

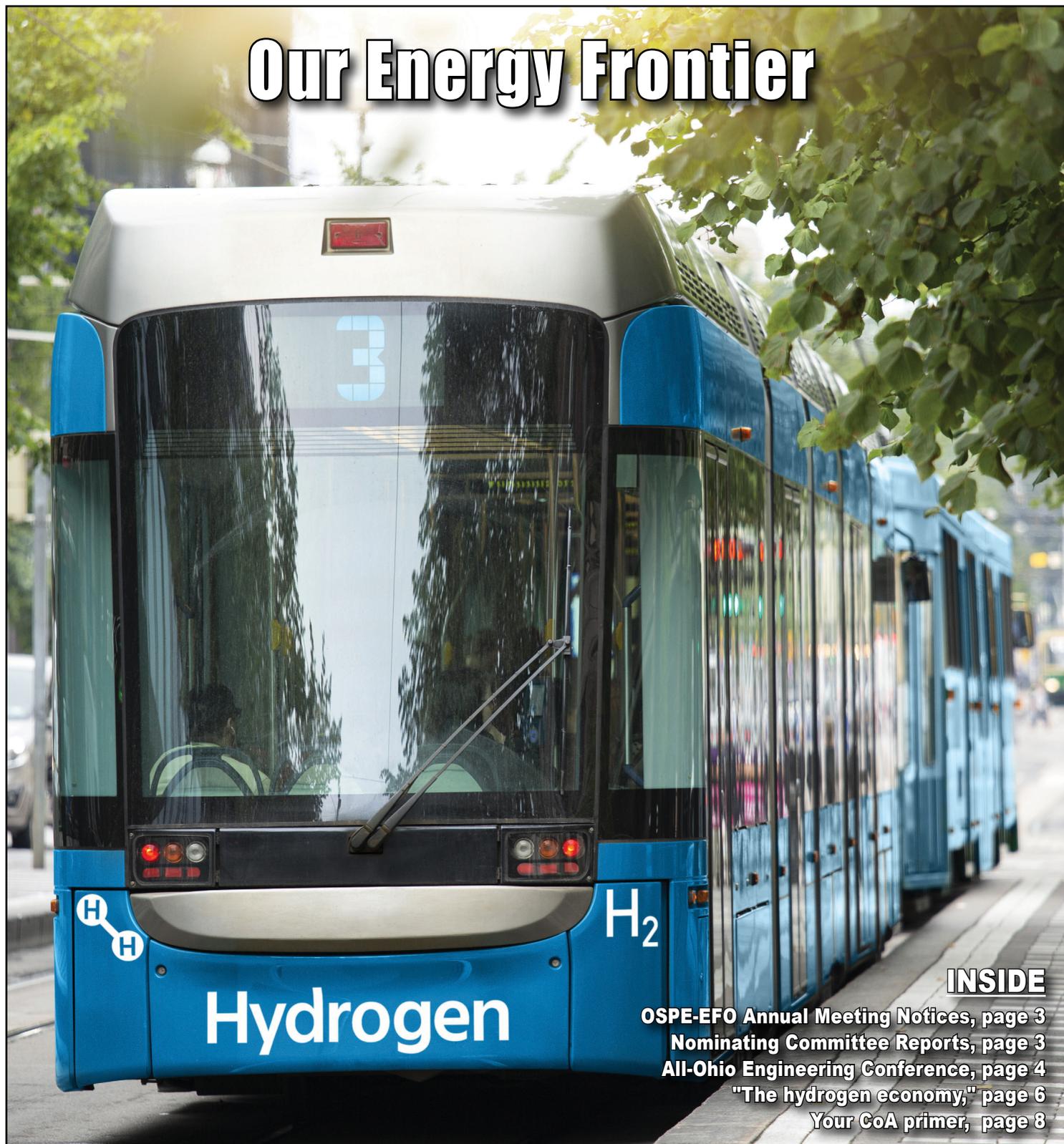
# OhioENGINEER

Volume 82/Issue 1

The Official Publication of the Ohio Society of Professional Engineers

2022

## Our Energy Frontier



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The Ohio Engineer (ISSN 0194-9276) is published quarterly by the Ohio Society of Professional Engineers. **Postmaster:** Send address changes to Ohio Engineer, 400 South Fifth Street, Suite 300, Columbus, OH 43215. Annual subscription rate \$25 (included in OSPE membership dues). The Ohio Society of Professional Engineers is not responsible for the authenticity or accuracy of information provided herein. Published opinions and statements do not necessarily reflect the opinion of OSPE. Products and services advertised, other than those offered as OSPE member benefits, do not carry the endorsement of OSPE. Publisher reserves the right to decline any advertisement that is deemed inappropriate. The sales representative for Ohio Engineer does not have final authority to determine whether an advertisement may be placed in Ohio Engineer. The ultimate determination as to the appropriateness of any advertisement is subject to the discretion of the OSPE Public Relations Committee and the publisher acting in accordance with the guidelines established by OSPE.

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## LEADERSHIP VIEWS

by Chett Sieftring, PE, President,  
Ohio Society of Professional Engineers



# Tell your story!

Over the past several years I have had conversations with many folks across various engineering disciplines about professional engineering licensure and what OSPE does to protect the PEs who are registered in Ohio.

I have been astonished at how many people do not realize the importance and value professional licensure brings to the table! Several people I have spoken with made comments like these:

- "I work in an engineering job that historically does not require licensure. Why would licensure be a benefit to me?"
- "My company doesn't value licensure as being important to advancement, why should I?"
- "Being licensed only means I can be sued when I make a mistake."
- "I have been doing this for 20 plus years; I don't need a license to tell me I know what I am doing."
- "I have an engineering degree; isn't that the same as being licensed?"

As we know, these thought processes are misguided and in error. Forward-thinking people like you, our OSPE member, can combat misinformation and share the importance and value of professional licensure.

**Share, both far and wide, our vital message: PE licensure is important and valuable!** Thanks to your support as a member, OSPE works daily to impart this message to help individual engineers thrive, help the engineering profession grow in strength and respect, and help the public stay safe. But there's nothing like a personal connection! You can be an active participant in sharing this message – right in your community. Encourage graduate engineers to get

their PE license by reminding them of the benefits:

- "You will be recognized as knowledgeable, and perhaps as an expert, in your field."
- "PE licensure sets you apart from your unlicensed colleagues."
- "Professional licensure may help with advancement within your firm or make you more attractive to others in the industry."
- "Public perception of individuals with a professional license is generally greater than those without a professional license."

**Next, tell your story!** I am sure you have your own story about how getting licensed was important to you and the value that professional licensure has brought to you. Tell your PE licensure story to graduate engineer friends/colleagues and engineering students. Share the important reasons *why* you got your PE license and the value it has brought to you in your career. Explain your *passion* for being a licensed PE.

**Finally, follow up with how OSPE supports and protects PEs and their work.** Let those graduate engineers and students know that OSPE mobilizes to support bills that strengthen the value of licensure and oppose bills that have a negative impact on licensure or that harm a PE's ability to make the best decisions possible for a project, client, and the public health, safety and welfare.

I call on you: Share your stories with at least one person each year and explain how OSPE is helping protect PEs. It's a great way to share the importance of the license and the important work OSPE does to protect that license. Thank you in advance for getting your story and our vital message out!

### On the cover:

Hydrogen powered public transit vehicles are already in service in some regions. Tangible benefits include elimination of diesel particulate emissions.

**See feature article, "The hydrogen economy: Opportunities for Midwest leadership," page 6.**



# Ohio members are NSPE leaders

The Ohio Society of Professional Engineers (OSPE) is proud of its members who have assumed leadership roles in the National Society of Professional Engineers:

**Committee on Policy & Advocacy**

Howard R. Jones, PE, F.NSPE, Member  
Jeffrey S. Kennedy, PE, Member

**Honor & Awards Committee**

Sara Deem, PE, Chair  
Joseph P. Cherry, PE, F.NSPE, Member

**House of Delegates**

Kevin M. Ernst, PE, Ohio Delegate  
Dennis Irwin, PE, FNSPE, PhD, Interest Group Delegate

**NICET Board of Governors**

Randall Stanton Over, PE, Professional Engineer Member

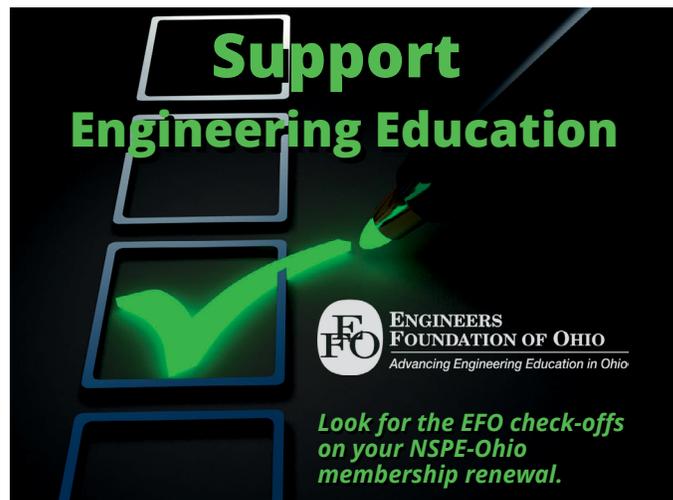


Thank you also to these OSPE members for using the NSPE Advocacy Center to weigh in on federal policy:

Laurell Adams, Kendall Bales, Al Barkaloiw, Christopher Baulieu, Dan Beasley, Steven Bergman, Cory Bittner, William Brake, Juliet Cooper, Henry Dammeyer, Sara Deem, Vinod Dega, Dave Dexter, Thomas Downey, Matt Dreyfuss, Jimmy Eavenson, Sr., Larry Fast, Mike Ferncez, John Fliehman, Bob Fuller, Harold Hawkins, Kyle Hendershot, Arthur Hunkele, Steve Hunt, Dennis Irwin, Rich Irwin, Howard Jones, Awald Langenfeld, Pete Lungulow, Mark Maly, Carol Manda, Kenneth Marshall, Michael McGlinchy, Jim Montgomery, Dean Niese, James Olsavsky, Ken Oostman, Christopher Owen, Robert Painter, Donald Phillips, Lee Rausch, Nicholas Sams, Stephen Schnugg, J. Sovis, Stancho Stanchev, Ed Tatman, Fred Tito, Mike Toole, David Tschantz, William Turner, James Voegele, Michael Walsh, Richard Wand, Joe Warino, William Young, & Steve Zetts.

