

2017 ENGINEERING SYMPOSIUM IN ROCHESTER

www.engineeringsymposiumrochester.com

April 18, 2017

PDH hours will be acceptable in New York State. Schedule subject to change.

7:30 to 8:15	Registration and Continental Breakfast					
8:15 to 8:30	Welcoming Remarks: Chris Devries, Chair of the 2017 ESR Committee					
	Civil Engineering Sponsored by ASCE	Civil Engineering Sponsored by ASCE	Mechanical Engineering Sponsored by ASME	Electrical Sponsored by IEEE	Mechanical, Plumbing, & Fire Protection Sponsored by ASHRAE and ASPE	Lighting and Power Sponsored by Elect. Assoc. of W N Y
Room	Grand Ballroom, (E,F,G)	Regency Ballroom A	Regency Ballroom C	Regency Ballroom B	Loftus C. Carson Room	Wilmore Room
Host	Jim Baker	Tim Webber	Ron Salzman	Dave Krispinsky	Jennifer Wengender	Joe Dombrowski
8:30 to 9:30	<p style="text-align: center;">NY2148 STAMP Infrastructure Case Study</p> <p style="text-align: center;">Andrew Kosa & Thomas Carpenter</p> <p>A case study for the design and permitting of infrastructure required for the Science & Technology Advanced Manufacturing Park (STAMP) located in the Town of Alabama, Genesee County, NY</p>	<p style="text-align: center;">PIE 20150511 ADS High Performance HP Sanitary Sewer Solutions</p> <p style="text-align: center;">Ian Kuchman, Rob LeMire & Tom Gable</p> <p>ADS will be presenting on different types of sewer pipe, and differentiating the specifications that make various types of pipe unique, including AASHTO LRFD structural design, material engineering properties, and joint performance / post-installation inspection.</p>	<p style="text-align: center;">NY2155 The Heat Treatment and Press Quenching of Steel Alloys</p> <p style="text-align: center;">Art Reardon, PhD, PE</p> <p>The heat treatment of steel alloys is discussed in detail with the focus on press quenching, which is used to minimize distortion in complex geometries.</p>	<p style="text-align: center;">NY2160 Magnetics for Modern Power Supplies</p> <p style="text-align: center;">Ram Dhurjaty, Ph. D</p> <p>This talk will focus on magnetics for modern power supplies. The topics will include discussion of magnetics, for buck, boost converters as well as flyback converters, and Resonant converters. Design considerations for magnetics will be described.</p>	<p style="text-align: center;">NY2165 2016 NYS Code Changes: Mechanical, Plumbing/FP, Energy</p> <p style="text-align: center;">Jennifer Wengender, PE</p> <p>A comparison of significant changes between the 2010 NYS Codes and the 2016 NYS Codes, specifically related to the Mechanical and Plumbing/FP disciplines.</p>	<p style="text-align: center;">NY2172 MEP Seismic And Wind Provisions of ASCE 7-10</p> <p style="text-align: center;">Richard Sherren P.E.</p> <p>The seismic and wind restraint required for mechanical, electrical, and plumbing Components in the latest building code of the state of New York are taken from ASCE 7-10. There are several new provisions of which engineers and contractors must be aware of.</p>
9:30 to 9:45	Break					
9:45 to 10:45	<p style="text-align: center;">NY2149 3D HD Scanning For AECO Professionals</p> <p style="text-align: center;">Greg Hale</p> <p>From inexpensive collection practices such as photogrammetry to the decreasing cost of laser scanners, the tools that make 3D capture possible are becoming more cost effective and available to a wider audience.</p>	<p style="text-align: center;">KHH Structural Building Conditions Reviews: Beyond Distress</p> <p style="text-align: center;">James D'Alosio, PE</p> <p>"What is the appropriate level of investigation when conducting a structural building condition review?"; The author proposes a decision matrix which takes into account more than visually apparent signs of structural deficiency in an existing building.</p>	<p style="text-align: center;">NY2158 Application of Fatigue and Fracture Analysis</p> <p style="text-align: center;">Ronald Salzman, PhD, PE</p> <p>Presentation on methods of fatigue analysis: Stress-Life, Local Strain and Fracture Mechanics. Description of new corrosion fatigue test methods (ultrasonic testing) and results. This presentation integrates fracture mechanics with crack initiation at a pit.</p>	<p style="text-align: center;">NY2161 High Voltage Direct Current - Powering the Future</p> <p style="text-align: center;">Girish Behal</p> <p>This discussion will be about the development and demise of various energy sources in the last 300 years or so and what to look forward to in the future</p>	<p style="text-align: center;">NY2166 Lead in Drinking water: Testing and Building Systems Implications</p> <p style="text-align: center;">Jeff Baldwin and Gene Faasse</p> <p>A review of the timeline of Codes related to Lead requirements in drinking water and the evolution of plumbing products and Testing required to comply.</p>	<p style="text-align: center;">NY2171 Energy Efficiency Improvement in Electrical Distribution Systems and their Loads</p> <p style="text-align: center;">Gregory Ferguson</p> <p>Electrical distribution systems are subject to penalty losses and reduced efficiency due to harmonic reactive and unbalanced load currents.</p>
