent that WtE solutions designed for the elimination of waste, and the resulting production of electri-

cal power, will be coming to the USA. The benefits to be derived from such initiatives are immense, from improving the environment, building healthier and growing communities, and expanding infrastructure for the good of all stakeholders. First and foremost, a WtE facility addresses the ever-growing waste issue head-on, through the actual elimination of the daily waste that is currently going to landfill sites, and if the capacity is available, years of waste currently stockpiled in landfills can also be excavated and eliminated. This results in a positive move forward towards better eco-stewardship within the community, and for the planet, one location at a time. These initiatives will in turn, directly impact and enhance the quality of life of local residents, by improving the quality of the air, water, flora, fauna, and the land, as well as the food that is grown there.

With the support of industry and government, states such as Ohio that take the initiative to support the building and operating of this technology will be the front-runners in achieving their environmental and climate change goals, as well as their growing energy needs. It will be the progressive and visionary states like Ohio that will be recognized for setting the standard that all other states will aspire to.

Complementary to these initiatives, will be the ever-growing need for highly skilled professionals, such as engineers. These engineers will represent the human capital that is the backbone of a WtE facility, who will need to understand the intricacies of these types of operations, whether those be the engineers with chemical, mechanical, electrical, or environmental specialties.

Conclusion

W2EA is proud to be working in Ohio, alongside the industry leaders, educational institutions, engineering professionals, and the representatives from all levels and all departments in government. With the finalization of the first WtE facilities to be built in Ohio, we are confident that the benefits from this technology will quickly become evident, and the facilities commonplace. This will provide the decision makers across the state with the confidence and knowledge to accelerate their initiatives to locate and build additional WtE facilities, for even greater benefits, where from many differ-

See "Our Energy Frontier," page 9

ent regions, Ohio can stand proud and declare that they are the leaders in the pursuit towards a sustainable strategy of "zero waste to landfill."

Dan Shepherdson, CPA, is the executive vice president and chief financial officer of W2E Americas, Inc. As a professional accountant, entrepreneur, and governance expert, Shepherdson has played an integral role in bringing new and innovative projects, such as waste to energy, to the USA, with a view to establishing eco-positive projects that are community-focused, economically feasible, and sustainable over the long-term. Contact Dan Shepherdson at dan@w2eamericas.com.

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CHAPTER NEWS

Mahoning Valley Chapter: Local leaders are passionate about MATHCOUNTS



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**WELCOME,
NEW MEMBERS**

Welcome to these new NSPE-Ohio members from February 6 through May 6, 2025:

Akron District Chapter
Thomas Breen

Buckeye Chapter
Evelio Caraballo

Dayton Chapter
Noah Carter
John Hale
Joey Karacia

Franklin County Chapter
Anna Berube
Jacob Capaldi
Will Griesmyer
Hannah Hull
MacKenzie Kelso
John R. Owen, PE, BCEE
Hudson Park
Nageswara Rao Vudathala
Anthony Wong
Joseph Young

Maumee Valley Chapter
Jalen Towers, PE

Northeast Chapter
Leighton McCoy

Southwest Ohio Chapter
Carl Kirkendall
David Kirkpatrick

Toledo Regional Chapter
Kayla Gedert
Clarence Young



Above, local middle school students concentrate on their tests during the Mahoning Valley Chapter's MathCounts event in February at Youngstown State University.



The Mahoning Valley Chapter board gathers for its April meeting at Steamers Stonewall Tavern in North Lima. Pictured (left to right) are **Joseph V. Warino, PE, PS, F.NSPE**; **Nils "Rik" Nilsson, PE, F.NSPE**; **John Lapinski, PE, SI, CPESC**; **Rick Deschenes, Jr., PhD, PE**; and **Joe Gonda, PE, SI**.

John Lapinski, PE, SI, CPESC, of Buckeye Civil Design, LLC, provides instruction for mathletes at the MVSPE MATHCOUNTS Competition. >>>



Youngstown State University Associate Professor **Rick Deschenes, Jr., PhD, PE**, kicks off Mahoning Valley Chapter's 2025 MATHCOUNTS program.



< **Mike Sherman, PhD**, vice president for student affairs at YSU, speaks at the MVSPE MATHCOUNTS competition.



State Board accepts settlement agreements in 22 cases

At its December 2024 meeting, the Ohio State Board of Registration for Professional Engineers and Surveyors accepted settlement agreements in 22 cases, including cases featuring involving five professional engineers (PEs), three professional surveyors (PSs), one dual registrant (PE-PS), one unlicensed individual, and 12 firms.