## New ethics cases are published

NSPE's Board of Ethical Review has published six new case studies that provide engineering ethics guidance using fact-based scenarios. The cases cover plan stamping; gifts; the public health, safety and welfare; conflicts of interest; responsible charge; and job qualifications. For more information, visit <https://www.nspe.org/resources/ethics/board-ethical-review> (member login is required) or call 1-888-285-NSPE.



## NSPE & states defend the profession

NSPE and state affiliates have been working to keep PE licensure strong and avoid conflicts of interest.

**Defending the engineer title in Washington**

The Washington Society of Professional Engineers is considering an amicus brief in support of a challenge to non-compliant use of the title, "engineer," by the Washington Department of Transportation.

**ARPL confirms Louisiana citizens care about licensure**

The Alliance for Responsible Professional Licensure, a coalition co-founded by NSPE, has conducted a survey in which Louisiana voters offered their opinions about recent legislative pushes to reduce or eliminate professional licensure in the state. Ninety-one percent of Louisiana voters confirmed that they believe it is important that licensing systems keep consumers and the public safe by establishing standards for professions that impact public health and safety. In addition, 91 percent of voters felt it is important that licensing systems ensure that competent, qualified professionals are servicing the public. Eighty-nine percent of voters would be "concerned" if Louisiana eliminated minimum qualifications for engineers, architects, landscape architects, surveyors, and CPAs.

**Michigan legislation that builds in conflicts of interest**

A Michigan bill would change the requirement that a school district hire a PE/architect to review design plans and specifications and oversee construction activities by allowing a "design-builder" to offer design professional services if the design-build firm employs a licensed architect or engineer. This would place the PE/architect squarely in conflict between duties to the design-builder and duties to the owner. NSPE-MI has triggered an advocacy campaign in opposition, due to the inherent loss of independence when the design-builder is controlling the engineer.



## WELCOME, NEW MEMBERS

Welcome to these new NSPE-Ohio members from January 7 through May 4, 2022:

**Akron District Chapter**

Andrew M. Hubbard  
Heather Nicole Richmond  
Bryce Schneider

**Maumee Valley Chapter**

Nicholas Gutierrez  
Scott Strahley, PE

**Northeast Chapter**

David C. Hickin  
Ryan Leach  
Randall C. Tonelli, Jr., EI

**Canton Regional Chapter**

Steven D. Hamit, PE  
Johnathan Michael Stevens

**Dayton Chapter**

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Trevor Jones  
Steven Joseph Neltner, EI

**Franklin County Chapter**

Kamran Ali, PE  
Matthew Ayers  
Stanley C. Bovid  
Andrew Karsten, PE  
Christopher Weaver, PE

**Member At Large**

Bangxing Ren

# OSPE & EFO slates are announced for June 9 elections at Annual Meetings

Kevin Ernst, PE, the Ohio Society of Professional Engineers (OSPE) Nominating Committee chair, and Richard Miller, PE, 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 2022-2023.

The OSPE Annual Member Meeting, the EFO Annual Member Meeting, and the joint OSPE-EFO Installation Ceremony will all take place in person on Thursday, June 9, 2022, at the **Hilton Columbus at**

**Easton** (3900 Chagrin Drive, Columbus, Ohio 43219) as part of the All-Ohio Engineering Conference.

Elections for the OSPE positions shall be held at the OSPE Annual Meeting on Thursday, June 9, 2022, at 1:30 p.m. All OSPE members are invited. No registration fee is required of members to attend the OSPE Annual Meeting.

Elections for the EFO positions shall be held at the EFO Annual Meeting on Thursday, June 9, 2022, at 2:30 p.m. All

EFO members are invited. No registration fee is required of members to attend the EFO Annual Meeting.

The joint Installation Ceremony will be held as a part of the Presidents' Party on Thursday, June 9, 2022, at 4:00 p.m. A \$40 registration fee will cover both the Presidents' Party (heavy hors d'oeuvres) and the Awards Program (lunch) earlier in the day. Register online at [www.OhioEngineer.com](http://www.OhioEngineer.com), or use the registration form on page 5 of OhioEngineer magazine.

## OSPE Board of Directors Slate for 2022-2023

<u>Executive Committee</u>	<u>Position</u>	<u>Term Exp</u>	<u>Chapter</u>
Travis Rhoades, PE.....	President .....	2023.....	Toledo
Dennis Irwin, PhD, PE, FNSPE ..	President-Elect .....	2023.....	Buckeye
Chett Sieftring, PE .....	Past President .....	2023.....	Northeast
Howard Jones, PE, FNSPE..	Secretary .....	2024.....	Franklin County
Dustin Doherty, PE .....	VP Membership .....	2024.....	Franklin County
Aurea Rivera, PE, PMP ...	VP Education.....	2023.....	Dayton
Travis Rhoades, PE.....	NSPE Delegate .....	2024.....	Toledo

### Voting Director

James Burke, EI .....	Young Engineer .....	2023.....	Toledo
Richard Henry, PhD, PE .....	PAC Chair .....	2023.....	Dayton

### Chapter Directors

Jared Alexander, PE .....	2023.....	Akron
Dennis Irwin, PhD, PE, FNSPE .....	2023.....	Buckeye
Jeff Kennedy, PE .....	2023.....	Canton
Jim Montgomery, PE .....	2023.....	Dayton
Tina Sutermeister, PE, FNSPE.....	2023.....	Franklin County
Terry McClain, PE .....	2023.....	Lorain
Joe Warino, PE, PS, FNSPE .....	2023.....	Mahoning
.....	2023.....	Maumee
Chett Sieftring, PE .....	2023.....	Northeast
Tony Grgas, PE .....	2023.....	Southwest Ohio
Frederick Tito, PE, FNSPE .....	2023.....	Toledo
Don Quicksall, PE.....	2023.....	Tuscarawas

### Nonvoting Directors

.....	Chair, State Auxiliary .....	2023
.....	Student Council Pres .....	2023

## EFO Board of Trustees Slate for 2022-2023

<u>Executive Committee</u>	<u>Position</u>	<u>Term Exp</u>	<u>Chapter</u>
Aurea Rivera, PE, PMP ...	President .....	2023.....	Dayton
Tina Sutermeister, PE, FNSPE...	President-Elect .....	2023.....	Franklin County
Rodney Wilson, PE.....	Past President .....	2023.....	Tuscarawas
Jim Montgomery, PE .....	Secretary .....	2024.....	Dayton
Travis Rhoades, PE.....	OSPE President .....	2023.....	Toledo

### Chapter Trustees

Jared Alexander, PE .....	2023.....	Akron
Dennis Irwin, PhD, PE, FNSPE.....	2023.....	Buckeye
Jeff Kennedy, PE .....	2023.....	Canton
Jim Montgomery, PE .....	2023.....	Dayton
L. Steve Day, PE, FNSPE .....	2023.....	Franklin County
Terry McClain, PE.....	2023.....	Lorain
Joe Warino, PE, PS, FNSPE .....	2023.....	Mahoning
.....	2023.....	Maumee
Chett Sieftring, PE .....	2023.....	Northeast
Richard Miller, PE .....	2023.....	Southwest Ohio
Frederick Tito, PE, FNSPE .....	2023.....	Toledo
Don Quicksall, PE.....	2023.....	Tuscarawas

# 2022 ALL-OHIO ENGINEERING CONFERENCE

# Onward & Upward

June 9: Hilton Columbus at Easton  
June 10-11: Twelve Virtual CPD Hours



PRESENTED BY  
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OHIO SOCIETY  
OF PROFESSIONAL  
ENGINEERS

## WELCOME

Join us for the **2022 All-Ohio Engineering Conference**. This conference includes in-person meetings (June 9) & 12 virtual CPD hours (June 10-11). Enjoy socializing & compelling, quality seminars & state-mandated professional ethics education.



