

OhioENGINEER

Volume 79/Issue 2

The Official Publication of the Ohio Society of Professional Engineers

2019

Engineering infrastructure for tomorrow's climate

*A wake up call to
climate change*

Environmental
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LEADERSHIP VIEWS

by Travis L. Rhoades, PE, President,
Engineers Foundation of Ohio



Professional passion

I know what you are probably thinking with that title: "Here we go; Travis is going to give us a rah-rah speech." Just stay with me for a few moments, and I promise I will not go President Whitmore on you. (That's a reference to the 1996 blockbuster film *Independence Day*, if you haven't seen it.)

I recently had a conversation with a friend of mine where he was asking me questions about how speed limits for highway ramps are determined. He had a friendly bet riding on my response.

Much like I imagine many of you reading this would do, I went into engineer mode: A simple answer turned into a small presentation on highway design practice and theory.

He walked away from the conversation, and probably promptly forgot most of what I had said. One thing he did get out of the conversation was a sense of my passion.

Later, he approached my wife and said, "Man, Travis *really* likes what he does. Like he *truly* enjoys it."

That started me thinking: Why do I have a passion for my profession while so many others just "tolerate" their jobs?

Please do not mistake my meaning. I do not go into my office everyday smiling and happy to be away from my wife and home. My first instinct is to be with my wife and friends pursuing my hobby of playing board games rather than going to work. However, as we all know, society needs to function and personally I need a paycheck. That being said, keeping the world spinning and getting paid do not give anyone a true passion for their work.

Sometimes it gets monotonous dealing with scope, schedule and budget. It can get frustrating. I admit it; there was a time in my career that I was burned out. I

had lost sight of the reasons I had become an engineer.

About that time, a coworker (non-engineer) asked me about the Order of the Engineer certificate on my wall. She thought it was a great statement of principles and perhaps, in her words, "a little bit cultish." I explained the connection between the Engineer's Creed, the Code of Ethics, and the symbolism of the steel ring. She was impressed that we took ourselves that seriously.

With that conversation, I began to remember why I had become an engineer in the first place. First, I am skilled in science, math and drafting. Second, I have always gravitated to engineering characters in fiction.

And finally, I honestly like helping people.

I was already well into writing this column when I heard this truism: "We humans seem to have

a paradoxical relationship with ourselves. When we live only for ourselves we tend to die a bit on the inside. When we live a life of service to others we grow and are happier."

That profound statement perfectly sums up my passion for my chosen profession. As professional engineers we pledge ourselves to safeguard the health, safety and welfare of the public and, thus, we dedicate our lives to serving others.

I could look at each bridge, roadway or landfill that I have been a part of as just "another project" that everyone uses and to which no one pays any attention. I could do that, get paid and go on with my daily routine. Or I could choose to remember that thousands – or perhaps millions – of people use the infrastructure I have helped design.

Because I have done my utmost to make sure that these things were designed effi-

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"When we live a life of service to others we grow and are happier."

On the cover:

Beavercreek, Ohio, homes ravaged by 2019 Memorial Day weekend tornadoes. What is a Professional Engineer's role in helping our infrastructure be resilient in a changing climate? Photo credit: jmac23 / Shutterstock.com. See feature, page 8.



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LEADERSHIP VIEWS

by Tim Schaffer, Executive Director, Ohio Society of Professional Engineers



NSPE membership: An integration of all engineers

Membership generation and retention is the lifeblood of all professional organizations. It is a matter of generating revenue, recruiting new leaders, accessing new talent and replenishing our numbers as people leave the profession, retire, move, etc.

OSPE is no different. We need to continually generate new members, more members. We do not survive by

maintaining the status quo. This, in spite of OSPE enjoying an excellent member retention rate of 92 percent compared to the national average of 78 percent.

To generate new members and supply new talent, OSPE launched the "Let OSPE put money back in your pocket" membership campaign last fiscal year. If you recruited two new members, we offered to pay your dues — all \$299 of it. That's a pretty good deal.

This campaign was especially important since we redesigned our dues structure with NSPE and we eliminated state-only, two-tier dues. Two-tier dues is no longer offered to new members, though those PEs who today are two-tier members may stay two-tier members as long as they wish.

Membership pulls us together collectively into one singular unit of energy — energy that protects the PE license and promotes the profession. NSPE founder David Steinman, PhD, said of our original symbol:

"There is the emblem: an integration of all engineers — the profession founded on mathematical science — the profession that integrates, that builds, that creates the wheels of progress, serving and benefitting all mankind."

That's a profession worth protecting; don't you agree? If your answer is "yes," then please join us in 2019-2020 and help OSPE lead the way to protecting this noble profession and keep our membership vibrant!





PEs make an impact at the Statehouse during Ohio Engineers Legislative Day

This year's Ohio Engineers Legislative Day took place at the Sheraton Columbus at Capitol Square – mere paces from the Ohio Statehouse. Hosted by the Ohio Society of Professional Engineers, the 2019 program also included ASCE Ohio Council of Sections and IEEE as co-sponsors.

For the May 8 program, there was a great turnout with 70 participants who earned up to 5.0 CPD hours. PEs learned about the impact of the newly passed transportation budget, an engineering

college's place in a research university, coal-fired power plants, power generation in 2019 and policy initiatives that affect PEs. In addition, invaluable advocacy training was provided by OSPE lobbyist Matt Whitehead, vice president of Governmental Policy Group, Inc.

After the seminars, 15 engineers visited 15 State representatives and senators to discuss important policy initiatives and concerns. Thanks to the following PEs who met with Ohio legislators and

put timely information into their hands: **Robert Banasik, Henry Dammeyer, Steve Day, David Dexter, Tony Grgas, Robert Heady, Richard Irwin, Howard Jones, Randall Keitz, David Pritchard, Aurea Rivera, Devon Seal, William Stewart, Joe Warino and Rodney Wilson.** These OSPE members explained to legislators why it is critical that licensed engineers

See "Legislative Day," page 5



ODOT Director Jack Marchbanks explained Ohio's transportation budget.