\$2,000 fine, cease & desist

Alabama PE provides engineering services in Ohio when he did not have an Ohio PE license, aids & abets a company to offer & provide engineering services without an Ohio Certificate of Authorization (CoA)

A PE residing in Birmingham, Alabama, provided engineering services in Ohio at a time when he did not possess a PE registration with the Ohio State Board of Registration, and he aided and abetted an engineering firm to offer and provide engineering services in Ohio at a time when the firm did not possess a CoA with the Ohio Board, in violation of Ohio Revised Code Sections 4733.02, 4733.20(A)(2), (3), and 4733.22. In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PE entered into a settlement agreement through which he agreed to pay a \$2,000 fine and cease and desist from offering and providing engineering services in Ohio until he obtains an Ohio PE registration, and he agreed to comply with the laws and rules governing the practice of engineering and surveying in Ohio. (At the time the violations were discovered, the Alabama man was an Ohio PE applicant. Following the State Board of Registration's approval and signing of the settlement agreement, he was granted an Ohio PE registration. The disciplinary action was applied to his registration, not his application number.)

Fines of \$500-\$1,000

Two PEs provide engineering services while their licenses were inactive

In two separate cases, a PE residing in Little Chute, Wisconsin, and another PE residing in Columbia City, Indiana, each offered to provide and provided engineering services in Ohio at a time when his

respective Ohio PE registration was inactive with the State Board of Registration. The Indiana PE also used the designation "PE" during this time. These actions were in violation of Ohio Revised Code Sections 4733.02 and 4733.22. In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, each PE entered into a settlement agreement through which he agreed to pay a fine and comply with the laws and rules governing the practice of engineering and surveying in Ohio. Through their settlement agreements, the Wisconsin PE agreed to pay a \$500 fine and the Indiana PE agreed to pay a \$1,000 fine.



\$500 fine

Toledo PE advertises engineering services through firm with an inactive CoA

In violation of Ohio Revised Code Sections 4733.16, 4733.20(A)(2) and 4733.22, a PE residing in Toledo, Ohio, advertised to provide engineering services through a firm in Ohio at a time when the firm did not possess a CoA with the State Board of Registration. In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PE entered into a settlement agreement agreeing to pay a \$500 fine, to cease and desist from offering and providing engineering services in Ohio until such time the firm obtains an Ohio CoA, and to comply with the laws and rules governing the practice of engineering and surveying in Ohio.

\$500 fine

Dayton PE provides engineering services with inactive license

A PE residing in Dayton, Ohio, offered to provide and provided engineering services in Ohio at a time when his Ohio PE registration was inactive with the

State Board of Registration, in violation of Ohio Revised Code Sections 4733.02 and 4733.22. In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PE entered into a settlement agreement agreeing to pay a \$500 fine and to comply with the laws and rules governing the practice of engineering and surveying in Ohio.

Replace non-compliant monumentation & plats or pay \$5,000 fine & serve a two-year suspension
Bergholz PS's boundary surveys fail to meet minimum standards

A PS residing in Bergholz, Ohio, provided surveys in Ohio that failed to meet the minimum standards for boundary surveys by failing to set boundary monuments and/or reference monuments with a minimum cross-section area of material of 0.21 square inches when completing boundary surveys in Ohio, in violation of Ohio Revised Code Sections 4733.20(A)(2), (5) and Ohio Administrative Code Sections 4733-37-03(C)(3). In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PS entered into a settlement agreement agreeing to replace all non-compliant monumentation and plats of surveys within twelve months or pay a \$5,000 fine and serve a two-year suspension of his professional surveyor registration, accepted a public reprimand, and to comply with the laws and rules governing the practice of engineering and surveying in Ohio.

\$1,000 fine, other disciplinary action

Lorain PS provides surveying services that fail to meet minimum standards

A PS residing in Lorain, Ohio, provided a mortgage location survey in Ohio that failed to comply the minimum standards for mortgage location surveys, in violation of Ohio Revised Code Sections 4733.20(A)(2), (5) and Ohio Administrative Code Sections 4733-38-02(A), (B), and 4733-38-05(K). In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PS entered into a settlement agreement, which included agreeing to pay a \$1,000 fine, acknowledge that affixing his PS seal to any document certifies that document's accuracy and

See "Settlement agreements," page 11

completeness, and comply with the laws and rules governing the practice of engineering and surveying in Ohio.

\$1,000 fine

Eldorado PS provides surveying services through firm with an inactive CoA, fails to meet minimum standards & fails to affix seal & signature on work

A PS residing in Eldorado, Ohio, offered to provide and provided surveying services in Ohio through a firm at a time when the firm did not possess an active CoA with the State Board of Registration, provided surveying services that failed to meet the minimum standards for boundary surveys, and failed to affix his Ohio PS seal and signature to work product as required, in violation of Ohio Revised Code Sections 4733.16, 4733.20(A)(2), (3), 4733.22 and Ohio Administrative Code Sections 4733-37-01, 4733-37-05(A), (B). In order to avoid further administrative action for violations of the Ohio Revised Code Chapter 4733, the PS entered into a settlement agreement, which included agreeing to pay a \$1,000 fine and comply with the laws and rules governing the practice of engineering and surveying in Ohio.