### DAY 1

## THURSDAY - JUNE 9 - HILTON COLUMBUS AT EASTON

- OSPE-EFO Past Presidents' Meeting . . . . . 10:00 – 11:00 a.m.
- Awards Program (includes lunch) . . . . . 11:30 a.m. – 1:00 p.m.
- Ohio Society of Professional Engineers (OSPE) Annual Meeting . . . . . 1:30 – 2:30 p.m.
- Engineers Foundation of Ohio (EFO) Annual Meeting . . . . . 2:30 – 3:30 p.m.
- Presidents' Party with Joint OSPE-EFO Installation Ceremony & heavy hors d'oeuvres . . . . . 4:00 – 6:00 p.m.

### DAY 2

## FRIDAY - JUNE 10 - VIRTUAL CPD

- Diversity Leads to Better Engineering (1.0 CPD Hour) . . . . . 8:30 – 9:30 a.m.  
*Zweig Group: Jamie Claire Kiser, JD, MBA, Managing Partner, Chad Clinehens, PE, MBA, CEO, & Christy Zweig Niehues, MBA, Director, Research & E-Commerce*
- Multi Criteria Decision Analysis (1.0 CPD Hour) . . . . . 9:45 – 10:45 a.m.  
*Gina Beim, PE, MS, MBA, Founder & President, MCDA Consulting*
- EV 101 (1.0 CPD Hour) . . . . . 11:00 a.m. – 12:00 p.m.  
*Luke Stedke, MPA, Managing Director, Communications & Policy, DriveOhio*
- Ohio Requirements for Engineering & Surveying Firm Licensure (1.0 CPD Hour) . . . . . 12:30 – 1:30 p.m.  
*John Greenhalge, MBA, Executive Director, State Board of Registration for Professional Engineers & Surveyors*
- Landslide Stabilization with Deep Foundation Elements (1.0 CPD Hour) . . . . . 1:45 – 2:45 p.m.  
*Sebastian Lobo-Guerrero, PhD, PE, Geotechnical Project Manager/Laboratory Manager, AGES Inc.*
- Optimizing for Phosphorous Removal in Wastewater Treatment Plants (1.0 CPD Hour) . . . . . 3:00 – 4:00 p.m.  
*Jon van Dommelen, PE, Environmental Specialist, Ohio EPA Compliance Assistance Unit*

### DAY 3

## SATURDAY - JUNE 11 - VIRTUAL CPD

- Intel, Flying Cars & the Electrification of Everything (1.0 CPD Hour) . . . . . 8:30 – 9:30 a.m.  
*Glenn Richardson, MBA, Masters in Mechanical Engineering, Managing Director, Advanced Manufacturing & Aerospace, JobsOhio*
- Ohio University's Road to Net Zero (1.0 CPD Hour) . . . . . 9:45 – 10:45 a.m.  
*Elaine Goetz, PhD, EIT, CEM, LEED AP O&M, Director of Energy Management & Sustainability, Ohio University*
- Teaching Engineering Ethics (1.0 CPD Hour) . . . . . 11:00 a.m. – 12:00 p.m.  
*Deb McAvoy, PhD, PE, PTOE, Associate Professor, Department of Civil Engineering, Russ College of Engineering & Technology, Ohio University*
- The State of Ohio: A National Leader in Flight (1.0 CPD Hour) . . . . . 12:30 – 1:30 p.m.  
*Dennis Andersh, MSEE, CEO & President, Parallax Advanced Research*
- Water & Wastewater Infrastructure Funding Opportunities Through the IJA (1.0 CPD Hour) . . . . . 1:45 – 2:45 p.m.  
*Jerry Rouch, Deputy Director for Infrastructure Funding, Ohio Environmental Protection Agency*
- The Ohio Ethics Law: A Deeper Study (1.0 CPD Hour) . . . . . 3:00 – 4:00 p.m.  
*Susan Willeke, Training & Communications Manager, Ohio Ethics Commission*



Glenn Richardson,  
MBA, MME



# ALL-OHIO ENGINEERING CONFERENCE

## JUNE 9-11, 2022

### REGISTRATION FORM

Name \_\_\_\_\_

OSPE/NSPE Member?  No  Yes, Member # \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

Preferred E-Mail (required) \_\_\_\_\_

DayPh # \_\_\_\_\_ Mobile # \_\_\_\_\_

Emergency Contact \_\_\_\_\_ Ph # \_\_\_\_\_

Registration Fees	OSPE/NSPE Member 30% discount	Nonmember
Thursday Annual Meetings	<input type="checkbox"/> No Cost	
Thursday Awards Program & Presidents' Party:	<input type="checkbox"/> \$40	<input type="checkbox"/> \$57
Friday & Saturday CPD	<input type="checkbox"/> \$199	<input type="checkbox"/> \$286
Friday-Only CPD	<input type="checkbox"/> \$114	<input type="checkbox"/> \$164
Saturday-Only CPD	<input type="checkbox"/> \$105	<input type="checkbox"/> \$151
	Subtotal \$ _____	
	If postmarked after <b>Fri., June 3</b> , add 20% \$ _____	
	Total \$ _____	



### Payment Options

Check (payable to Ohio Society of Professional Engineers)

Or  VISA  MasterCard  AMEX Exp. Date: \_\_\_/\_\_\_/\_\_\_

Account # \_\_\_\_\_

Cardholder Name: \_\_\_\_\_ Security Code: \_\_\_\_\_

Signature: \_\_\_\_\_

Billing Address: \_\_\_\_\_

Billing City, State & ZIP: \_\_\_\_\_

### Registration Information

#### Three Easy Ways to Register

1. Register online at [OhioEngineer.com](http://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 OSPE & EFO Annual Meetings are free to their respective members.

#### How You Will Benefit

This OSPE 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](mailto:edfunds@das.ohio.gov).

#### Seminar Handouts

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

#### Conference Cancellation Policy

Registrants may withdraw from the All-Ohio Engineering Conference with full refund less a \$75 processing fee provided OSPE is notified in writing no later than Friday, June 3, 5:00 p.m. After that time, registrants are responsible for the full registration fee.

#### Continuing Professional Development Hours

OSPE 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. OSPE programs are also designed to comply with the law in KY, NC and WV. Be sure to consult those state's licensing authorities. The program also meets CPD requirements in many additional states. 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 this program. Be sure to respond to the attendance verification questions so your attendance may be verified in case you are audited by the State. Continuing Professional Development certificates will be emailed after the program.

#### Sponsorship Opportunities Are Available

For information, including details on complimentary registration benefits, download OSPE's 2022 Sponsorship Kit at [www.OhioEngineer.com](http://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. Substitutions of attendees may be made by the June 3 registration deadline although nonmember differential rates will apply if a nonmember replaces a member.

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

by University of Toledo College of Engineering faculty:  
Patricia Relue, PhD, Associate Dean for Research & Graduate Studies,  
and Constance Schall, PhD, Associate VP of Research



THE UNIVERSITY OF  
TOLEDO

# The hydrogen economy: Opportunities for Midwest leadership

In 1973, in the midst of “the world energy crisis,” *Scientific American* published an article titled, “The Hydrogen Economy.”<sup>1</sup> In this article, significant expansion of the US nuclear fleet for electricity generation was anticipated, predominantly by nuclear breeder reactors. Hydrogen was put forward as a universal energy molecule, providing storage to buffer the geographic and temporal differences between electricity demand and supply. While the projected nuclear expansion has not been realized, the energy landscape has shifted towards low carbon dioxide (CO<sub>2</sub>) emitting, renewable energy sources such as wind and solar.

The U.S. nuclear fleet supplies base-load electrical energy with near zero emissions of CO<sub>2</sub> and criteria pollutants for industrial, commercial, and residential use. The significant expansion of solar and wind energy and the intermittent influx of renewable electricity into the grid during times of peak demand have generally reduced electricity cost during peak hours. While beneficial to the consumer, the flattening of the electricity cost-curve has posed an economic dilemma for nuclear facilities that provide a continuous, reliable, fixed-cost baseload of electricity to the grid.

Given the challenges that renewables-integration into the grid pose to base-load electricity production, especially nuclear electricity, the potential of using hydrogen as an electrical energy storage molecule remains attractive. Hydrogen produced for energy storage can be used as a non-polluting, combustible fuel for electricity production on demand, but even more appealing is its significant value as a feedstock molecule for many chemical and industrial processes.

## What are common uses for hydrogen?

Hydrogen is the simplest element known and the most abundant element in the universe. When combusted with oxygen, water is the sole combustion

product. Hydrogen has been widely used for decades as an industrial commodity with a US annual production of approximately 10 million metric tonnes.<sup>2</sup> Hydrogen is a key ingredient in products that most people encounter or use daily.

Industrially, hydrogen is used in petroleum refining to saturate double bonds in alkenes and aromatics and remove impurities such as sulfur and nitrogen. Direct combination of hydrogen with nitrogen to make ammonia via the Haber-Bosch process has been the industrial standard for over a century; ammonia is itself a precursor commodity for fertilizer, pharmaceuticals, and cleaning products. Hydrogen is also used in production of cosmetics, methanol, and for the direct reduction of iron (DRI) in steel making.