State Representative Louis W. Blessing, III, PE, provided insights on the legislature from a PEs perspective.



Matt Whitehead, VP of Governmental Policy Group, provides advocacy training.



ASCE Director of State Government Relations Aaron Castelo, CAE, presents, "Why Should Engineers Be Involved in Public Policy?"



OSPE Past President & Ohio University Dean of Engineering Dennis Irwin, PhD, PE, FNSPE, discusses an engineering college's place in a research university.



Paul Jackson, PE, the asset manager for Buckeye Power, provides an overview on coal-fired power plants.

WELCOME, NEW MEMBERS

The Ohio Society of Professional Engineers welcomes 23 new members from April 5 through July 3, 2019:

Akron District Chapter

Jared M. Alexander, EI, Travis Okel, PE, Alex J. Pemberton & Donald J. Schehl, PE

Canton Regional Chapter

Joshua J. Renicker, PE

Dayton Chapter

Robert Carl Ransbottom, PE, Rhadonna Lynette Stovall, Brian Thomas & Jeffrey Wuich, PE

Franklin County Chapter

Erik P. Briedis, PE, Jacob Carey, David J. Heedy, PE, James Howlett, PE & Stanley Quayle, PE

Maumee Valley Chapter

Kylie R. Filipiak, PE

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Paul Joseph Barnhart, PE & Michael Christopher Maier, II, PE

Southwest Ohio Chapter

Noah S. Cline, Minh Duc Nguyen, Cory Rose, James C. Rumping, PE & Christopher C. Thompson

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Columbus State Community College, Ohio University Russ College of Engineering and Technology & Tai Wong, PE

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OSPE & EFO NEWS

From "Legislative Day," page 4

(PEs) perform engineering work in Ohio, why House Bill 189 (Patterson & Blessing) would be improved with a PE involved in the oversight of amusement ride safety, and how an indemnity regulation bill – House Bill 159 (Blessing) – protects engineers and increases design competition for Ohio's public works contracts.



< Ben Wilson, PE, manager of power delivery for Buckeye Power, discusses how the transmission grid and energy markets are adapting to changing technology.

Left to right are State Representative Doug Green (R-Mount Orab) and OSPE President-Elect Devon Seal, MBA, PE. They had an in-depth discussion about House Bill 189 (amusement ride safety). In the spring, this bill passed the House Transportation and Public Safety Committee, which Representative Green chairs, and subsequently the full Ohio House of Representatives. >>>



State Representative Adam Holmes (R-Nashport) and Bill Stewart, PE, take a break after discussing House Bill 159, which addresses indemnity provisions in public design contracts.



OSPE members prepare to visit their legislators. Left to right are PEs Bill Stewart, Dave Pritchard, Joe Warino, Randy Keitz, Rod Wilson, Henry Dammeyer, Robert Banasik, Rich Irwin, Aurea Rivera, Howard Jones, Dave Dexter, Robert Heady, Devon Seal and Steve Day. Not pictured: Tony Grgas.



Left to right, Rod Wilson, PE, Randy Keitz, PE, State Representative Don Jones (R-Freeport) and OSPE Vice President Joe Warino, PE, PS, FNSPE, pose for a photo after discussing the importance of protecting the PE license in Ohio.

From "Professional passion," page 1

ciently and safely, those thousands – or perhaps millions – of people have gotten to their destinations safely or have been able to dispose of their waste without thinking, "Is this going to contaminate the environment?"

If people are compelled to stop and think about my work product, to question its level of safety or its ability to function as required, then clearly I have not done my job. It is the same with all disciplines of engineering. We exist to leverage science and technology in a way that the public doesn't need to think about us. That can be disheartening at times, but we can also take pride that our passion for our profession is resulting in people living safer and more satisfying lives.

Not long after I told my coworker about the Order of the Engineer, I joined a group of people who talk about this kind of thing all the time. It was great to learn that other people I respect in the engineering community have my same passion for our profession. This group of people talks about ways to promote our profession, protect our licenses from attacks (of which I had been unaware) and give back to the next generation of engineers. You may have guessed that I'm referring to the members of the Toledo Chapter of OSPE. Then they let me in on a secret: There is a whole state and national organization for people like us, too – people who have a real passion for our profession.

Since then, I have found a true home among the members of OSPE and NSPE and serving with the Engineers Foundation of Ohio. It is good to be part of a group of people pursuing the goal of furthering the engineering profession, but more importantly serving other people. I am thankful that these organizations exist, and thankful to those who brought me into them.

I encourage everyone reading this to share your passion. Do not fear being the "crazy one" in the office who gets really pumped up by their career. Rather, fear working with the unmotivated colleague who lives only for the next paycheck.

OSPE & EFO mourn Leon E. Winget, Jr., PhD, PE, FNSPE, MATHCOUNTS chair & strong advocate for youth education

It is with great sadness that we report the passing of **Leon Egbert Winget, Jr., PhD, PE, FNSPE**, Ohio's longstanding and beloved MATHCOUNTS chairman. Leaders, members and staff of the Ohio Society of Professional Engineers (OSPE) and the Engineers Foundation of Ohio (EFO) will miss his smile, his laugh, his passion for MATHCOUNTS and his dedication to expanding young minds. He was a true champion of youth education. He will be greatly missed.

As OSPE/EFO Executive Director Tim Schaffer said, "Leon leaves very large shoes to fill."

"Leon was there to help at every turn: He was often the first to raise his hand to volunteer or to lend his knowledge to clarify an issue," said OSPE Past President Steve Day, PE, FNSPE. "During his years with the Society, Leon served as Chapter president not once, not twice, but three times. And that is just one of many ways that I know that his dedication was from his heart."

Winget, who passed away in his home on June 6, 2019, was born July 13, 1933, in Chillicothe, Ohio. In his early years, he worked the family farm located in the Scioto River Valley. He graduated with honors from Chillicothe High School in 1951 and went on to pursue engineering studies at The Ohio State University (OSU). There, over the course of a number of years, Winget earned three degrees in mechanical engineering – a bachelor of science, a master of science and a doctorate. During his time studying at the university, Winget also worked as a research assistant at the OSU Experiment Station (1960-1962) and taught in the engineering department, and he enjoyed many football games coached by Woody Hayes.