\$1,000 fine, cease & desist

Dual registrant in Laurelville provides surveying services that fail to meet minimum standards

A dual registrant (i.e., a person registered as both a PE and a PS) residing in Laurelville, Ohio, offered to provide and provided surveying services in Ohio that failed to meet the minimum standards for boundary or mortgage location surveys, in violation of Ohio Revised Code Sections 4733.20(A)(2), (5) and Ohio Administrative Code Sections 4733-37-01, 4733-37-05(A), (B), and (C). In order to avoid further administrative action for violations of the

Ohio Revised Code Chapter 4733, the dual registrant entered into a settlement agreement, which included agreeing to pay a \$1,000 fine; cease and desist from offering to provide, providing, and/or representing himself to the public as capable of providing surveying services that do not comply with Ohio Administrative Code Sections 4733-37 and 4733-38; and comply with the laws and rules governing the practice of engineering and surveying in Ohio.

Cease & desist

Unlicensed Massillon man represented himself to the public as a surveyor

A resident of Massillon, Ohio, represented himself to the public as a surveyor and capable of providing surveying services in Ohio at a time when this individual did not possess a professional surveyor registration with this Board, in violation of Ohio Revised Code Sections 4733.02, 4733.22 and 4733.99. In order to avoid further legal action for violations of the Ohio Revised Code Chapter 4733, the individual entered into a consent agreement through which he agreed to cease and desist from representing himself as a surveyor to the public and providing surveying services, and he agreed to comply with the laws and rules governing the practice of engineering and surveying in Ohio.

Fines ranging from \$500-\$2,000

Twelve firms operate with inactive CoAs

The State Board of Registration reported that 12 firms offered and provided engineering and/or surveying services in Ohio while their respective CoAs were inactive, in violation of Ohio Revised Code sections 4733.16 and 4733.22. In order to avoid further administrative action for violations of Ohio Revised Code chapter 4733, each firm entered into a settlement agreement, agreeing to pay a fine and comply

with the laws and rules governing the practice of engineering and surveying in Ohio. Below is a list detailing the location of each firm, the type of services offered and provided, and the fine incurred:

- **Norcross, Georgia:** Engineering services. Fine: \$1,000
- **Decatur, Illinois:** Engineering services. Fine: \$2,000
- **Akron, Ohio:** Engineering services. Fine: \$500
- **Columbus, Ohio:** Engineering services. Fine: \$500
- **Columbus, Ohio:** Surveying services. Fine: \$500
- **Logan, Ohio:** Surveying services. Fine: \$500
- **Mansfield, Ohio:** Engineering services. Fine: \$500
- **Perrysburg, Ohio:** Engineering services. Fine: \$500
- **Tiffin, Ohio:** Surveying services. Fine: \$500
- **Youngstown, Ohio:** Engineering services. Fine: \$500
- **Tulsa, Oklahoma:** Engineering services. Fine: \$500
- **Kaukauna, Wisconsin:** Engineering services. Fine: \$500

The Ohio State Board of Registration for Professional Engineers and Surveyors is the state agency that regulates and licenses the professions of engineering and surveying in Ohio. The State Board of Registration licenses approximately 30,000 registered professional engineers and professional surveyors, 3,700 registered engineering and surveying firms and evaluates more than 2,200 licensing applications yearly. The Board's mission is to safeguard the health, safety, property, and welfare of the citizens of Ohio by providing effective licensure and regulation of professional engineers, professional surveyors and engineering and surveying firms.



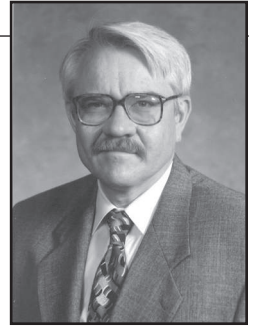
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PROGRAMS

by N.E. Nilsson, FNSPE, Past President (1993), Ohio Society of Professional Engineers



Engineers & the Chacey Circle

The Chacey Circle is named in honor of Lloyd Chacey who is a legend at the Ohio Society of Professional Engineers (NSPE-Ohio). Some of his projects continue on to this day. He started the *OhioENGINEER* magazine, established the Engineers Foundation of Ohio (EFO) in 1964 and served as the secretary of the Board of Governors of the national organization of the Order of the Engineer.