Since the afore-mentioned *Scientific American* article was published, global demand for hydrogen has grown by 10-15 percent annually.<sup>3</sup> Global demand in 2018 for pure hydrogen (primarily oil refining and ammonia production) was approximately 70 million tonnes (Mt) H<sub>2</sub>/yr with an additional 45 Mt H<sub>2</sub>/yr used primarily for methanol and DRI without prior separation from other gases.<sup>4</sup>

## How is hydrogen produced?

The most common method of producing hydrogen is through steam methane reforming (SMR) by reacting natural gas (methane) with high temperature steam. For every four molecules of hydrogen produced, one molecule of carbon dioxide (CO<sub>2</sub>) is produced through the reaction stoichiometry, or 5.5 kg CO<sub>2</sub> per kg H<sub>2</sub>. When CO<sub>2</sub> generated from heating in the SMR furnace (endothermic reaction) is included, the total CO<sub>2</sub> is closer to 9 kg CO<sub>2</sub> released/kg H<sub>2</sub> produced.<sup>5</sup>

Based on the CO<sub>2</sub> equivalents (CO<sub>2</sub>e) generated during production, hydrogen can be colored as an indicator of “green-ness.” Hydrogen produced by SMR is often dubbed “grey” hydrogen. “Brown” hydrogen uses coal as a

starting material instead of natural gas. Brown or grey hydrogen can be upgraded to “blue” hydrogen by capturing CO<sub>2</sub> produced and storing in geological formations. Geological storage is not trivial since not all soils and rocks can stably lock up the CO<sub>2</sub>. Transporting CO<sub>2</sub> to the storage site may also include a CO<sub>2</sub>-producing energy input.

“Green” hydrogen produced by electrolytic water splitting generates only hydrogen and oxygen. Electrolysis require electrical energy input and is only truly green (and clean) if the energy source itself does not generate CO<sub>2</sub>. Operationally, green energy sources include solar, wind, hydroelectric, and nuclear.

Electrolytically-produced hydrogen is extraordinarily pure and suitable for fuel cell applications with little to no further purification steps. This contrasts with hydrogen produced from methane that requires additional steps and energy input to achieve high purity.

Electrolysis technologies differ primarily in the electrolyte used in the electrochemical cell and in the ionic charge carrier (H<sup>+</sup>, OH<sup>-</sup>, or O<sup>2-</sup>) that electrically closes the electrochemical process. Alkaline electrolysis of water has been in commercial use for more than 30 years. Proton-exchange membrane (PEM) electrolyzers use a cation-selective membrane for separation of protons from electrons and are also in commercial use. Solid oxide electrolyzers under development have the potential to increase hydrogen production efficiency by high temperature operation using waste heat integration to increase thermodynamic efficiency.<sup>6</sup>

Clean hydrogen can significantly reduce CO<sub>2</sub> emissions and facilitate industrial decarbonization, but a roadmap must be developed and demonstrated for the commodity-scale, economical production of clean hydrogen. Given geographic variations in energy sources, hydrogen purity needs and demands, and geologic storage potential for CO<sub>2</sub> and/or H<sub>2</sub>, this roadmap

## FEATURE: OUR ENERGY FRONTIER

will likely take on local character while relying on global principles.

### The Department of Energy (DOE) H2@Scale program

The DOE has recently launched an ambitious clean-hydrogen initiative, Hydrogen Earth Shot,<sup>7</sup> aimed at “enabling the large-scale production, delivery, storage and use of hydrogen across multiple sectors, to drive revenue opportunities, reduce costs, and reduce emissions.” The goal of this initiative is to reduce the cost of hydrogen to \$1 per 1 kg in 1 decade.<sup>8</sup>

The ultimate goal of the H2@Scale program is the drastic reduction in cost for clean hydrogen for end-users, made possible through advances in production methods but also infrastructure investments that reflect and support the local supply and demand landscape (Figure 1). Co-location of production with end users is one strategy to help drive cost reductions and help businesses and regions achieve decarbonization goals.

The DOE is planning significant investments through the Infrastructure Investment and Jobs Act<sup>9</sup> for clean hydrogen deployment, envisioned by establishing several clean hydrogen hubs across the US. Funded at a level of \$8B, the 4-6 selected hydrogen hubs would invest in regional hydrogen infrastructure – such as electrolyzers, pipelines, or storage systems – to reduce the cost of hydrogen production and expand its availability to demand centers.

### What does this mean for the U.S. & Ohio?

Development of local hydrogen infrastructure can have wide-ranging benefits for industrial users and the transportation sector with resultant impactful improvement in the environmental health of communities. Ohio and the Midwest region is home to key industries with large current hydrogen demands and decarbonization needs. These industries include steel producers such as Cleveland Cliffs, refineries such as Marathon and BP, and ammonia producers such as Nutrien. In our geographic location, nuclear electricity, supplemented with solar, will serve as low carbon sources of electricity for clean hydrogen generation through electrolysis.

Hydrogen fuel-cell powered forklifts are expanding both at US ports and in warehousing facilities to reduce or eliminate outdoor and indoor air pollution. PlugPower is planning hydrogen facilities to co-locate hydrogen production and fuel cell demand centers.<sup>11</sup> Stark County Regional Transportation Authority (SARTA) is using hydrogen fuel cell buses for public transit, significantly reducing both greenhouse gas and diesel particulate emissions. As a state with major transportation corridors, buildout of hydrogen fueling stations as part of the hydrogen infrastructure can expand these benefits to long-haul trucking.

The University of Toledo is working in partnership with regional industry,

Idaho National Laboratory (and other DOE National Laboratories), and academic partners such as Case Western Reserve University to identify sources of low carbon electricity and assess current and projected hydrogen demand. This coalition will compete for establishment of a

Midwest Nuclear Hydrogen Hub under the Infrastructure Investment and Jobs Act. Formation of this Hydrogen Hub will ensure that Ohio and the Midwest are established leaders in the transition to a hydrogen economy.

### About the authors

**Patricia Relue, PhD, is a bioengineering engineering professor and associate dean for research and graduate studies in the College of Engineering at the University of Toledo. She has worked with regional partners to deliver two workshops on hydrogen production and the regional hydrogen economy. Her research is focused on biomass-based renewable fuels and products.**

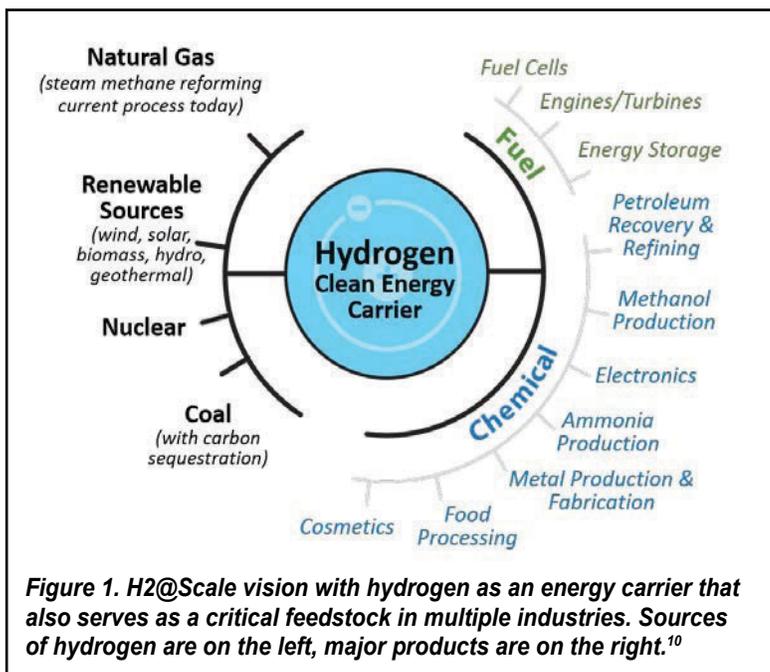


**Constance Schall, PhD, is associate VP for research at the University of Toledo and a chemical engineering professor. She has worked on connecting industrial, academic and national lab partners to advance the University's and region's role in an emerging hydrogen economy. Her research has focused on separations and biomass deconstruction.**



### Citations

- <sup>1</sup> “The Hydrogen Economy,” Derek P. Gregory, *Scientific American*, 22(1):1-21, January 1973, <https://www.jstor.org/stable/10.2307/24922952>.
- <sup>2</sup> DOE record # 16015, [https://www.hydrogen.energy.gov/pdfs/16015\\_current\\_us\\_h2\\_production.pdf](https://www.hydrogen.energy.gov/pdfs/16015_current_us_h2_production.pdf)
- <sup>3</sup> IEA, Global demand for pure hydrogen, 1975-2018, IEA, Paris, <https://www.iea.org/data-and-statistics/charts/global-demand-for-pure-hydrogen-1975-2018>.
- <sup>4</sup> Ibid.
- <sup>5</sup> <https://www.nrel.gov/hydrogen/h2a-production-models.html>
- <sup>6</sup> Renewable Hydrogen Technologies - Production, Purification, Storage, Applications and Safety, Elsevier, 2013, Chapter 2 - Water Electrolysis Technologies, P. Millet and S. Grigoriev, p.19-41, <https://doi.org/10.1016/B978-0-444-56352-1.00002-7>.
- <sup>7</sup> DOE, <https://www.energy.gov/eere/articles/five-things-you-might-not-know-about-hydrogen-shot>
- <sup>8</sup> Ibid.
- <sup>9</sup> <https://www.congress.gov/bill/117th-congress/house-bill/3684/text>
- <sup>10</sup> Department of Energy, Hydrogen & Fuel Cells Office, H2@Scale: Enabling affordable, reliable, clean and secure energy across sectors, <https://www.energy.gov/sites/default/files/2020/07/f76/hfto-h2-at-scale-handout-2020.pdf>
- <sup>11</sup> <https://www.axios.com/plug-power-taps-abb-for-300m-hydrogen-plants-04ae46bc-dcd5-4db4-b10b-45483246e8ec.html>



# CoAs: How Ohio & firms work together to safeguard the public

## Plus, how to do your CoA the right way

With Ohio Certificate of Authorization (CoA) license renewals due this summer, OSPE interviewed State Board of Registration Executive Director John Greenhalge to help members learn all they need to know to keep in compliance with Ohio's regulations. OSPE's questions and Greenhalge's responses follow below:

### Why do we need an Ohio CoA law?

"Public protection – that's it," said Greenhalge.