At the start of his career, Winget was employed by Convair Division, General Dynamics (1955-1959) in Fort Worth, Texas, where he supported the design and breakthrough of jet engine propulsion as a lead propulsion engineer. Winget also worked for North American Rockwell Corporation (1961-1969), where he continued working in the aerospace/propulsion industry as a research engineer, supporting the B-1B Bomber and the Saturn V rocket engine for the Apollo space program.

For more than 30 years, Winget worked for the Public Utilities Commission of Ohio (PUCO) where he was a senior engineer and power siting coordinator. Winget was a respected authority in sustainable and alternate forms of energy. He promoted sound energy policies providing increased energy capacity and infrastructure for the people of Ohio while actively protecting the Ohio environment and land use.

In 1976, Winget, chief of energy usage, was selected as a member of a U.S. Delegation for International Relations with China. In China, he exchanged ideas and information on advanced mining techniques and efficient, clean use of coal and other energy sources with the Chinese government and industry. In 1978, he was the director of Ohio Solar and in 1980 became the chief of Coal R&D. In 1984, Winget became a lead investigator for the PUCO Power Siting Board, later serving exclusively on the Power Siting Board.

Winget was significantly active in several professional societies holding various positions and offices in each one: American Society of Mechanical Engineers, Columbus Solar Society, Ohio Society of Mining Engineers, American Society of Heating, Refrigeration and Air Conditioning Engineers and American Institute of Aeronautics and Astronautics.

The most notable and attended society was OSPE along with its Franklin County Chapter. At the chapter level, Winget served several terms as president and vice president. At the state level of OSPE, he was active in the Legislative & Government Affairs Committee and the Joint Investment Committee, and he served as a volunteer for the Ohio Engineering Certificate Ceremony, co-chair for the Annual Meeting, treasurer for the Political Action Committee and OSPE director. Winget was also an EFO trustee, and he helped with scholarship grading and the Imagine Engineering program.

However, Winget is probably best remembered by many of his OSPE and EFO friends and colleagues for his long years of dedicated service to Ohio MATHCOUNTS. Having served for many years on the MATHCOUNTS Committee, Winget came to assume the position of our chair and coordinator. *And he delighted in preparing students for competition!*

Winget earned the OSPE Meritorious Service Award and the OSPE Citation – the Society's highest honor – as well as the EFO President's Award. Having served on the National Society of Professional Engineers (NSPE) Board of Directors, Winget's long and prestigious career culminated in the highest national honor: NSPE Fellow (2014).

Like many "mathletes," Winget was an avid problem-solver, especially Sudoku and crossword puzzles. He enjoyed working with his hands, repairing and building furniture, designing and building a barn for his daughter, playing bridge and tennis, performing research and working to preserve the environment.

Winget is survived by his wife of 65 years, Joanne (Stauffer) Winget, daughters Cynthia Winget Reichardt (John) and Christina Winget (Fergus Hutchinson), three grandchildren – Gráinne and Dermot Hutchinson and Arianna Reichardt – and sister Bonnie Winget Bennett. Winget was very proud of his grandchildren and, true to form, he supported their efforts to obtain higher education.

Winget was preceded in death by his parents, Leon E. Winget, Sr., and Elnora (Feikert) Winget, and sisters Joanna, Barbara and Kathryn.



**Leon E. Winget, Jr.,
PhD, PE, FNSPE**

Pass-The-Hat raises money for EFO educational programs

The 2019 Pass-The-Hat campaign surpassed its goal by raising more than \$18,500 for the Engineers Foundation of Ohio (EFO). Thank you to our generous donors who believe in EFO's programs, including the Imagine Engineering program for



second graders, Ohio MATHCOUNTS for middle school students, college scholarships and the Engineer as Leader professional training. To support EFO in fiscal year 2020, please call 614-223-1177 or email EFO@OhioEngineer.com.



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Engineering infrastructure for tomorrow's climate

A wake up call to climate change

Just a few weeks ago many Ohioans awoke to tornado sirens in the middle of the night. The next morning brought news of the devastation in and around Dayton, Ohio.

While tornadoes are not all that rare in Ohio, an outbreak of 21 twisters over Memorial Day weekend was highly unusual for the Buckeye State.

The National Weather Service indicates that the 30-year average for tornadoes in Ohio is only 19 per year. Interestingly, the 10-year average for tornadoes in Ohio is 22 per year, which indicates that the frequency of tornadoes in Ohio is increasing.

Weather & climate

There may be debate about whether humans can do anything to reverse climate change, but there is no longer any question that the climate is changing. Ohioans are seeing the results of a changing climate in our daily lives.

Scientists and engineers around the world use sophisticated models to estimate future changes in climate, and understand how the changing climate affects regional weather patterns.

While tornadoes are classified as a weather phenomenon, increasing frequency and intensity of extreme weather events is one result of a changing climate. There is an important distinction made between weather and climate:

Weather: Short-term changes in atmosphere

Climate: Long-term pattern of weather in a particular area

Future changes to climate vectors like temperature, precipitation and sea level rise are modeled by climate scientists based on assumptions about the future growth (or decline) in greenhouse gas emissions. Climate models projecting greenhouse gas emissions at current or increasing rates show the largest magnitude changes in climate. Climate models projecting moderate or significant decreases in future greenhouse

gas emissions show smaller magnitude changes in climate.

Climate change science - An internationally coordinated study

The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. Established in 1988, IPCC provides policymakers from 195 member countries information on the implications and potential future risks of climate change.

IPCC does not conduct its own research, but compiles and reviews research from the scientific community on topics related to climate change. IPCC identifies where there is agreement among scientists and where further research is needed. IPCC published its most recent assessment report, AR5, in 2014, and plans to publish AR6 later this year.

