Feb. 13-14, 2025 E-Week Seminar Descriptions

Introductory = New to the engineering field, with little or no experience such as students.
Intermediate = A few years of experience in the field of engineering with a desire to build on it.
Advanced = A "seasoned" engineering professional with many years of experience.

T = Thursday Seminar and **F =** Friday Seminar

Note: Some of these seminars might have been offered at other locations. It is your responsibility to determine what seminars you want to attend.

BRIDGES:

T - Saving New York's Historic Truss Bridges – Intermediate
By: Peter Melewski, PE, F. ASCE; Peter Melewski, LLC - melewski@gmail.com
Following up on the 2021 "Save the Bridges" E-Week Presentation, this seminar provides new information on the 12 bridges, plus an overview of other recently threatened historic steel trusses over rivers, streams and railroads in Eastern New York. Technical, contractual, and budgetary challenges will be discussed. Several bridges are currently in the design or construction phase. Input from key bridge stakeholders will be included. If you love truss bridges, this seminar is for you.

T - Pulling Bridges Back from the Brink – Intermediate
By: Peter Melewski, PE, F. ASCE; Peter Melewski, LLC - melewski@gmail.com
Several historically significant truss bridges are currently on the brink of being lost forever if corrective action does not occur in 2025. Using up to the minute information, the historical and engineering significance of each bridge will be discussed. What factors (design details, maintenance, etc.) drove these beloved bridges to the brink? Current safety concerns, as well as potential technical, safety, and management mgt. solutions to pull them back from the brink will be discussed.

T - Emergency Replacement of the Annsville Culvert – Intermediate
By: Troy Soka, PE; NYSDOT – Structures - troy.soka@dot.ny.gov
This presentation will describe the emergency replacement of US 6 over the Annsville tidal marsh, part of the Hudson River Estuary, in Peekskill, NY. We will explain the design challenges and the resulting compromise that allowed for the expedited replacement of the existing structure while still meeting the long-term objectives of the future overlapping Annsville Flood Mitigation Project. Additionally, we will explore the numerous site constraints that made this small bridge replacement very challenging.

T - Post Fire Evaluation of Route 14 over Chemung River – Intermediate
By: Bradley Gates; NYSDOT - bradley.gates@dot.ny.gov
The presentation covers that chain of events and evaluation techniques used to determine the post fire strength and safety of NY 14 over Chemung River.

BUILDINGS:

F - TRM029: Roof Preservation: A Sustainable Option – Introductory

By: Brad Farrs; Tremco CPG - bfarris@tremcoinc.com

This course is a discussion about extending the service life of an existing roof through restoration. We will explore the options and materials available and identify which types of roofing systems are best candidates for roof restoration. This course also delves into the economics and environmental benefits of roof restoration. Project photos will be reviewed and discussed.

F - Cracked Masonry Adhesive Anchor Design: Are you ready? – Intermediate

By: Derek Gilbert, PE; Simpson Strong-Tie - degilbert@strongtie.com

This seminar reviews the recent changes to the ICC acceptance criteria document AC-58. It highlights the new design provisions for the qualification and design of post-installed adhesive anchors in hollow and grout-filled cracked concrete masonry unit (CMU). A complete design example is presented, along with helpful, time-saving design resources and tools.

F - Post-Installed Anchor Special Inspections and Field Testing – Intermediate

By: Derek Gilbert, PE; Simpson Strong-Tie - degilbert@strongtie.com

This webinar reviews post-installed anchor installation procedures, special inspection requirements, field inspection methods, field testing types, and proof load determination in masonry and concrete base materials. The presentation is especially useful for building officials and engineering firms actively engaged in field inspection and testing.

CIVIL:

T - Trenchless Culvert Rehabilitation: Design & Installation Methodologies – Intermediate

By: Alex Sherrod - asherrod@precisionpipe.com and Dan Dammann - ddammann@precisionpipe.com - Precision Pipe & Products, Inc.

This presentation will provide a review of the common factors that lead to culvert deterioration and failure, and provide a detailed look at the design and installation methodologies that influence the effective use rigid slip-line systems.

F - Best Uses and Applications for Plastic Stormwater Chambers – Intermediate

By: Taylor Abbott; Cultec / ADS - Taylor.abbott@cultec.com

The presentation will go over stormwater chamber management practices. And is focused on different methods of subsurface water retention/detention methods, and when best to utilize different options. The presentation will pay particular attention to chamber systems and the benefits of designing with chambers for different situations.

F - Stormwater Management - Surface Water Drainage and Underground Attenuation Systems – Intermediate

By: Michael Fortuna; ACO USA - Michael.fortuna@aco.com

Stormwater Management products for surface water and underground attenuation systems. Design considerations, different types of trench drain products how to determine size of drains, drain grates – load requirements, water intake, aesthetic considerations.