"It's not a money grab from the State Board," Greenhalge continued pointing out that Ohio has the lowest fees in the country. "And it's not to burden licensees with an additional requirement. The CoA exists *strictly* to protect the public. We do that by making sure that engineering and surveying firms are being run and managed by registered engineers and surveyors."

"Our mission is to protect the health, safety and welfare of the public."

"From my perspective," Greenhalge said, "the PE license exists to ensure that the individual is at least minimally qualified to do the work – that they've got the education, experience and examinations. It's a designation to let the public know that the engineer is qualified to do the work for the public."

Greenhalge continued, "The CoA is broader and covers the whole firm. It is a company license – a safeguard to ensure that the firm or entity is performing in accordance with Ohio law. It puts mechanisms in place to ensure that the entire firm is acting ethically and performs its work in a manner that protects the public."

### Who needs an Ohio CoA?

"Any individual or firm offering engineering or surveying services to the public *must* obtain an Ohio CoA from the State Board of Registration," said the Board's Executive Director John Greenhalge.

It was about 15 years ago, Greenhalge said, when the Ohio Attorney General's representative to the State Board of Registration advised the Board that in Ohio a sole proprietor would fall under the definition of firm and require a CoA.

A company that is engaged in the design and fabrication of a manufactured product, falls under the industry exemption, and some government agencies are exempt, too, Greenhalge said. However, if businesses are also preparing plans for permit approval for a specific Ohio site, Greenhalge explained, then they are doing work for the public, and they need an Ohio CoA.

*"Our mission is to protect the health, safety and welfare of the public."*

– John Greenhalge, Executive Director, State Board of Registration for Professional Engineers & Surveyors

"There are instances where companies are designing manufactured products," he continued, "but they will get a CoA because they are also going to do engineering for the installation of that project for the public."

Greenhalge emphasized, "If they're offering engineering or surveying services to the public, they must have a CoA."

### What does Ohio law say?

Ohio Revised Code 4733.16 and Ohio Administrative Code 4733-39 cover all aspects of Ohio CoAs. The laws and rules cover the application, who needs it, and what's required.

Reviewing the CoA laws and rules, Greenhalge said that applicants need to know:

- who can advertise to offer engineering services and who may perform that work,
- who can and can't use terms engineering and surveying and derivations of those terms,
- the requirements for the person designated to be in responsible charge of engineering (or surveying services) activities and decisions for the firm,
- the renewal requirement, and
- their responsibilities should there be any changes to the firm ownership or with the person in responsible charge of engineering (or surveying).

In reference to the last point, firms that lose their person in responsible charge must immediately cease offering engineering/surveying services and notify the State Board of Registration within 90 days.

In addition, Greenhalge explained that firms in violation of Ohio's CoA laws could end up in legal entanglements and possible fines, beyond the State Board of Registration's disciplinary actions.

"I have recently been contacted by five attorneys that are either pursuing, or in the middle of, litigation because an engineer or engineering firm provided engineering on a project while their license was expired or inactive. This will probably cause more headaches and expense to the licensee than any Board action – and could have been avoided."

And there may be unrealized consequences on the horizon for others. Greenhalge relayed that in one recent case the State Board of Registration disciplined a firm that practiced for three years on 350 projects while the firm's CoA was expired. As part of the disciplinary action, the State Board of Registration required that the firm must notify the project owners that the projects were performed in violation of Ohio law.

See "CoA," page 9

Greenhalge also advised, "Firms should be aware of the requirements for any state in which they practice." The Ohio CoA, he said, is only good for Ohio. Firms must have a CoA in each state they practice if those jurisdictions require a CoA.

### **What is required to be a PE (or PS) in responsible charge?**

To be in responsible charge, Greenhalge said, "You have to be a fulltime employee of the firm and working all the hours that the firm is doing engineering or surveying."

"If your engineering staff is performing engineering work for 40 hours a week, we expect that the PE is working 40 hours in responsible charge of the engineering activities and decisions. They must be in a leadership or supervisory position."

### **Can a PE be responsible for a firm's engineering activities & decisions if that PE has other employment?**

The short answer to this question is "no," but there is one exception.

To obtain a CoA, each firm is required to designate at least one of its fulltime employees who is registered in Ohio and who is a partner, manager, member, officer, or director as the person in responsible charge of engineering activities and decisions for the firm. (Which one of these designations the PE holds within the firm depends on the business' structure.)

Greenhalge explained, the PE listed as the firm's person in responsible charge of engineering cannot be a part-time employee, a consultant or someone who would report their income using an IRS 1099 Form. The purpose of the "PE in responsible charge," said Greenhalge, is to ensure that a qualified Ohio registrant who works for the firm is overseeing the engineering work that is performed by the firm's staff.

Designating a parttime employee or an outside consultant is not permitted by law. Greenhalge said that in many cases a parttime employee cannot provide the firm with the same level of supervision as a fulltime employee who is involved in the daily management of the firm and who is available to staff. Similarly, he said, outside consultants have their own firms and work to manage; usually they cannot properly supervise a firm where their involvement is sporadic.

In these scenarios, the State Board of Registration often encounters "plan stamping," a violation of Ohio law in which the PE stamps engineering documents without supervising and directing the engineering work and instead providing only a periodic or cursory review of the work.

Ohio Administrative Code 4733-39-02 defines fulltime as follows:

*"Fulltime" as stated in division (D) of section 4733.16 of the Revised Code means working more than thirty hours per week or working substantially all the engineering or surveying hours for a firm, partnership, association, limited liability company or corporation that holds a certificate of authorization.*

***"If they're offering engineering or surveying services to the public, they must have a CoA."***

– John Greenhalge

Greenhalge said, if the firm is not working a traditional work week (i.e., a business slow down or lagging economy), the engineer in responsible charge must work the same number of hours as the rest of the firm's staff.

The State Board of Registration does not like to see a firm that has unlicensed staff performing engineering work (or engineering support work) 40 hours per week while the PE in responsible charge is working only five hours per week.

Supervision may take place in the office or remotely, Greenhalge said, assuming the engineer is available to the firm's staff during the firm's hours of operation and can maintain responsibility for the firm's decisions and activities.

The State Board of Registration recently denied a CoA application from a firm whose PE in responsible charge was also employed fulltime at another firm. The PE planned to work his full-time job during the day and review the CoA applicant's work during evenings and weekends. The State Board of Registration said this is not acceptable because the engineer would not be working for the subject firm during the

hours that it is performing engineering. (Greenhalge said this becomes particularly problematic when the engineer is employed by a government agency.)

**There is one exception that the State Board of Registration may approve:** If the PE works fulltime for a firm, he may also work outside of that firm during his off hours (i.e., evenings and weekends), provided that the PE works for himself, he has no employees working while he is at his fulltime position, and his fulltime employer approves of the arrangement.

The requirements are not intended to place an additional burden on engineering firms. Instead, they exist to ensure that engineering work is being performed by PEs. This is how the State Board of Registration ensures that the public is protected.

### **When was the CoA law put into place?**

"There has been a CoA requirement in Ohio since October 21, 1959," Greenhalge said. "That's when ORC 4733.16 was enacted."

Greenhalge said that in the early 1980s the CoA law in Ohio was broadened to more closely mirror the NCEES model law for consistency with other state boards.

The current law, he said, was updated in 2005 and the rules were last updated in 2003.

"The only big change I can recall in the last 20 years is that we used to require that the firm be 51 percent owned by an engineer, surveyor or architect – depending on the type of services being offered," Greenhalge said. "We changed that in 2005 because so many companies were becoming public that the requirement was untenable and it was difficult for our firms to comply with the requirement. This is an example of why the Board regularly reviews its regulations to make sure that the requirements are up-to-date and relevant."

### **How many Ohio CoAs exist today?**

In Greenhalge's tenure of 24 years with the State Board of Registration, Ohio has seen the number of CoAs rise more than 4.3 times from 771 CoAs in 1998 to 3,324 in 2021.

While that is significant growth, Greenhalge provided data showing that the increase did not happen all at once

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or even in a couple of large leaps. In fact, the growth happened incrementally over the last 24 years. Citing the State Board of Registration's annual report to Ohio's governor, Greenhalge said the Board had: 771 firms in 1998, 912 firms in 2001, 1,440 firms in 2003, 1,941 firms in 2006, 1,970 firms in 2008, 2,195 firms in 2011, 2,694 firms in 2014, 3,162 firms in 2019, and 3,324 firms in 2021.

Greenhalge believes the steady increase in Ohio-registered engineering and surveying firms is market driven.