Ohio climate projections

The United States published the Third National Climate Assessment in 2014, and the Fourth in 2018. The National Climate Assessment summarizes the impacts of climate change on the United States, and the National Oceanic and Atmospheric Administration (NOAA) uses this data to produce State Climate Summaries. NOAA's Ohio Climate Summary, updated in 2016, lists the following projected climate changes for Ohio:

- **Temperature change:** Historically unprecedented warming is projected by the end of the 21st century. Extreme heat is of particular concern for the state's urban areas where high temperatures and high humidity can cause dangerous health conditions.
- **Heavy precipitation events:** Increases in winter and spring precipitation are projected and will raise the risk of springtime flooding. Ohio has already experienced a significant increase in the number of extreme precipitation events (more than two inches) since 1990.

- **Drought:** Future projected temperature increases may increase the intensity of naturally-occurring droughts.

Impacts of climate change in Ohio

The Fourth National Climate Assessment also identifies impacts from climate changes by region. The following impacts due to climate change are noted for the Midwest:

- **Agriculture:** Projected changes in precipitation, coupled with rising extreme temperatures before mid-century, will reduce Midwest agricultural productivity to levels of the 1980s without major technological advances. (U.S. Global Change Research Program, 2018)
- **Forestry:** Rising temperatures will change habitats for many tree species disrupting forest ecosystems. This could lead to the loss of important tree species, and the conversion of some forests to other forest types or non-forested ecosystems.
- **Biodiversity and ecosystems:** Climate change is expected to stress many species and ecological systems in the Midwest leading to a reduction in biodiversity in our forests, lakes and rivers.
- **Public health:** Climate change will result in increased risks to public health from increases in heat wave intensity and frequency, degraded air quality, heavy rainfalls, extended pollen seasons and changes in disease-carrying pests and insects.
- **Transportation and infrastructure:** Stormwater management systems, transportation networks, and other critical infrastructure will be impacted by changing precipitation patterns and elevated flood risks. Ohio also relies heavily on coal for electricity generation, and agriculture and manufacturing are high energy-intensive sectors.
- **Community vulnerability and adaptation:** At-risk communities are especially vulnerable to climate change impacts from flooding, drought and increases in urban heat islands.

Climate change adaptation & resiliency

With all of these vulnerabilities to climate change for Ohio communities, agriculture and industry, there are actions that we can take, as engineers and leaders to help Ohio adapt and increase our resiliency to the changing climate. The IPCC defines climate adaptation and resiliency in the following way:

- **Adaptation:** The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. (IPCC, 2014)
- **Resilience:** The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation. (IPCC, 2014)

The engineer's role

Infrastructure in the United States is aging. Much of the aging infrastructure in Ohio in need of replacement has a long lifespan. The climate at the end of the lifespan for the infrastructure we are constructing today may be much different than the climate we are experiencing today.

For example, the annual cost of adapting urban stormwater systems to more frequent and severe storms is projected to exceed \$500 million for the Midwest by the end of the century. (U.S. Global Change Research Program, 2018)

In addition to significant planned investments in the next few years by some local municipalities and utilities, Ohio just passed a gas tax paving the way for much needed infrastructure improvements to our transportation system.

Engineering infrastructure for tomorrow's climate

Forward-thinking design and appropriate sizing and selection of infrastructure is imperative for a resilient Ohio. Working in the built environment, engineers have the unique ability to understand the constraints of

the current systems and design a more resilient future.

As a private consultant, more of my clients are asking about resiliency in design. Discussions with clients about the appropriate design storm to use as the basis of design and recurrence intervals for upsets given future climate projections are becoming more common.

Clients are also increasingly interested in understanding their vulnerability and risk for infrastructure that may be undersized in the future, or in poor condition.

When an area experiences several 100-year storms over the span of just a few years, engineers are recognizing that the way we design to and communicate about storm intensity needs to change.

Engineers often play a role in developing many design standards. We also have the responsibility to provide the public with accurate information about the design basis used for the infrastructure we engineer. We can help communities understand their risks and vulnerabilities to climate change and help community leaders make informed decisions about appropriately incorporating resiliency into designs.

There are several tools available to help engineers better understand potential impacts, including failure of existing infrastructure, construction delays, capacity concerns and permit compliance issues. There is also a wealth of information available about adaptation and resiliency. The following are just a few of the many resources available to engineers:

- Ohio Department of Transportation Infrastructure Resiliency Plan
- Airport Cooperative Research Program (ACRP) Report 147: Climate Change Adaptation Planning and Risk Assessment for Airports
- Climate Adaptation Guidebook for Municipalities in the Chicago Region, Chicago Metropolitan Agency for Planning
- Climate Change and the Electricity Sector: Guide for Climate Change Resilience Planning, U.S. Department of Energy, September 2016

Planning for a more resilient future

Maybe the area where engineers have the biggest opportunity to improve resiliency is through our involvement in planning processes for the organizations

and public that we serve. Identifying where an organization will assess its climate risks and vulnerabilities and when the appropriate time is to assess those risks and vulnerabilities is important. There is significant value in assessing climate risk and vulnerability up front, and then including goals and objectives for adaptation and resiliency in planning documents, including:

- strategic planning,
- master planning,
- enterprise risk management,
- safety management,
- capital planning,
- asset management and
- emergency management.

Organizations that plan and identify goals and objectives for addressing their climate risks and vulnerabilities benefit in many ways, including:

- lower costs for repair, maintenance and other weather-related costs;
- improved safety and security;
- improved preparedness for extreme weather events;
- lower risk of under-sized infrastructure;
- better ability to maintain compliance with environmental, safety and other regulations;
- improved reliability and customer service;
- maintained continuity of operations during an extreme event; and
- improved ability to recover from an extreme event.

A good resource for incorporating climate change resiliency and adaptation into the planning process for any organization is ACRP Report 188: Handbook: Using Existing Airport Management Systems to Manage Climate Risk.

Although Ohio has significant vulnerabilities associated with climate change, there is opportunity for our state to adapt, increase resiliency and maintain prosperity. Engineers are poised to be at the forefront of preparing Ohioans for tomorrow's climate.