10:45 to 11:00	Break					
11:00 to 12:00	<p style="text-align: center;">NY2020 Civil Engineering Applications of Drones</p> <p style="text-align: center;">Chris Cornwell, PE and Casey Knapp, PE</p> <p>The presentation will provide a summary of history and growth of the drone industry, types of drones, and available software packages and processing methods.</p>	<p style="text-align: center;">NY2150 Carriage Factory Brownfield Site - Environmental Redevelopment Lessons to Learn</p> <p style="text-align: center;">Mike Storonky</p> <p>This presentation will review some of these challenges including contaminated soil, groundwater, soil vapor and building issues such as lead-based paint, asbestos and mold associated with brownfield redevelopment.</p>	<p style="text-align: center;">NY2156 Safety Culture and Safe Sealing-Anacortes Refinery Explosion</p> <p style="text-align: center;">James Drago, P.E.</p> <p>The naphtha heat exchanger explosion and fire in 2010 at a refinery in Anacortes, WA shows how deadly accidents can occur when the safety culture degrades and flange-joint leakage is accepted as normal.</p>	<p style="text-align: center;">NY2162 Grid Tied PV Array Economics</p> <p style="text-align: center;">Rick Church, PE</p> <p>Different PV cell technologies are investigated, with benefits and drawbacks of each shown. System design constraints for the average homeowner are discussed. A cash flow analysis, with factors to be considered, is also presented</p>	<p style="text-align: center;">NY2167 The Basics of Building Fire Protection Design</p> <p style="text-align: center;">Ted Sherwood, P.E., CFPS</p> <p>Presentation includes a step by step process to; determine code requirements, identify what type to system to use and help the Owner comply with NFPA inspection, testing, and maintenance requirements for Building fire protection designs.</p>	<p style="text-align: center;">NY2173 NEC Requirements for Generators</p> <p style="text-align: center;">Steven Huber and Robert Sweeney</p> <p>NEC implications for stand by (legally required and "life safety") power systems</p>
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12:00 to 1:30	<p style="text-align: center;">NY2177</p> <p style="text-align: center;">Lunch and Keynote Program <i>Martin E. Gordon, P.E. Professor, MMET Undergraduate Program Director, Rochester Institute of Technology</i></p> <p style="text-align: center;"><i>Forensic Engineering: Engineering Applied to the Law</i> - This presentation will explain what Forensic Engineering is and what a Forensic Engineer does. It will explore the process of becoming a Diplomate Forensic Engineer (DFE). Case examples will be used to illustrate the interesting yet challenging work that Forensic Engineers do.</p>					
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Room	Grand Ballroom, E,F,G	Regency A	Regency C	Regency B	Loftus C Carson Room	Wilmore Room
Host	Erin McCormick	Paul Presutti	Steve Ivancic	Dave Krispinsky	Christina Walter	Joe Dombrowski
1:30 to 2:30	<p style="text-align: center;">NY2151 Lead in Drinking Water & New Regulations for Schools</p> <p style="text-align: center;">Clem Chung, P.E.</p> <p>This presentation will review the hazards from lead poisoning, the sources and mechanisms of lead contamination of potable water, and the differences between programs designed to identify, evaluate, and mitigate risks associated with this hazard.</p>	<p style="text-align: center;">NY2152 South Cascade Drive/Miller Road over Cattaraugus Creek Design Build Project</p> <p style="text-align: center;">Sam Anthony and Cold Springs</p> <p>The presentation will discuss the design build procedure, load cases governing the design, structural analyses employed, weathering steel for framing, metalizing of fascia girders, and use of mass concrete for substructure concrete.</p>	<p style="text-align: center;">PIE 20170078 Global warming caused by Human Activity</p> <p style="text-align: center;">Michael Patterson</p> <p>Global Warming caused by burning fossil carbon. Powerpoint that present graphics that are available from the internet.</p>	<p style="text-align: center;">NY2163 The Internet of Things and Wireless QoS</p> <p style="text-align: center;">Joseph Nygate, Ph.D</p> <p>Our connected world is enabled through the use of wireless technologies such as LTE and W-Fi to deliver ubiquitous high speed connectivity. This talk describes what these technologies offer and where the telecommunications market is headed</p>	<p style="text-align: center;">AR0047 Operating Room Air Distribution Solutions</p> <p style="text-align: center;">Dennis Sikkema</p> <p>The presentation will cover operating room standards and guidelines for air distribution, airborne contamination, system sizing and diffuser considerations.</p>	<p style="text-align: center;">NY2174 LEDs Transforming the Future of Lighting</p> <p style="text-align: center;">Thomas Nowakowski</p> <p>An exploration of three phenomena creating significant disruption, challenge and opportunity in lighting.</p>