"Companies are working globally," Greenhalge said. "The number of CoAs grew because we've got companies from around the world doing work in Ohio. There are more opportunities in Ohio, and more businesses have been able to expand beyond their region."

"In the 1990s, our licensed firms were mostly based in Ohio and the surrounding states – West Virginia, Michigan, Indiana. We also had some firms from the larger states such as New York, Florida and Texas. But now, with the advancements in technology and communication, and the firms' ability to access new markets more easily, more companies from around the world are licensed with the Board. We have more Canadian, UK, German, and Australian companies."

Insofar as he is aware, the increased number of Ohio CoAs is not specific to Ohio alone. It's more of a national trend – one that Greenhalge attributes to companies having the ability to increase their access to new markets.

### **How educated are firms about the CoA requirements today?**

With the implementation of CPD in 2006 and the State Board of Registration being proactive in outreach (i.e., making presentations about Ohio laws and rules), Greenhalge is seeing that people are more aware of the requirement.

More firms are coming to the State Board of Registration for CoA applications rather than the Board responding

to complaints or reaching out to firms needing to come into compliance.

### **What is the most common violation of the CoA law & how is disciplinary action determined?**

In its November 2021 newsletter, the State Board of Registration published that it had taken disciplinary action in 43 cases that were closed between July 2019 and July 2021. Of those, 25 (more than half) were CoA violations, but that number is less than one percent of the firms that were registered in Ohio at that time.

"The more serious violations are down," Greenhalge said. In one serious, past case, he noted, a firm set up a shell company and used an incapacitated engineer as a figurehead to falsify documents and illegally obtain an Ohio CoA.

Today, Greenhalge said, "The main issue that we have is when a firm practices on an expired or inactive license."

## *The number one reason firms fail to renew their CoAs is simple forgetfulness ....*

"First we try to educate them. That's our top priority."

Should education fail, then the State Board of Registration turns to disciplinary action, which is determined first and foremost by the impact on the public health, safety and welfare and the seriousness of the offense. The State Board of Registration also considers the firm's intent; were they trying to break law or was it an oversight? Other considerations in the administration of disciplinary action include the frequency of violations and the duration over which they occurred. The State Board of Registration works to make sure that disciplinary actions are applied consistently

based on the actions previously taken in similar offenses.

Another problem, Greenhalge mentioned, is companies that do not have CoA licenses but offer services illegally. Sometimes they do not have the ability to get a license because they have no registrant on staff – but they offer services illegally.

"They are practicing in violation of registration act."

These companies get cease and desist letters, Greenhalge said, "or if they do not comply we can issue injunctions through the Attorney General's office and criminal charges." However, he said, this rarely happens. The vast majority comply when they read the law.

### **What are the most common reasons for failing to renew a CoA?**

The number one reason firms fail to renew their CoAs, Greenhalge said, is simple forgetfulness, and then they continue to practice without the CoA.

A second problem, he said, is that some firms that do renew fail to report disciplinary actions in accordance with Ohio's laws and rules. In other words, these firms do fill out the CoA forms online, as required, but they omit reporting disciplinary actions they have received in other jurisdictions.

Greenhalge said that these more administrative violations are remaining steady: "I don't think these lesser administrative types of violations will ever go away since they are a more the result of forgetfulness and carelessness rather than a concerted effort to skirt or violate the law."

### **What is the process for a firm to apply for or renew an Ohio CoA?**

Regardless of whether an engineering (or surveying) firm is applying for the first time or renewing, the process happens online, Greenhalge said. The State Board of Registration's CoA web portal is <https://peps.ohio.gov/firms-and-coa>.

First time applicants are directed to go to this website to complete and submit a new application online.

Conveniently, the CoA application includes "form 3012" with which the firm will designate the person in responsible charge of engineering or surveying

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work. Form 3012 is also available as a separate document for any firm that needs to change the person in responsible charge before the CoA renewal date.

Just like with the individual PE (or PS) license renewal notifications, the State Board of Registration distributes company CoA renewal notifications via email. But while individuals renew their licenses in December of odd years, firms renew their CoAs in July of even years.

Watch for State Board of Registration electronic renewal notices in May

this year. The State Board of Registration will issue reminders and late notices, too.

Virtual businesses should be advised that a physical address (an office building or home) is required for both the application and the renewal. A post office box is not sufficient. Greenhalge said that a physical address is important for protecting the public if an investigation were ever required and provides the State Board of Registration with a way to contact the firm if the need arises.

OHIO'S STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS

### Firm Affidavit of Responsibility

A separate certified Firm Affidavit of Responsibility is required for each full-time professional engineer and/or professional surveyor designated in responsible charge. Full-time employee(s) must be registered as an active P.E. and/or P.S. in Ohio and a partner, manager, member, officer, or director of the company. Full-time requirements include working more than 30 hours per week or working substantially all of the engineering and/or surveying hours for the firm that holds the certificate of authorization.

**Please upload your completed Firm Affidavit of Responsibility and any attachments to the eLicense Ohio portal.**

**1. Certificate of Authorization (COA) Number**

<< REQUIRED UNLESS NEW FIRM >> 5-DIGIT NUMBER BEGINNING WITH "0"

**2. Firm Name**  
FIRM NAME >> MUST BE SAME NAME AS ON CERTIFICATE OF AUTHORIZATION APPLICATION

**3. Ohio Registrant Designated in Responsible Charge**  
Name of Ohio P.E. and/or P.S. Designated in Responsible Charge

OHIO P.E. NO.  OHIO P.S. NO.

Check all that apply:

Director     Partner     Manager     Member     Officer

**DO NOT** have other engineering/surveying employment or provide engineering and/or surveying outside this firm.

**DO** have other engineering/surveying employment or provide engineering and/or surveying outside this firm.  
*(If you checked "DO" please submit the required information indicated below)*

If the Ohio P.E. and/or P.S. is listed on multiple COA's, has other engineering/surveying employment, and/or provides engineering and/or surveying services outside of this firm, please provide the following:

- Name of each firm or organization where you are employed.
- A description of the type of work for each place of employment.
- The number of employees employed by each business and the number of employees that will be under your direct supervision at each business.
- The number of registered professional engineers and/or surveyors employed by each business.
- The number of hours that you expect to work for each place of employment per week.
- A detailed explanation on how you will manage the engineering/surveying activities for multiple businesses.

**4. Certification and Attestation**

I, \_\_\_\_\_ [printed name], attest I am a registered professional engineer and/or surveyor in the state of Ohio as indicated above; that I am a full-time employee of the above-named firm, in accordance with Ohio Administrative Code 4733-39-02(B); that I am in responsible charge for and in charge of the professional engineering and/or surveying activities and decisions of this firm; and that I meet the requirements pursuant to Ohio Revised Code Chapter 4733 for such designation. In addition, I understand that if a temporary certificate of authorization permit is granted, it is only valid for 90 days from the date of issuance. Should the Board disapprove the firm's application for a certificate of authorization, the temporary permit shall terminate on the date of denial and the firm will cease and desist from offering or practicing engineering and/or surveying service in the state of Ohio.

SIGNATURE \_\_\_\_\_ PRINTED TITLE \_\_\_\_\_ DATE SIGNED \_\_\_\_\_

## Form 3012

**CERTIFICATE OF AUTHORIZATION**  
STATE BOARD OF REGISTRATION FOR  
PROFESSIONAL ENGINEERS AND SURVEYORS  
77 SOUTH HIGH STREET SUITE 2472  
COLUMBUS, OHIO 43215

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For an Ohio Certificate of Authorization, first-time applicants and renewal applicants alike must use Form 3012, which can be accessed at <https://peps.ohio.gov/firms-and-coa>. Watch for electronic renewal notices in May for your renewal due, July, 2022. Contact the State Board of Registration for Professional Engineers and Surveyors with any questions: 1-877-644-6364 or <https://peps.ohio.gov/help-center>.

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# Ohio Engineers Week celebrations feature awards & education

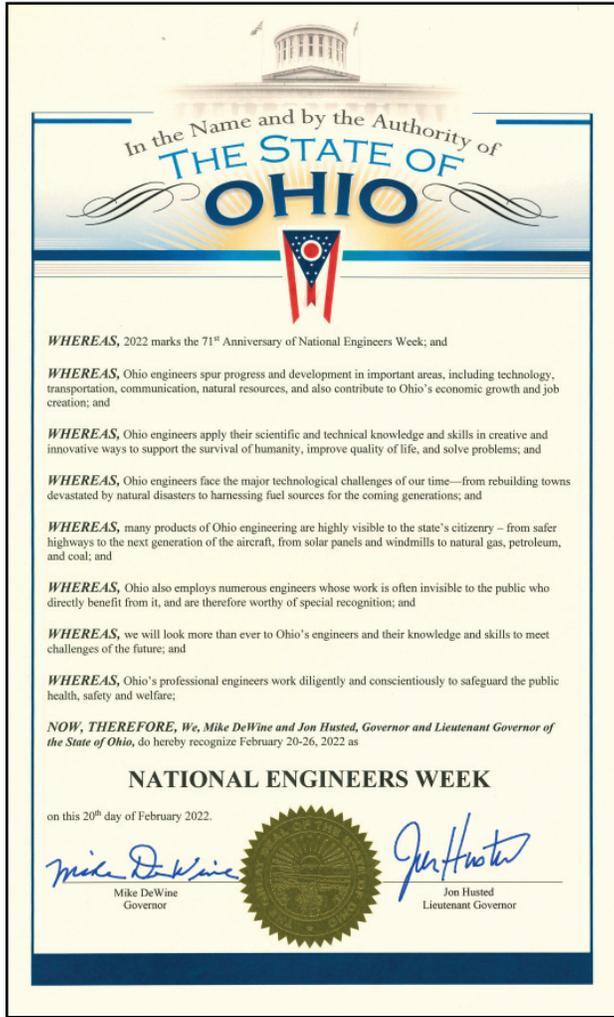
Central Ohio Engineers Week Celebration, February 24, 2022, Powell, Ohio



OSPE Past President Steve Day, PE, FNSPE, reads the Governor's and Senate commendations.