Devon Seal, PE, ENV SP, is an environmental jack-of-all-trades, experienced in all manner of environmental consulting and design services. One of Seal's proudest accomplishments is her work for the Airport Cooperative Research Program, including Report 147: Climate Change Risk Assessment and Adaptation Planning at Airports. Seal is also the newly-elected president of the Ohio Society of Professional Engineers.



EFO outing tees up \$9,800 for engineering education

The 27th Annual EFO Benefit Golf Outing held at New Albany Links Golf Club in May generated nearly \$9,800 for the Foundation's 2019-2020 education programs: Imagine Engineering, scholarships and the Engineers Leadership Institute. Thank you to all of the players, sponsors and donors for helping EFO advance engineering education in Ohio.

Chairman Steve Day, PE, FNSPE, and Co-Chair and Fairfield County Engineer Jeremiah Upp, PE, PS, can be credited for making the event a big success. Additional thanks goes to our Honorary County Engineer Co-Chairs: Tuscarawas County Engineer Joe Bachman, PE, PS, Gallia County Engineer Brett Boothe, PE, PS, Columbiana County Engineer Bert Dawson, PE, PS, Madison County Engineer Bryan Dhume, PE, PS, Montgomery County Engineer Paul Gruner, PE, PS, Portage County Engineer Michael Marozzi, PE, PS, Ashland County Engineer Ed Meixner, PE, PS, Franklin County Engineer Cornell Robertson, PE, PS, and Guernsey County Engineer Paul Sherry, PE, PS.

The winning team included the following team members from Sands Decker Engineers & Surveyors: Scott Sands, Mark Cameron, Jason Hickman and Jim Coleman. In second place was the team from Gresham Smith: Devon Seal, Mike Seal, Mike Babjak and Jeff Poppow. Special awards were also made

to Jason Hickman (Sands Decker) for hitting the "longest drive" and Jim Coleman (Sands Decker) for being "closest to the pin."

Thank you to EFO Benefit Golf Outing sponsors:

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EFO raffle donors included Akron Rubber Ducks, Behringer Crawford Museum, Bicycle Museum of America, Blossom Music Festival, COSI, Cleveland Browns, Columbus Zoo, Donatos, Evers Welding Company, Inc., Great Lakes Science Center, Lake Erie Nature & Science Center, Miller Boat Line, Nicklaus Family Office, Refectory Restaurant, Shadowbox Live, Snow Trails, The Henry Ford Museum, Toledo Mud Hens Baseball Club, Inc., Toledo Symphony Orchestra, Trumpet In The Land, U.S.S. COD Submarine and Young's Jersey Dairy.

Plans are underway for the 28th Outing next spring. The event will likely be held again at New Albany Links.

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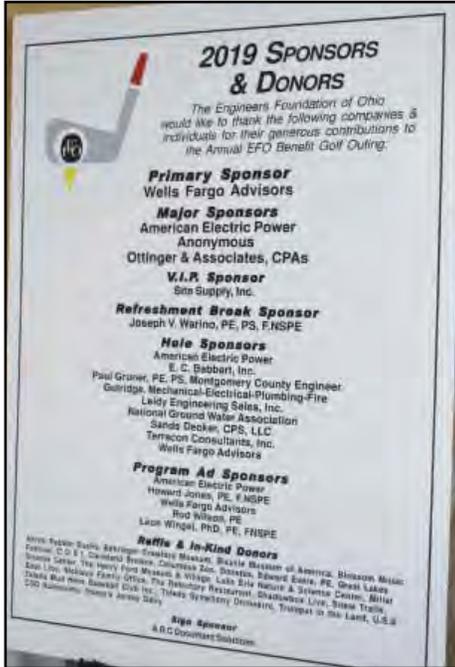


The winning team at EFO's 2019 Benefit Golf Outing: Left to right are Jim Coleman of Ruscilli Construction and Scott Sands, Jason Hickman and Mark Cameron of Sands Decker Engineers & Surveyors.

OSPE & EFO PROGRAMS

Thanks, EFO Golf Outing sponsors, donors & chairs!

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Left to right, Chairman L. Steve Day, PE, FNSPE, and Co-Chair Fairfield County Engineer Jeremiah Upp, PE, PS, confirm the teams are ready to roll before starting the 2019 EFO Benefit Golf Outing scramble.

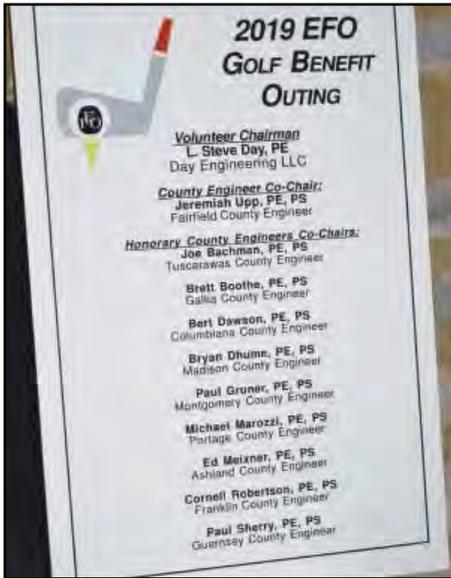
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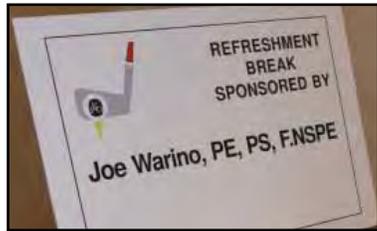
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PEs at Perrysburg Conference are wowed by "Innovative Engineering" topics

This past June, in the heart of North-west Ohio – an area that is nationally recognized for its engineering and technology sectors – the 2019 All-Ohio Engineering Conference featured education programs covering a variety of innovative engineering efforts. A large crowd of engineers enjoyed the seminars at the Hilton Garden Inn Perrysburg, the technical tours at Turner Concrete Products and First Solar's new facility, the Legislative Luncheon, the Awards Luncheon, the Presidents' Party and other social aspects of the Conference.

