

2019 PEO Annual Conference Workshop | Classes | Tours | Exhibits

Wednesday, May 15, 2019

9:00 – 3:30 WORKSHOP - Impactful Writing - How to Achieve It by William Nesbitt - The presentation defines the characteristics of impactful writing and the qualities necessary to achieve it. The focus is on writing that encourages and often requires personal expression—to motivate or change attitudes, as well as to educate/inform; to appeal to a range of audiences, not just technical peers; and to express strong opinion and present clear conclusions. It includes examples of ‘good’ and ‘poorly written’ material and exercises to demonstrate how to sharpen writing and editing skills.

PLUS What You Say & How You Say It Makes A Difference by Arty Trost - The foundation of influence is the validity and soundness of the content or idea itself. Your skills and experience as a Professional Engineer give you the tools to make substantive contributions. Too often, however, even the best ideas and recommendations may fall on deaf ears if the interpersonal dimension of influence is overlooked. This portion of the workshop will provide you with specific techniques for defining the issues, clarifying your sphere of influence, framing your recommendations, and building your credibility.

3:40 – 5:00 TOUR Limited to 2 Groups of 12: George W. Peavy Forest Science Center (College of Forestry headquarters) & A.A. “Red” Emerson Advanced Wood Products Lab on OSU campus. Meet at the CH2M Hill Alumni Center at 3:40 pm.

Thursday, May 16, 2019

7:00 BREAKFAST / REGISTRATION / EXHIBITS OPEN

7:45 WELCOME - David Y. Etchart, P.E., PEO President

8:00-9:00 KEY NOTE – Driving Innovation: How engineers hold the keys to Oregon’s economy

Scott Ashford, Kearney Professor & Dean of the College of Engineering - Oregon State University

Dean Ashford will discuss how continuous innovation is needed for Oregon to thrive, and how creative partnerships can fuel our state’s economy.

It’s no secret that many of Oregon’s most innovative employers are being driven by engineers. And the availability of an innovative workforce is what will attract new companies to Oregon, and keep the ones we have. Where can innovation take the state, and what can we do as professional engineers to make it happen?

POLICY/MANAGEMENT/TECHNICAL TRACK

9:10-10:10 Oregon’s Energy Portfolio - Adam Schultz, ODE, Oregon Public Utility Commission This presentation will cover where we get our electricity, liquid fuels, and natural gas and how are those sources changing over time and what impact does that have on the state’s ability to meet its climate goals. How to evaluate the state of energy resilience and address questions of preparedness of our energy systems to withstand and recover from major disruptions like those expected from a Cascadia Subduction Zone earthquake.

10:10 BREAK / EXHIBITORS

10:30-11:30 Fluorescence Image-Guided Surgery for Improved Clinical Outcomes Dr. Summer Gibbs, PhD, Associate Professor, Biomedical Engineering, Knight Cancer Institute, OHSU Center for Spatial Systems Biomedicine - Learn about the development of novel nerve- and cancer-specific fluorescent contrast agents for FGS application will be presented. FGS has the potential to revolutionize surgery by enhancing visualization of specific tissues intraoperatively.

11:30 LUNCH - EXHIBITORS “Tuskegee Airman – To the Moon, Mars, & Beyond”, the story of his father, Tuskegee Airman Ben "Flaps" by Berry Ben Berry

1:00 – 2:00 Panel Leveraging Process & Talent for Better Outcomes Keith Kearsley, PE, President, Focused Engineering LLC, Senior Vice President of Rocking Inc. Panel - Cory Mefford, Collins Aerospace, Robert Roedts, Columbia Helicopter, Humam Talhami, Cascade Corporation & Josh Smith, Nautilus Inc. - Panel will share What are we doing well? What could we be doing better? How can engineers promote continuing education, ethics, and public safety both within and without the corporate exemption?