The purpose of the Chacey Circle is to promote more scholarships and other projects to help educate the next generation of engineers in Ohio. This is in keeping with the motto of Lloyd Chacey: "Content but not satisfied."

In this column, my focus will be on people who have made a difference and who have made contributions in the area of scholarship. When **William Hupp, PE**, read an earlier column about the Chacey Circle in a previous *OhioENGINEER* magazine, he was moved to make a donation to the EFO scholarship fund. Many thanks to William Hupp; his response to this program is greatly appreciated and hopefully many more Ohio engineers will follow in getting on board with the theme of the Chacey Circle, "Create a Legacy."

Another contributor in the scholarship arena is a longtime participant at NSPE-Ohio and EFO, and his name is one that all of you should recognize: **Roger Loveless** and his wife, **Millie**, made a major contribution to EFO in their wills. Today, the two funds they set up with EFO are producing a scholarship and building EFO's children's programs.

Some Ohio engineers have established scholarships but modestly have

chosen a scholarship name that downplays the role of the donor. An excellent example of this occurred in 2018. **Joseph Niedecken** was the second member of his family to obtain an undergraduate degree in engineering. His older brother, Harry, became a chemical engineer. Joe's engineering career was in the refinery business where he won awards for developments like recovering used vapors, mixing them with natural gas making them safer to

handle, and then reusing them as fuel. When Joe retired, he and his wife, **Retha**, endowed a scholarship to be used by the four winning candidates to study engineering at the University of Cincinnati. Joe simply wanted to call it the "Pay It Forward" scholarship.

I would be remiss if I didn't mention the **Cyril Neff** Scholarship. While it is true that his name is the only one mentioned with regard to this scholarship, I always viewed it in a way as the **Neff** family scholarship. When I was on the NSPE-Ohio Board of Directors back in the 1980s, **Tom Neff** served a term as the president of NSPE-

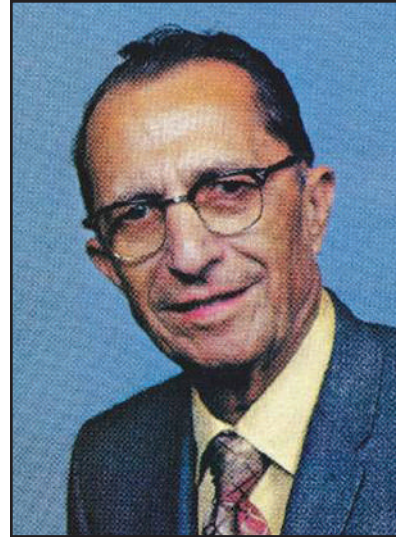
Ohio. There were other Neffs too from the Cleveland area. A proud graduate of Notre Dame, Tom always wore a baseball cap with the "ND" logo. I quite often joked with him about wearing his North Dakota hat.

So, what is holding you back?

Wouldn't you like to join the elite group of Ohio engineers who have left a legacy in the scholarship arena? One way to make an impact on the profession of engineering is to fund the process that will guarantee that there will be a worthy successor for

you waiting in the wings.

EFO Executive Director **Tim Schaffer** is sitting at his desk and awaiting your call at 614-223-1177.



Lloyd A. Chacey, PE



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Ohio mathletes at the national finals: Last year's DC experience, this year's preparation

Ohio's 2024 MATHCOUNTS Champions will tell you that their experience at the national finals in Washington, DC, was one they will never forget. From exploring our nation's capital to competing on a national stage, the trip offered both

challenge and reward. This year, a new team of Ohio mathletes is preparing for the same opportunity. With practice and anticipation building, they're ready to follow in familiar footsteps. In fact, one competitor from last year is returning;

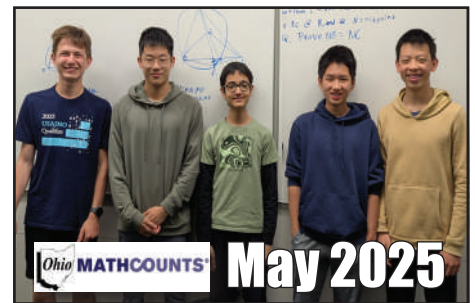
eighth grader Henry Lu is bringing valuable experience to this year's team.

"I'm thrilled to have the honor of meeting with my friends from across the country and see how much I've grown this past year," Lu said.

Our photo gallery highlights the journey of Ohio mathletes, connecting last year's experience in DC with this year's preparation for the national stage.



Above & Right: Henry Lu and his 2024 teammates—Aryan Agarwal, Samuel Joo, and Arush Krisp—enjoy the national competition and their tour of the Capitol Building in Washington, DC.