The Conference theme was "**Advancing the World Through Innovative Engineering**," and PEs earned up to 12.5 CPD hours. Engineers were impressed with technical seminars covering integrated lifecycle engineering, forensics, sustainability, diverging diamond interchanges, unmanned aerial systems, emerging water treatment technologies, and art and biology as inspiration for solutions to engineering design challenges. Ohio Senator Theresa Gavarone (R-Bowling Green) gave attendees information about bills that are affecting their PE licenses and other technology issues. The 2019 program again featured two hours of ethics and rules education to help PEs meet Ohio's requirement. This year's ethics speakers focused on the Ohio Code of Ethics for Engineers and Surveyors as well as diversity and inclusion.



Special thanks to the fantastic speakers and technical tour hosts: Thomas Schneider of Rudolph Libbe (who conducted the First Solar facility tour) and Bryan Martin of Turner Concrete.



University of Toledo College of Engineering Dean T. Michael Toole, PhD, PE, explains "integrated lifecycle engineering," a process in which design professionals consider design feedback from end-user stakeholders.



The 2019 All-Ohio Engineering Conference featured 2.0 CPD hours of ethics and rules training. L-R: Adam Hoff, PE, president of Hoff Consulting Services in Maumee, highlights Ohio Administrative Code 4733-35, while Lesley Berhan, PhD -- the University of Toledo College of Engineering's Associate Dean for Diversity, Inclusion and Community Engagement -- discusses why diversity and inclusion are important considerations for engineering ethics.



< Fred Judson, director of the Ohio UAS Center for DriveOhio, talks about how Ohio currently uses unmanned aerial systems and the State's plans to enable more advanced operations.

Brian Trease, PhD, assistant professor of mechanical and industrial engineering at the University of Toledo, explained how origami and biomimicry has inspired novel solutions to engineering design challenges.



< Andy McClure, PE, the administrator for the Collins Park Water Treatment Plant presents "Use of Emerging Water Treatment Technologies by the City of Toledo."

Defne Apul, PhD, PE, professor of civil and environmental engineering at the University of Toledo, talks about the latest thinking in sustainability, including ecological design, lifecycle assessment and infrastructure green rating systems. >>>



Senator Theresa Gavarone meets with OSPE



Ohio Senator Theresa Gavarone (R-Bowling Green) joined OSPE at the Legislative Luncheon to discuss engineering and technology issues advancing in Ohio's legislature.



L-R: Corrinne Lochtefeld, PE, and Amy Zimmerman, PE, transportation engineers discuss DGL Consulting Engineers' use of a diverging diamond interchange to significantly improve the congestion and safety at SR-25 and IR-475 in Perrysburg.



< Bryan Knepper, PE, senior engineer for EES Group, Inc., teaches PEs the forensic process used to identify damages typically associated with insurance claims and potential litigation.

ALL-OHIO ENGINEERING CONFERENCE



L-R: Newly elected OSPE President Devon Seal, MBA, PE, receives congratulations from Past President Walt Roehrs, PE. Roehrs became OSPE's president in 1979 – exactly 40 years ago.



A surprised OSPE President Steve Day, PE, receives his NSPE Fellow membership pin and plaque from Kodi Jean Verhalen, PE, Esq., FNSPE, who was NSPE president in 2016-2017.



< At Turner Concrete Products, Operations Manager Bryan Martin tells OSPE Conference registrants about the advantages of prefabricated concrete products.



All-Ohio Engineering Conference attendees pose for a group photo at the new First Solar facility. As the design-build contractor, Rudolph Libbe, Inc., conducted the technical tour of the \$400 million, 1.2 million-square-foot solar module manufacturing facility.

OSPE's & EFO's 2019-2020 leaders are installed, June 7



At the OSPE-EFO Joint Installation Ceremony, NSPE Past President Kodi Jean Verhalen, PE, Esq., FNSPE, (at the podium) installs the 2019-2020 OSPE Board of Directors and EFO Board of Trustees. From left to right are EFO Treasurer Rod Wilson, PE; EFO President-Elect Rich Miller, PE; OSPE-PAC Chair Rich Henry, PhD, PE; OSPE Treasurer Tony Grgas, PE; OSPE VP of L&GA Joe Warino, PE, PS, FNSPE; EFO Past President Travis Rhoades, PE; EFO President Chett Siefring, PE; OSPE President Devon Seal, MBA, PE; OSPE President-Elect Kevin Ernst, PE; OSPE Past President Steve Day, PE, FNSPE; OSPE Chapter Directors Jeff Kennedy, PE, and Jim Montgomery, PE; and Young Engineer Representative James Gonya, EI.



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ALL-OHIO ENGINEERING CONFERENCE

OSPE & EFO Annual Awards Luncheon: Saturday, June 8, Hilton Garden Inn Toledo-Perrysburg, Ohio



OSPE President Steve Day, PE, FNSPE, presents Lisa Abrams, PhD, PE, with the 2019 Outstanding Engineering Educator Award. Dr. Abrams, who is with The Ohio State University, is a mentor and well respected by students.



< OSPE President Steve Day, PE, FNSPE, (center) recognizes Toledo Chapter President Richard Martinko, PE, (left) and EFO President Travis Rhoades, PE, (right) for serving as co-chairmen for the 2019 All-Ohio Engineering Conference. Richard and Travis led the local chapter in lining up fantastic seminars and technical tours, as well as securing sponsorship support.



Joe Sullivan, PE, a member of the Franklin County Chapter, is the recipient of the 2019 Professional Engineering Management Award. He is recognized for his vision and his display of leadership, organizational and management skills in an engineering environment. Sullivan is currently vice president and discipline leader for Stantec's Global Transportation Business Line. >>>



OSPE President Steve Day, PE, FNSPE, presents Toledo Chapter President Rich Martinko, PE, with the 2019 Engineers Week Overall Observance Award. In addition to providing support to the University of Toledo's E-Week effort, the Toledo Chapter hosts the local MATHCOUNTS competition for middle school students, the local Engineer for a Day program benefiting high school students, an E-Week Banquet and its annual Engineer of the Year Award Luncheon.