2:10-3:10 Continuation Panel Leveraging Process & Talent for Better Outcomes

TECHNICAL TRACK

Application of Reinforcement Learning to Construction Engineering

Prasad Tadepalli, PhD & Joseph Louis, PhD, Oregon State University

The continued renewal and maintenance of civil infrastructure systems is paramount. This class will cover the diversity of the networks (sewage, transportation, water etc.) that comprise these infrastructure systems, their maintenance operations have similar traits such as being temporary, transient and involving complex collaborations with man, machine, and the physical environment.

Agricultural Innovation Through Big Data, Sensing Automation, & On-the-Ground Practices to Meet Our Future Demands -

Chad Higgins, PhD, Oregon State University - Agricultural innovation can incorporate advances from other fields: technological innovations, AI and big data are on the horizon. Agricultural innovations are also initiated from grand challenges that face food fuel and fiber producers.

Artificial Intelligence: Myths & Realities Julie A. Adams, PhD, Oregon State University, Computer Science - While the media and Hollywood may lead you to believe that artificial intelligence will either solve all the world’s problems or will be humans’ nemesis, the reality is that this technology faces significant limitations. Self-driving cars and machine learning applications are frequently in the headlines, but daunting hurdles remain to be resolved before this technology is ubiquitous.

Update on Climate Change Edward Brooke, PhD, College of Earth, Ocean, & Atmospheric Sciences, Oregon State University - The trajectory forward, the 2050 net zero GHG global goal, and the role of design professionals in affecting that trajectory - Detailed studies of Earth’s past climate place modern changes in context and show how unusual the rate and magnitude of current changes are. Projections of near future change put us in virtually uncharted territory. Limiting climate change impacts requires fast action because future change is already “baked in” to the earth system. Engineering innovations are part of the solution.

3:10 BREAK / EXHIBITORS

3:30-4:30 TOURS of 2 Labs on OSU Campus
O.H. Hinsdale Wave Research Lab - Pedro Lomonaco, PhD
Structural Materials Lab/ Green Building Materials Lab - Christopher Higgins, Ph.D., P.E. (NY)
 Attendees may take a shuttle or can drive. Maps will be provided. Meet Shannon Souza at facility entrance.

Use of In-Situ Liquefaction Testing to Guide the Port’s Seismic Resilience Planning Armin Stuedlein, PE, PhD, Oregon State University - Portland engaged OSU to conduct large-scale in-situ tests to establish the seismic response of soils underlying PDX. A series of blasting tests were conducted to excite the targeted soil sensors to allow the observation of the seismic soil performance. This presentation provides an overview of the seismic hazards facing the Port, the basis for conducting the in-situ tests, videos of the experiments, and preliminary results to-date.