Ben Jump (left), one of Ohio's 2023 MATHCOUNTS champions, joins the 2025 state team—**Caleb Tan** (Mason Middle School), **Archishman Dey** (Solon Middle School), **Andy Mo** (Solon Middle School), and returning national competitor **Henry Lu** (Dublin Grizzell Middle School)—in Central Ohio for a final practice before the national competition in Washington, DC, May 11-12.



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Ethics and emerging technologies take center stage as engineers earn 15 CPD hours at fall conference

At the 2024 Fall CPD Conference in November, professional engineers from across Ohio, 21 other states, and Great Britain came together to explore a compelling blend of cutting-edge innovation and ethical responsibility topics. The two-day virtual event provided attendees with up to **15 CPD hours**, including a diverse lineup of technical, managerial, and ethics seminars.

From the latest developments in electrolysis-based hydrogen generation to the evolving landscape of the natural gas industry, the technical sessions offered insights into the rapidly shifting world engineers must navigate. One participant praised the hydrogen seminar as “the best I have ever heard presented on this subject,” highlighting the conference’s commitment to delivering timely, expert-led content.

Yet the event wasn’t solely about innovation. Two hours of ethics seminars were a cornerstone of the program, tackling topics such as ethical decision-making strategies and the often-overlooked role of self-deception in engineering practice. These sessions offered a deeper look at the human factors influencing professional judgment, reinforcing the importance of maintaining integrity in the face of complex, real-world challenges.

The Fall CPD Conference also addressed essential managerial topics, including PFAS’s impact on municipal water systems and the effective use of parliamentary procedures to improve meeting outcomes—underscoring the multidimensional responsibilities of today’s engineers.

Participants responded enthusiastically to both the content and delivery. The virtual format ensured seamless access to high-quality presentations, with attendees describing the event as “very informative and interesting” and “a valuable experience.” Multiple participants praised the structure and execution, thanking EFO for a “well-run webinar” and a “solid conference.”

By blending important technical subjects with grounded managerial and ethics insight, the 2024 Fall CPD Conference offered more than just continuing education—it provided a roadmap for navigating the future of engineering with both competence and conscience.

The Fall CPD Conference will return **November 6-7, 2025**, continuing EFO’s mission to support the ongoing growth and development of Ohio’s PEs.

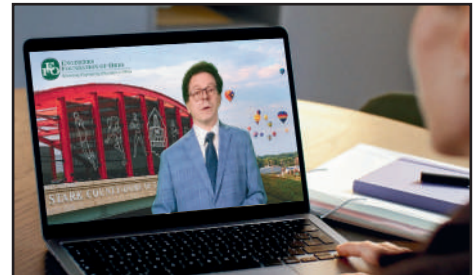


As studio cameras roll, **EFO President Scott Dilling, PE**, leads the Pledge of Allegiance, acknowledges sponsors, and introduces the presenters scheduled for the 2024 Fall CPD Conference.

TWO HOURS OF ETHICS EDUCATION



In separate sessions, **Aaron Mann, Esq.**, principal and general counsel at Terracon Consultants, and **Rebecca Bowman, Esq., PE, DFE**, the former senior director of ethics and professional practice at NSPE, explored key ethics topics. Mann addressed cognitive biases in decision-making, while Bowman focused on self-deception in engineering, covering its implications, the double curse of incompetence, and adversarial alliances.



EFO President Scott Dilling's green screen background shows hot air balloons soaring near the Pro Football Hall of Fame Bridge in Canton, where he lives.

Abdolreza Osouli, PhD, PE, executive director at Marino Engineering Associates, discussed the fundamentals of building above underground mines. He covered risk factors, mine subsidence conditions, engineering approaches, and cost-effective mitigation measures, drawing from various construction site-mining scenarios and case histories.



Michael Heyeck, PE, founder of The Grid Group, LLC, examined the U.S. electric grid's future in his presentation, “U.S. Electric Grid at Mid-Century.” He challenged projections for 2050 electricity demand, discussing potential disruptors, challenges, and the

outlook on supply and demand. Heyeck, an IEEE Life Fellow, has more than 40 years of experience in the electric power industry.



Kristen Koehlinger, PE, department head and deputy state historic preservation officer at Ohio History Connection, discussed the importance of Section 106 of the National Historic Preservation Act. She explained its necessity, its

impact on engineering project planning, and insights from her professional experience in preservation and engineering.

Kevin Houser, MS (Mechanical), PE, CEO of St. Andrews Systems, discussed the design of power ultrasonic transducers and waveguides. He explored efficiency considerations and power ultrasound applications in surgery, drawing from his three decades of experience and contributions to Harmonic ACE products used in millions of surgeries.