< OSPE President Steve Day, PE, FNSPE, presents Brent Sisler, PE, Akron District Chapter, with the 2019 Uncommon Engineer Award in recognition of his distinguished service. Sisler is best known for his involvement in the MATHCOUNTS competition since 1984. In addition, he has been long committed to the advancement of his engineering profession and the development of young professionals.



Fairfield County Engineer Jeremiah Upp, PE, PS, is the recipient of the EFO President's Award. Upp has spent countless hours over the last two years growing the EFO Benefit Golf Outing. >>>



EFO President Travis Rhoades, PE, presents Ohio Auxiliary Chair Agnes Benedict with the EFO President's Award. Benedict receives the award on behalf of the Auxiliary to the Franklin County Chapter of OSPE. Since its inception in 1952, the Auxiliary has raised over \$30,000 for engineering scholarships benefiting students at The Ohio State University.



★ 2019 OSPE Star Chapter Awards



L-R: OSPE President Steve Day, PE, FNSPE, presents 2019 Star Chapter Award certificates to Richard Smelker, PE, representing Franklin County Chapter (★★★★★), Jim Montgomery, PE, representing Dayton Chapter (★★★★★) and Richard Martinko, PE, representing Toledo Chapter (★★★★★). *Congratulations, Star Chapters!*



ALL-OHIO ENGINEERING CONFERENCE

OSPE & EFO Awards Luncheon, June 8, Perrysburg (continued)



EFO President Travis Rhoades, PE, presents second-grader Jack Brown with a certificate for winning the statewide 2019 Imagine Engineering Coloring Contest. Brown shows off his first place entry, which depicts a PE referencing his plans during a construction site visit for a multi-faceted engineering project.



EFO President Travis Rhoades, PE, presents the Peter Peterson Fund-University of Toledo-Memorial Scholarship to Benjamin Armbruster, who is from Bowling Green, Ohio. Armbruster plans to study civil engineering at the University of Toledo. A graduate of Elmwood High School, he served as class president and president of the National Honor Society.

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In a special ceremony the Presentation of the Colors was made by the 180th Ohio Air National Guard Honor Guard from Swanton, Ohio.

More friendly faces at the 2019 All-Ohio Engineering Conference



< At the OSPE Annual Meeting, President Steve Day, PE, FNSPE, receives the past president's gavel plaque from President-Elect Devon Seal, MBA, PE.



< At the EFO Annual Meeting, President Travis Rhoades, PE, receives the past president's gavel plaque from President-Elect Chett Siefring, PE.



< Back by popular demand, Joe Warino, PE, PS, FNSPE, kicks back, playing inviting tunes at the Welcome Reception and collects donations for EFO.



OSPE Young Engineer Representative James Gonya, EI, poses with NSPE Past President Kodi Jean Verhalen, PE, Esq., FNSPE. >>>



< On a beautiful evening in Northwest Ohio, NSPE Past President Kodi Jean Verhalen, PE, Esq., FNSPE, presents OSPE President Steve Day, PE, FNSPE, with his NSPE Fellow Award.



Always a champion for the Engineers Foundation of Ohio, Howard Jones, PE, sells PE license plate frames, from which EFO gets proceeds.



Threats remain, but with your support we have tasted success & we are getting increasingly stronger

As I reflect on the past fiscal year, I am reminded of the numerous legislative attacks volleyed against licensure in Ohio in 2018. During the 132nd Ohio General Assembly, members of OSPE's Legislative and Government Affairs (L&GA) Committee executed several initiatives to combat these attacks. For example, in 2018, OSPE successfully stopped the railroad industry from eliminating the Ohio law that requires PE oversight on bridge inspections, and we worked with a coalition to successfully halt a piping materials preference bill that would have removed the PE's authority. While we held off many attacks in 2018, threats remain as evidenced by the lame duck passage of Senate Bill 255 as well as the re-introduction of other policy initiatives threatening licensure in 2019.

Thank you to OSPE's members and staff for their stellar work throughout the last 12 months in defending the profession and the public's welfare. Everyone's work facilitated the betterment of OSPE and the engineering profession.

In addition, as many members are aware, in October 2018 the OSPE Board of Directors hired a contract lobbying firm to provide professional assistance. And in less than a year, Governmental Policy Group (GPG) has already helped us to refine our lobbying tactics thereby making us more effective.

Thank you to GPG for providing guidance towards the execution of a very successful Ohio Engineers Legislative Day this past May, and to GPG Vice President Matt Whitehead for providing 1.0 CPD hour of education there. Matt also participated in our Political Action Committee (PAC) fundraiser lunch in Perrysburg this past June, and he provides regular, invaluable insight at OSPE's quarterly L&GA Committee meetings and to our leaders as they prepare to interact with legislators. GPG is also working with OSPE's PAC to increase its impact. We are excited to see how our relationship with Governmental Policy Group will continue to unfold in fiscal year 2019-2020.

In the 133rd Ohio General Assembly, OSPE is continuing to focus on supporting and defending the PE license and the public that PEs serve. Presently, we are engaged in the following initiatives:

- **We are always busy working to notify you, the OSPE member, of the various threats to licensure laws in Ohio and around the country.** In this way, you remain informed and, as appropriate, we may ask you to contact your local legislators to request action. *Please watch your email for "Legislative Alert" newsletters for timely updates.*
- **OSPE regularly educates legislators about who PEs are and what they do.** This spring, OSPE members and staff met with 16 Ohio legislators to discuss various policy initiatives. In our meetings we developed some new relationships and renewed others as we underlined the fact that PEs are absolutely essential to protecting the public health, safety and welfare.
- **OSPE is supporting House Bill 159** – legislation that protects PEs from being forced to indemnify third parties beyond the scope of the PE's work product in contracts to design public improvements. We are awaiting the opportunity to present testimony written by Devon Seal, MBA, PE – OSPE's newly installed president.
- **We are also supporting House Bill 189, Tyler's Law,** to improve amusement ride safety. Thanks to the efforts of OSPE Past President Dave Dexter, PE, FNSPE, and OSPE member Henry Dammeyer, PE, we successfully added an amendment to the bill that would add a PE to a safety advisory board. We are now preparing to lobby the Senate to pass the legislation.
- **OSPE is opposing House Bill 258 (as written),** legislation that would allow an applicant to use the completion of a registered apprenticeship program to satisfy the education requirement for a PE

registration. Among our concerns, it is unlikely that the employers of PEs would hire someone who did not have an accredited engineering degree regardless of that person's participation in an apprenticeship program. In addition, such legislation undermines the portability of the Ohio PE license for registrants with apprenticeships. NCEES model law for PE licensure calls for a bachelor's degree in engineering from an EAC/ABET-accredited program. Therefore, any potential law allowing an apprenticeship in place of an ABET education would prevent the resultant Ohio PEs from obtaining comity in other states and territories.

- **OSPE is also opposing House Bill 263 (as written),** which would remove from Ohio Revised Code 4733 a reference disqualifying from PE licensure anyone who is not of "good character and reputation." Furthermore, the bill would require our registration board to devise a list of specific crimes directly related to the duties and responsibilities of the engineering license that would disqualify someone from practice. Of note, for a disqualifying offense (other than offenses of violence or sexually-oriented offenses), the State Board of Registration for Professional Engineers and Surveyors would only be permitted to disqualify an individual applicant for five years from the applicant's last interaction with the justice system. Five years and one day later, it would no longer be considered a disqualifying offense. (For violent crimes and sex crimes, the legislation would allow that these individuals may always be disqualified from licensure regardless of the length of time that passes.)

Members, please stay vigilant on these topics and let us know if you hear of any policy initiatives of which we should be aware. E-mail OSPE@Ohio-Engineer.com or call 1-800-654-9481 (in Columbus, 614-223-1144).

OSPE bill tracking summary

REDUCE REGULATORY RESTRICTIONS, House Bill 115 (Riedel, Roemer) & Senate Bill 1 (McColley, Roegner)	To require certain agencies to reduce the number of regulatory restrictions.	<u>Status:</u> HB 115: 4/10/2019 - House State and Local Government, (Second Hearing). SB 1: 6/12/2019 - House State and Local Government, (First Hearing)
MILITARY-TEMPORARY LICENSURE, House Bill 133 (Perales, Weinstein), Senate Bill 7 (Lehner, Hackett)	To require state occupational licensing agencies, under certain circumstances, to issue temporary licenses or certificates to members of the military and spouses who are licensed in another jurisdiction and have moved to Ohio for military duty.	<u>Status:</u> HB 133: 6/19/2019 - Passed by House, Vote 97-0. SB 7: 5/22/2019 - House Armed Services and Veterans Affairs, (First Hearing)
INDEMNITY PROVISIONS, House Bill 159 (Blessing)	To regulate the use of indemnity provisions in professional design contracts related to public improvements.	<u>Status:</u> 4/30/2019 - House Civil Justice, (Second Hearing). <i>OSPE supports legislation.</i>
OPERATING BUDGET, House Bill 166 (Oelslager)	To make operating appropriations for the biennium beginning July 1, 2019, and ending June 30, 2021, and to provide authorization and conditions for the operation of state programs.	<u>Status:</u> 6/25/2019 -Conference Committee, (First Hearing)
AMUSEMENT RIDE SAFETY, House Bill 189 (Patterson, Blessing)	To revise the laws governing amusement ride operation and safety, to designate this act as "Tyler's Law," and to declare an emergency. <i>Amendment adds a PE to the safety advisory board.</i>	<u>Status:</u> 6/26/2019 - Senate Agriculture and Natural Resources, (First Hearing). <i>OSPE supports legislation, as amended.</i>
OPERATING BUDGET, House Bill 166 (Oelslager)	To make operating appropriations for the biennium beginning July 1, 2019, and ending June 30, 2021, and to provide authorization and conditions for the operation of state programs.	<u>Status:</u> 4/4/2019 - House Finance Primary and Secondary Education Subcommittee, (Sixth Hearing)
OCCUPATIONAL LICENSE-APPRENTICESHIP, House Bill 258 (Powell)	To require a licensing authority to issue an occupational license to an applicant who completes a registered apprenticeship program and meets other requirements for licensure.	<u>Status:</u> 6/5/2019 - House Economic and Workforce Development, (First Hearing). <i>OSPE opposes legislation, as written.</i>
OCCUPATIONAL LICENSING-CRIMINAL CONVICTIONS, House Bill 263 (Koehler)	To revise the initial occupational licensing restrictions applicable to individuals convicted of criminal offenses.	<u>Status:</u> 6/12/2019 - House Commerce and Labor, (First Hearing). <i>OSPE opposes legislation, as written.</i>
STATEWIDE WATERSHED PLANNING, Senate Bill 2 (Peterson, Dolan)	To create a statewide watershed planning structure for watershed programs to be implemented by local soil and water conservation districts.	<u>Status:</u> 6/19/2019 - Referred to Committee House Energy and Natural Resources
SCHOOL FACILITIES ASSISTANCE, Senate Bill 4 (Rulli, Kunze)	To make a capital appropriation for school facilities assistance.	<u>Status:</u> 7/2/2019 - Informally passed
DAMAGES LIMITATION EXEMPTIONS, Senate Bill 46 (Eklund)	To expand the exemption from punitive or exemplary damages limitations in tort law that is related to certain felony convictions.	<u>Status:</u> 3/19/2019 - Senate Government Oversight and Reform, (Second Hearing)
REGISTERED DESIGN PROFESSIONALS, Senate Bill 136 (Hottinger, Sykes)	To establish a payment assurance program for registered design professionals.	<u>Status:</u> 6/18/2019 - Senate Government Oversight and Reform, (First Hearing)

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