Dr. Story Musgrave, U.S. Space Shuttle & Hubble Telescope repair astronaut, presents "Excellence, Exploration & Evolution" at the Central Ohio lunch.



Governor Mike DeWine and Lieutenant Governor Jon Husted sent OSPE this commendation in recognition of Engineers Week.



OSPE Past President Kevin Ernst, PE, talks with the Central Ohio E-Week speaker, Dr. Story Musgrave, U.S. Space Shuttle & Hubble Telescope repair astronaut.



OSPE Franklin County Chapter leaders enjoy lunch together.



OSPE leaders welcome Dr. Story Musgrave, astronaut (second from right), to the Central Ohio E-Week luncheon.

**PROGRAMS**



# Legislative Day audience learns how federal infrastructure law will impact in Ohio

Ohio Engineers Legislative Day attracted a record attendance on April 22, 2022. Hundreds of PEs learned about the Infrastructure Investment and Jobs Act (IIJA) and its expected impact in Ohio.



Kevin Hoggatt, state director for U.S. Senator Rob Portman, kicked off the presentation by explaining how the bipartisan infrastructure law that passed Congress last year will benefit Ohio.



< Emily Feenstra, chief policy officer for the American Society of Civil Engineers, provided a national view on infrastructure rebuilding and funding.



David Slatzer, PE, ODOT chief engineer and assistant director, discussed Ohio transportation infrastructure rebuilding.



< Mark Bernhardt, PE, president and CEO of Burgess & Niple, spoke about the planned rebuilding of the Brent Spence Bridge.



Howard Wood, executive director of DriveOhio, talked about smart mobility programs and new EV charging infrastructure funds.



< Xuan Wu, PhD, PE, PMP, of AES discussed optimal planning of energy storage systems.



< Jason McLean, the State Board of Registration's enforcement supervisor, provided a half-hour of education on professional ethics/rules.



< Peter Voderberg, JD, chief of BroadbandOhio, talked about current and future broadband projects.



< Lobbyist Patrick Markovich of Governmental Policy Group discussed public policy impacting Ohio PEs.

## Canton Engineers Week Celebration, February 23, 2022, Canton, Ohio



CRSPE President-Elect Scott Dilling, PE, reads the Governor's and Senate E-Week commendations.



Canton Joint Engineering Council Scholarship Co-Chair Carla Giacobone presents a scholarship to Justin Ebert, a senior at the University of Akron in chemical engineering.



Seth Stevens, University of Mount Union, receives a scholarship at the Canton E-Week banquet.



Stephen Johnson of the Center for Precision Manufacturing at the University of Akron speaks on the importance for precision manufacturing and product development of highly stressed components such as bearings and gears.

THE GENERAL ASSEMBLY OF  
THE STATE OF OHIO  
OHIO SENATE

HONORING  
THE OHIO SOCIETY OF PROFESSIONAL ENGINEERS  
ON COMMEMORATING ENGINEERS WEEK 2022

On behalf of the members of the Senate of the 134th General Assembly of Ohio, we are pleased to congratulate the Ohio Society of Professional Engineers on its observance of Engineers Week, February 20-26, 2022.

It is appropriate that we acknowledge the Ohio Society of Professional Engineers during Engineers Week 2022, for this annual event offers a unique time to draw attention to the many ways in which this technical vocation has had a positive effect on our society. Indeed, the association has worked diligently to expand interest in engineering and technology-related careers, and it is deserving of high praise.

It is through the work of individuals such as all those associated with the Ohio Society of Professional Engineers that our state has gained a reputation as a friendly, productive, and pleasant place in which to live. During this year's Engineers Week, the society's members have the opportunity to reaffirm their goals and to formulate a vision to meet the challenges and responsibilities of the future.

Thus, it is with genuine applause that we salute the Ohio Society of Professional Engineers during Engineers Week 2022 and extend best wishes for continued success.

Senator Matt Hoffman  
President of the Ohio Senate

Senator Louis W. Blessing, III  
8th Senatorial District

The Ohio Senate honored OSPE with a special E-Week acknowledgment.

# OSPE offers members significant savings on workers' compensation premiums through Sedgwick

Did you know that many alternative discounts are available to help reduce your annual Ohio workers' compensation costs? Through the Ohio Society of Professional Engineers workers' compensation program, your engineering organization can significantly reduce your workers' compensation costs through a variety of alternative rating programs. Our program, administered by Sedgwick, offers you quality service and stability through the complex workers' compensation environment.

For over 50 years, Sedgwick has been helping employers navigate Ohio's workers' compensation system, providing services to help them control

claim-related costs and reduce premiums. Our team includes the experienced colleagues from CompManagement and CareWorks Comp. The two companies merged and are now Sedgwick. Together, we serve nearly 65,000 Ohio employers including organizations of all sizes operating in various industries across the state. Group rating programs administered by Sedgwick have produced over \$4 billion in savings since group rating was introduced

in 1991, and their group retrospective programs have returned over \$630 million in premium refunds since the program began in 2009.

If your organization is not yet participating in this member benefit, and you would like to receive a free, no-obligation analysis from Sedgwick, email our program manager,

Rejeana Woolum-Napier at [rejeana.woolum-napier@sedgwick.com](mailto:rejeana.woolum-napier@sedgwick.com) or 614-359-2403. Learn more at <https://tinyurl.com/WorkersCompRates-OSPE>.



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A Proud PE | P | E | Collaborative

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NSPE-OH OHIO SOCIETY OF PROFESSIONAL ENGINEERS

## Lunchtime Legislative Briefing

- Learn about policy impacting Ohio PEs
- Get the top news within 20 minutes, quarterly
- Next Briefing: June 27 @12PM

Members, watch for Zoom Invitation



# The PE's perspective: With freedom comes responsibility

Anyone who accepts a freedom or privilege, including a license or registration, must also accept the duties and responsibilities that go with it.

Nothing comes for free, and the payment can be costly for those who do not understand the obligations that go with their actions. And there are those out there who have no issue in steering you astray; they do not share the same ethical, moral or legal responsibility that you possess or to which you are bound. You are the one who must honor and uphold your principles, morals and ethical beliefs. Only you. No one else can do it for you.

As we all know, or should know, freedom is not free. It is provided by those who defend the rights of others to have freedom, including many who have given their lives to protect and serve others. The same is true for those members of society who seek privilege or recognition as certified, licensed and/or registered professionals. As a society with many differing points of view, we must always remember that our freedoms and rights stop when they conflict with someone else's freedoms and rights. Agree or disagree, we all share the same space and must show respect for other points of view. Everyone has grown up with different life experiences, which forms their norm.

Having achieved the honor of being a registered Professional Engineer brings the responsibility and obligation of honoring a legal oath to a code of ethics. As an engineer, my first and primary obligation is to serve the public interest. However, I also have obligations to the client and to my employer. So, it is always a balancing act to assure these responsibilities are achieved while protecting the public health, safety, and welfare.

Much has been made of individual freedom in today's polarized society. But many of those espousing their individual freedom have little or no knowledge about "freedom." Freedom (the power or right to act, speak, or think as one desires without hindrance or restraint) is what Americans, along with millions of others, have fought, spilled blood and died for over centuries. Every generation has had its own related

issues and narratives to justify a self-serving or other-serving stance on the topic of freedom. Freedom remains a focal point in the U.S. and the world at large. This idea can be viewed from many angles.

Historically, the term "freedom from" goes back centuries. But in 1776, freedom from "tyranny over these States," as administered by King George III of Great Britain, became a battle cry of the Founding Fathers and led to the American Revolution and, ultimately, our independence.

Since then, there have been other events in America to expand freedom and rights: the Emancipation Proclamation in 1863, the Civil Rights Act of 1964, and The Equal Rights Amendment, which was passed in 1972 but not yet fully ratified and enacted. And there were additional efforts to codify, through the democratic process, other freedoms.



The Bill of Rights includes the crucial first 10 amendments to the U.S. Constitution, written by James Madison in 1791. Embedded within the Bill of Rights are several companion terms: "freedom of," "the right of the people," "shall not be infringed," etc. But with such freedoms come attendant obligations and responsibilities, along with many questions regarding freedom of speech and the press, among others.

When one's freedom intersects with someone else's life and potentially does some form of harm, limits or prohibitions

must be put in place to protect the common good. That's why smoking is prohibited at indoor gathering places and why safety restraints are standard in motor vehicles, among many other societally-accepted protections. It is when an individual places themselves and others at risk, it would seem that they are overstepping the boundaries of freedom.