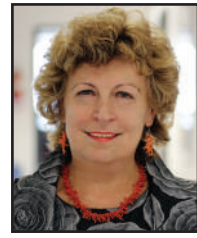
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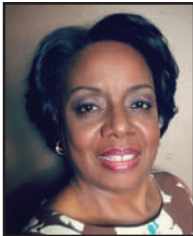
< Live from EFO's Columbus office, **EFO President Scott Dilling, PE**, skillfully steered the Q&A sessions at the 2024 Fall CPD Conference, relaying the audience's most pressing questions to our expert presenters. Managing a virtual conference takes poise – and President Dilling nailed it!



Deb McAvoy, PhD, PE, PTOE, an associate professor in civil engineering at Ohio University, explored key traffic control devices, focusing on pavement markings and traffic signals. She covered the types of pavement markings, their functions, and maintenance issues, as well as traffic signal control devices, their placement, layout, and mounting configurations, and signal coordination and timing. She has extensive experience with ODOT, Michigan DoT, and FHWA, among others.



Judit Puskas, PhD, PEng, distinguished university professor at The Ohio State University, discussed rubber syntheses and manufacturing processes. She covered rubber types, manufacturing methods, and the ethics of polymer engineering. Dr. Puskas, co-inventor of the Taxus drug-eluting stent, has received numerous accolades, including an award from the GE Healthymagination Breast Cancer Challenge and the Charles Goodyear Medal.



Mary Remson, MBA, PRP, CPP-T, a professional registered parliamentarian and certified professional parliamentarian, shared tools of parliamentary procedure to help teams engage in orderly deliberation. She covered the correct procedures for obtaining the floor, limiting and closing debate, members' rights, and the seven most used motions, ensuring meetings are more efficient and effective.



David Nowicki, PE, a degreed electrical engineer with over 35 years of experience, discussed the technical challenges of electrolysis-based hydrogen generation and its impact on power distribution. He covered hydrogen generation from both physical and electrochemical perspectives, the effects of rectification on power quality, and mitigation techniques for improving feasibility and efficiency.

Nick Phillips, PE, PMP, MBA, MS, CWI, design engineering team leader at NiSource, discussed changes in the natural gas industry. Phillips covered station and pipeline design, focusing on adapting to evolving requirements, increased scrutiny, and industry changes across Ohio, Indiana, and Kentucky.



Wayne Rendely, BSCE, PE, a sole proprietor in Huntington Station, New York, discussed tensile membrane structure analysis and design. He demonstrated non-linear behavior, stiffness, and flexibility in design, guiding participants through a step-by-step geometry analysis and finite element modeling for non-linear structures.



S. Rao Chitikela, PhD, PE, PEng, BCEE, FASCE, an expert in water treatment, energy recovery, and environmental sustainability, discussed PFAS removal technologies and their impact on municipal water systems, including regulatory requirements and cost effects for municipalities.



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by Travis L. Rhoades, PE, Vice President, Legislative & Government Affairs,
Ohio Society of Professional Engineers



The future of energy policy in Ohio: Challenges & opportunities for engineers

As Ohio's 136th General Assembly commences its work, the pivotal issue of energy policy has taken center stage. With legislative leaders, advocacy groups, and industry stakeholders advocating for reforms that could redefine the state's energy landscape for decades, the significance of these debates cannot be overstated. The market dynamics, regulatory oversight, and the government's role in shaping the energy mix are at the heart of these discussions. For Ohio's professional engineers, these debates present challenges and crucial opportunities to shape the future of energy infrastructure.

A coalition of conservative organizations, including the Buckeye Institute and Americans for Prosperity-Ohio, has called for ending government subsidies in the energy sector. They argue that subsidies distort market dynamics, leading to inefficiencies and unintended economic consequences. Their primary target is what they consider to be subsidies for the Ohio Valley Electric Corporation (OVEC), a remnant of the controversial 2019 House Bill 6 associated with corruption and regulatory capture.

The Buckeye Institute's recent policy report advocates for repealing so-called subsidies for legacy power plants, enhancing grid transparency, improving the permitting process, and allowing market forces to determine the optimal energy mix rather than state mandates. These proposals align with broader trends toward deregulation and competition in the energy sector. However, questions remain about whether market-driven policies alone will address concerns such as energy reliability, sustainability, and affordability.

House Bill 15, introduced by Representative Roy Klopfenstein (R-Haviland), seeks to overhaul Ohio's energy regulations. The purpose of the 106-page bill was described by the bill sponsor as legislation designed "to ensure reliable, affordable, and available energy for all Ohioans." House Bill 15 aims to do this by requiring utilities to set market-based electricity prices, preventing electric distribution utilities from owning generation assets or bidding into wholesale markets using ratepayer funds, and proposes several provisions designed to safeguard ratepayers from unnecessary costs. It also aims to shift tangible property taxes from

generation facilities to transmission and distribution systems to promote Ohio as a competitive market among our neighboring states.