5:00 – 9:00 RECEPTION / YOUNG ENGINEERS RECEPTION / DINNER/AWARDS BANQUET /INSTALLATION OF OFFICERS

Friday, May 17, 2019 Classes & Schedule

7:30	Order of the Engineer Ceremony – Tamara Pitman, PE, Link Chair	
10:00-2:00	OPTION TO ATTEND vs. CONFERENCE SPEAKERS Engineering Undergraduate Expo Kelley Engineering Center, Johnson Hall & Community Plaza - OSU undergraduate students will share their work through the use of models, demonstrations, and posters. Attendees will have the opportunity to interact directly with individual students, ask questions, and exchange ideas.	
	POLICY/MANAGEMENT/TECHNICAL TRACK	TECHNICAL TRACK
8:00-9:00	PUC Docket Updates & What They Mean For The Electricity Mix/ Market - Elaine Prause, Deputy Director of the Utility Division, OPUC - How does the current regulatory structure help or hinder this technological transition while continuing to provide safe, reliable service that's affordable for all customers? The Oregon Public Utility Commission is working with stakeholders to evolve our electric system, including distribution system planning, PURPA 2.0, & performance based regulation.	Registration, Investigations, & Other Board Processes Board Member or Staff, OSBEELS
9:10-10:10	Panel Unmanned Aircraft Systems Darryl Abling, PUR Range Manager, Jason Schwartz, Port of Portland, Airside Operations Planner, Christopher Glantz, PLS, ODOT, Deputy Chief of Surveys, Lead Remote Sensing Surveyor Engineering Automation – Geometronics – This class will cover the role of the FAA Approved UAS Test Ranges in integrating UAS into the National Airspace System & work that the Pendleton UAS range is doing in support of the NASA Systems Integration & Operationalization demonstration planned for the summer of 2020.	Water Resources, Reservoir Operations, & Climate Change In The Willamette Valley Desiree Tullos, PhD, PE, Professor, Biological & Ecological Engineering Department, Oregon State University - Dr. Tullos will share the results of a study that examined the individual & collective changes in reservoir performance at the thirteen flood regulation projects within the Willamette River Basin (WRB) in Oregon with sufficient hydrologic & operational resolution to identify if climate & operational changes were likely to exceed the capacity & flexibility of the system.
10:10	BREAK / EXHIBITS	
10:30-11:30	Continuation Panel Unmanned Aircraft Systems	Concentrating Solar Power - Gustavo Buhacoff, Director, O&M, BrightSource Energy, Inc. Solar thermal tower technology can be deployed with thermal energy storage to concentrate the sun's energy & produce power when it is most needed. A combination of software, electrical & mechanical innovations allow cost reductions & higher efficiencies for power, EOR, desalination & industrial applications.
11:30	LUNCH / PEO MEMBER MEETING	
1:00-2:00	Panel on Autonomous & Zero Emission Vehicles Andrew Dick, ODOT, Connected, Automated, & Electric Vehicle Advisor, Eric Hesse, PBOT, Supervising Planner for Policy Innovation & Regional Collaboration, Janette Shaw, Forth, Director Government Relations – Presentation on Electric vehicles & learn what the State of Oregon is doing to prepare for the future of mobility. How Autonomous vehicles create new opportunities to advance community goals for mobility, access, equity, safety, public & environmental health, even as it presents risks that could worsen outcomes in those areas. Learn what Portland is doing to engage these technologies.	Engineering Ethics David Martini, PE, NSPE President Elect - The presentation will include an overview of engineering ethics along with case studies that will give participants the chance to consider scenarios where the Board of Ethical Review has issued opinions.
2:10 - 3:10	Panel on Autonomous & Zero Emission Vehicles Continuation of above	The Pacific Marine Energy Center (PMEC) & The Opportunity for Marine Energy – Bryson Robertson, PhD, PE, Associate Professor, Civil & Construction Engineering, Oregon State University - The presentation will provide an overview of PMEC, opportunities & challenges for the development of marine energy, & the role Oregon has in this global effort. The PMEC is a collaboration between Oregon State University, University of Washington & University of Alaska Fairbank, focused on facilitating marine energy technology commercialization, informing policy & regulation, & educating the workforce of tomorrow.
3:10	BREAK	
3:30-4:30	American Society of Civil Engineers - Oregon Infrastructure Report Card Mark Libby, PE, HDR - The Oregon Section of ASCE Spring 2019 Infrastructure Report Card addresses the conditions of our infrastructure in 14 categories including: Aviation, Bridges, Dams, Drinking Water, Energy, Hazardous Waste, Inland Waterways, Levees, Ports, Rail, Roads, Solid Waste, Transit, & Wastewater. The report card evaluates 8 key criteria for each category: Capacity, Condition, Funding, Future Need, Operation & Maintenance, Public Safety, Resilience, & Innovation. This presentation will provide an overview of the process & results of the report card.	

Classes are subject to change without advance notice.

Lodging at Hilton Garden Inn – Parking available to hotel guests.

All Others - Parking passes are required between 7am-5pm on weekdays. Parking is \$1/hour for up to 4 hours or \$10/day in the lot behind our building, the parking garage and across the street at Reser Stadium. You can purchase parking permits at kiosks upon arrival, or purchase a daily parking permit online:

<https://transportation.oregonstate.edu/parking/visitors>