We must ask ourselves, is America primarily a nation of freedom or a nation of laws? I would suggest that we are both a nation of freedom and laws, and that they must interact. When Americans abuse the freedoms and cause harm to those around them, their individual freedoms must be limited.

Trish Harrison Warren had an essay published recently in the New York Times titled "The Limits of My Body, My Choice" in which she eloquently states the case for a vital balance between choosing for ourselves and caring for those around us: "We have obligations to others, even obligations that we do not willingly choose. Our personal preferences and maximal autonomy must be set aside for the sake of loving our neighbor and for the common good."

While laws help to establish the limits on individual freedoms, we as individuals must also use common sense to control our freedom impulses. We must always consider how our actions impact the freedom of others, and we must strive to not infringe upon others' rights while we work to maintain the common good. As they say in the medical world, "do no harm."

Regardless of our profession, we should always remember to do no harm. We as a society need to understand that our freedoms have limits when the interest with others who have the same freedoms. We all need to accept our responsibilities and obligation that go along with our privileges and freedoms. As the saying goes, "Do unto others as you would have them do unto you." Accept the privileges and freedoms granted by those privileges, but remember to also honor the accompanying obligations and responsibilities. Protect the common good and hold the public health, safety, and welfare paramount above all other obligations.

## LEGISLATIVE & GOVERNMENT AFFAIRS

by Joseph V. Warino, PE, PS, FNSPE, Vice President,  
Legislative & Government Affairs, Ohio Society of Professional Engineers



# OSPE members promote safe roads & bridges to protect Ohioans

## Members can make a difference

As another year swings by, Ohio Society of Professional Engineers members continue to offer their advice and expertise regarding Ohio's deficient roads, bridges and infrastructure to members of the U.S. Congress. Last November, as you may recall, the federal government passed an infrastructure bill that will affect every Ohioan. The New York Times reported that there was a "\$1 trillion package to improve and modernize the nation's aging infrastructure...." Since that time, OSPE members have been urged to work with and offer guidance and recommendations for increased safety and inspections of roads and bridges in the state by licensed professional engineers (PEs).

The Infrastructure Investment and Jobs Act (H.R. 3684) was introduced in 2021 (117th Congress). One of the bipartisan bill's key sponsor was Ohio's own Senator Rob Portman. OSPE through its membership signed on to a letter from interested parties illustrating our support of the infrastructure bill yet opposing proposed language in the bill that would favor the PVC pipe industry by taking away the design professionals recommended preferred material choice. The opposed language was not included in the final bill.

In January 2022, Cleveland.com, an online news network covering Northeast Ohio reported that Ohio to get \$483.3 million from Feds over the next five years

to fix deteriorating bridges from the infrastructure bill. A senior administration official was quoted as saying "the amount of money each state receive will be based on need. Simply stated, states with greater need get more money." Another statement from Transportation Secretary Peter Buttigieg said the program is expected to fix thousands of bridges across the country.

As an experienced retired government official of 43 years, it is common knowledge that the majority of federal grants awarded to states and local government agencies require a local match. Knowing this, state and local government agencies need to begin preparing and budgeting for funding that may come available. In the summer of 2021 the Ohio legislature passed a badly needed gas tax increase. Funding derived from the gas tax and distributed to the state and local governments provide the necessary funding to support the operation and maintenance of Ohio's roads and bridges, and could be used as local match.

Whether you are a PE serving in government or as a consultant working on a government project, it is incumbent for each and every OSPE member to see that

the federal infrastructure dollars distributed to Ohio get the "biggest bang for the buck."

This narrative is just one example of how your membership in OSPE works daily for the betterment of the profession. To date, there are five bills in the 134th Ohio General Assembly that can have an adverse effect on the practice of engineering and that OSPE is addressing. Stay tuned with what is happening in the legislature by reviewing the bill summary included in each issue of OhioENGINEER magazine, and volunteer to champion a bill of which your expertise can be of service.

As registered PEs, we need to continue to advocate for the engineering profession. This can best be accomplished through "active" OSPE membership. Members can step up by introducing themselves to their legislators. Contact them via mail, email, phone, or a personal visit! (If you would like OSPE to assist, simply email [ospe@ohioengineer.com](mailto:ospe@ohioengineer.com).) After the introductions, please share with legislators the myriad reasons engineering licensure is essential to protecting the public. Make it your mission to support the profession.

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# OSPE bill tracking summary \*

<b>DEREGULATE CERTAIN EPHEMERAL WATER FEATURES, House Bill 175 (Hillyer)</b>	To deregulate certain ephemeral water features, make other changes to various water pollution control laws, to authorize a property tax exemption for certain private wetlands, and to make an appropriation.	<u>Status:</u> 4/21/2022 - SIGNED BY GOVERNOR; eff. 90 days
<b>LICENSURE THROUGH APPRENTICESHIP, House Bill 181 (Powell)</b>	To require a licensing authority to issue an occupational license to an applicant who completes a registered apprenticeship program and meets other requirements. <i>(Note: PEs are not impacted.)</i>	<u>Status:</u> 4/5/2022 - House Commerce and Labor, (Fourth Hearing)
<b>REQUIRE OCCUPATIONAL LICENSE IF EXPERIENCED IN OTHER STATE, House Bill 203 (Powell)</b>	To require an occupational licensing authority to issue a license or government certification to an applicant who holds a license, government certification, or private certification or has satisfactory work experience in another state under certain circumstances. <i>(Note: Amended bill includes OSPE-approved language.)</i>	<u>Status:</u> 4/6/2022 - REPORTED OUT AS AMENDED, House State and Local Government, (Sixth Hearing) <u>Position:</u> Support
<b>BUILDING INSPECTION LAWS, House Bill 372 (Ray, Roemer) &amp; Senate Bill 196 (Roegner)</b>	To make changes to the law relating to building inspections. <i>(Note: As introduced, the House and Senate bills are similar in language, but not identical.)</i>	<u>Status:</u> 3/29/2022 - HB 372, AMENDED, House Commerce and Labor, (Third Hearing). 4/6/2022 - SB 196, PASSED BY SENATE.
<b>PROPERTY DEVELOPMENT, House Bill 430 (Cross)</b>	To amend sections 153.64 and 3781.27 of the Revised Code relating to property development and protecting underground utility facilities during construction. <i>(Note: Requires county/city engineers to gather data about the locations of pipelines. Prohibits county/city engineers from giving final approval to a development until the requirements of the bill have been satisfied by the developer.)</i>	<u>Status:</u> 4/5/2022 - Senate Energy and Public Utilities, (Second Hearing)
<b>REVISE OCCUPATIONAL REGULATIONS, House Bill 509 (John, Fowler)</b>	To revise and streamline the state's occupational regulations.	<u>Status:</u> 3/29/2022 - Referred to Senate Workforce and Higher Education
<b>NATIONAL INFRASTRUCTURE BANK, House Resolution 19 (Sobecki, Stephens)</b>	To urge the United States Congress to create a National Infrastructure Bank to finance urgently needed infrastructure projects.	<u>Status:</u> 2/24/2021 - House Infrastructure and Rural Development, (First Hearing)
<b>REDUCE REGULATIONS, Senate Bill 9 (McColley, Roegner)</b>	To limit regulatory restrictions in administrative rules. <i>(Notes: This bill does not directly impact the State Board of Registration for Professional Engineers &amp; Surveyors, but it does impact agencies where PEs work. There is an exemption for rules incorporated by reference, such as a reference to a federal rule. However, if the Ohio rule is more stringent than the federal rule, then Ohio's rule may be invalidated. Another provision would allow the state agency to show cause why its required reduction in regulatory restrictions should be lessened.)</i>	<u>Status:</u> 3/10/2022 - SIGNED BY GOVERNOR, statutory language eff. 90 days <u>Position:</u> Interested party with concerns
<b>PAYMENT ASSURANCE-DESIGN PROFESSIONALS, Senate Bill 49 (Hottinger, Sykes)</b>	To establish a payment assurance program for registered design professionals.	<u>Status:</u> 7/1/2021 - SIGNED BY GOVERNOR, eff. 90 days
<b>INDEMNITY-DESIGN CONTRACTS, Senate Bill 56 (Blessing)</b>	To regulate the use of indemnity provisions in professional design contracts related to public improvements.	<u>Status:</u> 4/5/2022 - Senate appoints managers; Blessing, McColley & Thomas named as Senate conferees <u>Position:</u> Support
<b>LICENSURE RECIPROCITY BILL, Senate Bill 131 (Roegner, McColley)</b>	To require an occupational licensing authority to issue a license or government certification to an applicant who holds a license, government certification, or private certification or has satisfactory work experience in another state under certain circumstances.	<u>Status:</u> 3/22/2022 - BILL AMENDED, Senate Workforce and Higher Education, (Third Hearing) <u>Position:</u> Support

\* This is a partial list of the bills that the Ohio Society of Professional Engineers is tracking.

# 2022 ALL-OHIO ENGINEERING CONFERENCE

*Onward & Upward*

**June 9: Hilton Columbus at Easton**

Past Presidents' Meeting  
Awards Luncheon  
Annual Meetings  
Presidents' Party & Installation Ceremony

**June 10-11: Virtual**  
Twelve CPD Hours

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