Meanwhile, the Ohio Senate has also been working on a comprehensive energy plan of their own. Senate Bill 2, sponsored by Senator Bill Reineke (R-Tiffin), signals a similar push for increased power generation and affordability as House Bill 15, but takes a different approach. The bill has already undergone several changes in the Senate Energy Committee over the past few months and is likely to see more as the bill continues to move.

While both chambers have been vocal about supporting energy reform legislation, leaders in the House and Senate have acknowledged significant pushback. Utilities, consumer advocacy groups, and clean energy proponents have raised concerns that deregulation efforts could disproportionately benefit large industrial users while leaving residential and small business customers vulnerable to price fluctuations and service disruptions. Any policy changes must consider all stakeholders' concerns and strive for a balanced, well-informed approach.

Ohio is grappling with a mounting electricity demand, propelled by the proliferation of data centers and artificial intelligence applications. Ohio's projections paint a stark picture. According to forecasts from AEP, centers alone will necessitate an additional 5,000 megawatts of electricity by 2030, with future demand potentially soaring to 30,000 megawatts. This surge in demand raises urgent questions about grid capacity, investment in new generation, and the role of renewable energy in meeting these needs.

At the same time, Ohio's renewable energy policies remain in flux. The state's renewable portfolio standard, set initially at 12.5 percent by 2024, was weakened to 8.5 percent by 2026 under House Bill 6. While market forces push many companies toward cleaner energy options, legislative uncertainty continues to impact long-term planning and investment.

Energy infrastructure is as much a technical challenge as a policy issue. Ohio's professional engineers are uniquely positioned to provide expertise on grid reliability, ensuring the electric grid can

handle increasing demand without compromising stability. Engineers play a critical role in infrastructure modernization and distribution networks. They also contribute to permitting and regulatory efficiency by streamlining processes without sacrificing safety or environmental integrity. Additionally, engineers evaluate the technical feasibility of an all-of-the-above approach to energy generation, ensuring diverse and sustainable energy solutions.

As engineers, we are acutely aware that sound policy must be firmly rooted in technical realities. The ongoing debates about Ohio's energy future demand active engagement from those who design, build, and maintain our critical infrastructure. Our technical expertise is valuable and indispensable in shaping these discussions and ensuring that the policies are sound and implementable.

Given the high stakes of Ohio's energy policy decisions, professional engineers must become more involved in shaping these discussions. Staying informed on legislative developments and participating in advocacy efforts through NSPE-Ohio will ensure that engineering perspectives are included in policy decisions. Connecting with legislators and sharing technical expertise will help lawmakers understand the implications of proposed energy reforms. Attending public hearings and forums allows one to advocate for balanced, well-informed policies. Collaborating with utilities, businesses, and consumer advocacy groups helps develop solutions that balance economic, environmental, and reliability concerns.

The decisions made in the coming months, particularly the proposed energy reforms, will significantly shape Ohio's energy landscape for years to come. Engineers have both the responsibility and the opportunity to contribute to policies that prioritize efficiency, reliability, and sustainability. Now is the time to step forward and ensure that our voices are heard in the halls of government.

By engaging in this policy discourse, Ohio's professional engineers can help build a more resilient and forward-thinking energy framework for the state. Let's take an active role in shaping the future of energy.