2:30 to 2:45	Break					
2:45 to 3:45	<p style="text-align: center;">PIE 20160430 Geosynthetic Solutions for Paved and Unpaved Applications</p> <p style="text-align: center;">Doug McCluskey</p> <p>This presentation covers the use of pavement reinforcement products to retard reflective cracking in asphalt overlays to add life to the overlay and reduce maintenance costs and paving intervals. Also discussed are Tensar Geogrids.</p>	<p style="text-align: center;">NY2153 Bridge Deck Preservation Methods</p> <p style="text-align: center;">John Picard</p> <p>The presentation will discuss ways to increase the service life of concrete bridge decks. Different deck preservation methods including concrete sealers and thin polymer overlays will be discussed using project examples of bridges in New York State.</p>	<p style="text-align: center;">NY2159 Climate Change Mitigation – Engineering & Policy Solutions</p> <p style="text-align: center;">William Bishop, PE</p> <p>Climate change mitigation vs. adaptation; geoen지니어ing and carbon capture; energy scenarios using fossil fuels, nuclear and renewables, energy efficiency; carbon sinks and reforestation; policy options</p>	<p style="text-align: center;">NY2164 Biomedical Imaging and Visualization for Computer-Integrated Diagnostic and Surgical Data Science</p> <p style="text-align: center;">Dr. Cristian Linte</p> <p>The lecture will showcase both technologies and techniques available and also under development for image-guided survival interventions.</p>	<p style="text-align: center;">AR0048 Principles of Laboratory Design and Fume Hood Operation</p> <p style="text-align: center;">James Hall</p> <p>An overview of key design principles for laboratories including how fume hoods work, a review of VAV and CV applications, control strategies, and the recently updated ASHRAE 110 standard.</p>	<p style="text-align: center;">NY2175 Fire Alarm System Fundamentals</p> <p style="text-align: center;">Micheal Baker</p> <p>A review of modern fire alarm systems including component review and system architecture</p>
3:45 to 4:00	Break					
4:00 to 5:00	<p style="text-align: center;">NY2138 Semi-Automated Masonry</p> <p style="text-align: center;">Zachary Podkaminer</p> <p>Robots are extensively used in manufacturing and production environments today but there are few used in construction today. We will discuss the status of SAM and the future of Construction Robotics.</p>	<p style="text-align: center;">NY2154 Sense of Space Urban Parking Issues</p> <p style="text-align: center;">Bill Price</p> <p>Topics discussed will include the parking goals for an urban area, identifying if there is a parking problem, establishment of a parking study, understanding the existing conditions, and parking resource/management strategies</p>	<p style="text-align: center;">NY2157 Intellectual Property Baseline for Engineering Teams</p> <p style="text-align: center;">Wayne Evans & Scott A. Brairton</p> <p>A basic strategic understanding of the Intellectual property process clarifies and smooths the path for both engineers and patent practitioners. This will focus on good practice, patent prosecution logistics, timelines and requirements.</p>	<p style="text-align: center;">PIE #20160025 Surge Suppression Devices for Consulting Engineers</p> <p style="text-align: center;">David Komm</p> <p>History, technology and application of surge suppression devices</p>	<p style="text-align: center;">AR0049 You Can't Afford Discomfort: Designing predictable energy efficient buildings with detail to occupant comfort</p> <p style="text-align: center;">Dan Int-Hout</p> <p>This presentation will explore how strategies that add to the first, renovation, or operating cost of a space have to be weighed against the potential for reduced productivity when calculating the time to payback.</p>	<p style="text-align: center;">NY2176 How To Dim Led Lamps And Fixtures Without Adding Wires</p> <p style="text-align: center;">Mike Piraino</p> <p>A review of dimming options available when running 0 to 10 vdc control wire is not a viable option</p>
5:00 to 7:00	Cocktails and Conversation in the Lounge (Main Street Gallery)					