LEGISLATIVE & GOVERNMENT AFFAIRS: BILL TRACKING SUMMARY

136th Ohio General Assembly: Bills monitored by NSPE-Ohio

ELECTRIC SERVICE LAW CHANGES, House Bill 15 (Klopfenstein)	To amend the competitive retail electric service law, modify taxation of certain public utility property, & repeal parts of House Bill 6 of the 133rd General Assembly.	<u>Status:</u> 5/7/2025 - Sent to Governor for signature
CREATE WATER IMPROVEMENT DISTRICTS, House Bill 49 (Claggett)	To allow for the creation of water improvement districts.	<u>Status:</u> 4/9/2025 - House Natural Resources, (1st Hearing)
TRANSPORTATION BUDGET, House Bill 54 (Stewart)	To make appropriations for programs related to transportation for the biennium beginning July 1, 2025, & ending June 30, 2027 & to provide authorization & conditions for the operation of those programs.	<u>Status:</u> 3/31/2025 - SIGNED BY GOVERNOR; eff. 3/31/25
REVISE, STREAMLINE OCCUPATIONAL REGULATIONS, House Bill 59 (Fowler, Hiner)	To revise & streamline the state's occupational regulations.	<u>Status:</u> 2/12/2025 - Referred to Committee House General Government
ODOT RESPONSIBILITIES-HIGHWAYS IN VILLAGES, CITIES, House Bill 83 (Ferguson, McClain)	To clarify & amend the laws related to the Director of Transportation's responsibilities for state highways located in villages & cities.	<u>Status:</u> 4/29/2025 - House Transportation, (2nd Hearing)
RESTORE CLEAN OHIO FUND, House Bill 93 (Hall, Sweeney)	To restore the Clean Ohio Fund to be administered by the Department of Development & the Clean Ohio Council.	<u>Status:</u> 2/12/2025 - Referred to Committee House Finance
OPERATING BUDGET, House Bill 96 (Stewart)	To make operating appropriations for the biennium beginning July 1, 2025 & ending June 30, 2027, to levy taxes, & to provide authorization & conditions for the operation of state programs.	<u>Status:</u> 5/8/2025 - Senate Health, (4th Hearing)
REVISE NON-RECOURSE LITIGATION FUNDING AGREEMENT REGULATIONS, House Bill 105 (Craig, Thomas)	To revise & supplement state regulations concerning non-recourse litigation funding agreements.	<u>Status:</u> 4/1/2025 - SUBSTITUTE BILL ACCEPTED & AMENDED, House Insurance, (5th Hearing)
TAX EXEMPTION-PROJECTS IN PORT AUTHORITY AREA, House Bill 147 (Lorenz)	To exempt from sales & use tax building materials sold to a contractor under a contract valued at \$25 million or more for projects in areas with a port authority.	<u>Status:</u> 3/5/2025 - Referred to Committee House Development
SURPLUS REVENUE ALLOCATION-ROADS, BRIDGES, House Bill 151 (Stephens)	To allocate a portion of any state revenue surplus to a program that funds certain road & bridge projects.	<u>Status:</u> 3/19/2025 - Referred to Committee House Transportation
CREATE MANUFACTURING TECHNOLOGY ASSISTANCE GRANTS, House Bill 159 (Santucci, Demetriou)	To create the manufacturing technologies assistance grant program & to make an appropriation.	<u>Status:</u> 5/6/2025 - House Technology & Innovation, (1st Hearing)
CREATE UNIVERSAL REGULATORY SANDBOX PROGRAM, House Bill 176 (Fischer, Lorenz)	To create a regulatory relief division within the common sense initiative office & to establish a universal regulatory sandbox program.	<u>Status:</u> 5/6/2025 - House Government Oversight, (1st Hearing)
LAW MODIFICATIONS-EXCAVATION REQUIREMENTS, House Bill 227 (Robb Blasdel, Johnson)	To modify excavation requirements.	<u>Status:</u> 5/7/2025 - House Commerce & Labor, (1st Hearing)
LAW CHANGES-PUBLIC UTILITIES, Senate Bill 2 (Reineke)	Re public utilities law, to make changes regarding utility tangible personal property taxation, & to repeal parts of House Bill 6 of the 133rd General Assembly.	<u>Status:</u> 3/26/2025 - Referred to Committee House Energy
MAKE CHANGES-BUILDING INSPECTIONS, Senate Bill 6 (Roegner)	To make changes to the law relating to building inspections.	<u>Status:</u> 4/9/2025 - House Development, (2nd Hearing)
REVISE NON-RECOURSE LITIGATION FUNDING AGREEMENTS, Senate Bill 10 (Wilson, Lang)	To revise & supplement state regulations concerning non-recourse litigation funding agreements.	<u>Status:</u> 3/12/2025 - Senate Judiciary, (3rd Hearing)
PROHIBIT POST-EMPLOYMENT AGREEMENTS, Senate Bill 11 (Blessing, Demora)	To prohibit agreements that restrain engaging in a lawful profession or business after the conclusion of an employment relationship.	<u>Status:</u> 3/5/2025 - Senate Judiciary, (3rd Hearing)
REGARDING DEBARMENT-STATE VENDORS, Senate Bill 76 (Hicks-Hudson, Demora)	Regarding the debarment of state vendors.	<u>Status:</u> 3/12/2025 - Senate Judiciary, (1st Hearing)
MAKE CHANGES-PUCO NOMINATING COUNCIL, PROCESS, Senate Bill 99 (Hicks-Hudson, Demora)	To make various changes to the Public Utilities Commission nominating council & nomination process.	<u>Status:</u> 3/5/2025 - Senate Public Utilities, (1st Hearing)
REGULATE CARBON CAPTURE, STORAGE TECHNOLOGY, Senate Bill 136 (Schaffer, Chavez)	To establish a process to regulate carbon capture & storage technologies & the geologic sequestration of carbon dioxide for long-term storage.	<u>Status:</u> 3/19/2025 - Referred to Committee Senate Energy

* This is a partial list of the bills that NSPE-Ohio is tracking in the 136th Ohio General Assembly.

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