F - Large Diameter HDPE Pipe for Water Management - Intermediate

By: Adam Sapp, PE; Soleno USA - Adam.sapp@soleno.com

KUSTOMFLO pipe is made from High-density polyethylene (HDPE) using world-renowned KRAH technology, resulting from an adaptive process that allows the optimization of the pipe profile to meet the specific needs of almost any project or applicable standard. This custom manufacturing approach, drawing on over 100 different profiles, lets you build to your unique specifications. It is currently available in diameters from 24” to 136” and manufactured at our facility in Saratoga Springs, NY.
The 1-hour Technical Presentation on the KUSTOMFLO technology will include:

- History of the development of the technology.
- Flexible Pipe Design - How the pipe is designed including all the parameters the Engineer needs to provide to properly design for the intended application.
- KUSTOMFLO product selection process.
- Applications including Storm drainage, CSO/wastewater trucklines, culverts, rainwater harvesting tanks, stormwater detention tanks, accessories, above ground storage tanks, low pressure applications….
- Case Studies

F - High Performance Permanent Erosion Control – Intermediate

By: Doug McCluskey; EJ Prescott - Doug.mccluskey@ejprescott.com

For applications where natural vegetation alone will not sustain expected flow conditions and/or provide sufficient long-term erosion protection, a permanent rolled erosion control product may be used. Permanent erosion control products provide the necessary performance properties to effectively control erosion and reinforce vegetation under the expected long-term site conditions. This presentation is designed to walk through the erosion control solutions that are available. We will discuss the importance of soil health and soil testing, turf reinforcement mats, and tied concrete block mat hard and soft hybrid solutions.

F - Differing site conditions: when bidding amounts to betting on the unknown – Intermediate

By: Ashraf Ghaly, PhD, PE; Union College - ghalya@union.edu

Accurately predicting site conditions is almost impossible. Contracts usually contain clauses addressing the possibility of differing site conditions (DSC). Contractors rely on such clauses to seek recovery for changes resulting from DSC. To shield themselves from liability, owners may also include disclaimers alerting bidders that they bear the risk for any encountered DSC. These conflicting provisions create confusion because of their contradictory message. Case studies will illustrate that owners and contractors can avoid lengthy and costly litigation by ensuring a clear understanding of unambiguous language of the contract being signed.

CONCRETE:

F - Concrete Pavement for Non-Highway Applications – Beginner

By: Heather Steffek; American Concrete Pavement Association – NYS Chapter - hsteffek@pavement.com

This course will take a historical look at existing non-highway concrete pavements throughout New York State, with some still in service after 100 years. Various types of concrete pavement including Roller Compacted Concrete, Concrete Overlays, and Plain Jointed Concrete Pavements will be discussed. We will take a look at examples of concrete pavement from city and village streets, intersections, airports, and industrial facilities. Thickness design tools for these applications will also be examined.

F - Rebar Types, Pros and Cons – Intermediate

By Frank Gerace; Hubbell Galvanizing - geracefp@whyrust.com

Engineers have to make many decisions on material choice. These choices often involve making tradeoffs between various materials. This seminar will discuss various types of concrete reinforcement and the advantages and disadvantages of each type of bar.

F - Concrete's Evolution to Sustainability – Intermediate

By: Bill Lyons; The Euclid Chemical Co. - wlyons@euclidchemical.com

The concrete industry for many years has had minor changes with their role being sustainable material. With the introduction of new cements, the opportunities to incorporate SCM's (Supplementary Cementitious Materials including Ground Glass), or the injection of carbon or the use of fiber reinforcement including plastic, are all contributing to the "greening" of concrete construction industry. The presentation will briefly highlight all of these phenomenon's.

Learning Objectives:

1. How do current Supplementary Cementitious Materials (SCM's) and the advent Ground Granulated Glass (GGG) play a part of sustainability?
2. The cement industry through the use of the change in manufacturing with Portland Limestone Cement (PLC) is working toward Carbon Neutral. Brief mention on new ACI 323 Low Carbon Concrete Code.
3. The concept of injecting CO2 technology and what does it mean for mix designs
4. The role of fibers reinforcement in the marketplace and how they can reduce the carbon footprint and their value of EPD's.

ELECTRICAL:

T - Offshore Wind Farm EMT Modeling with Grid Forming and Grid Following Converters - Intermediate

By: Thomas Ortmeyer; Clarkson University - tortmeye@clarkson.edu

This seminar presents an overview of recent and ongoing electromagnetic transient (EMT) simulations of offshore wind farm impacts on the New York bulk power grid. The topics covered will include wind turbine modeling, AC and DC undersea transmission impacts, and power quality, protection, and stability issues associated with offshore wind farms. The nature of grid forming and grid following inverter control will be discussed.

T - Surge Protection: A Guide to Sizing, Implementation, and Code Requirements – Intermediate

By: Robert DiMaggio; Eaton Corporation - RobertADiMaggio@Eaton.com

This presentation will discuss surge protection from the ground up including correct sizing, proper installation and implementation, and an up-to-date review of current code requirements.

T - Your Test Ended Badly - Can you trust the engineering data? – Intermediate

By: James Fogarty, PE; Peregrine Engineering Consulting - Jimfogarty.4683@gmail.com

The commander on the battlefield deals with incomplete and possibly wrong information. Something has just gone wrong. Something failed and you need to decide right now what to do. How good is the information coming to you? What can you trust? Is the system that just failed really what you think it is?

T - Paralleling Assets for Site Performance – Intermediate

By: Christopher Alexopoulos; Milton Cat Inc. - Chris_alexopoulos@miltoncat.com

This seminar discusses various paralleling strategies for generator sets and selecting best methods for critical sites. The discussion will include different paralleling control systems as well as designing for redundancy (N +1) and(N plus N").

T - Optimizing selection of Synchronous Condensers for Utility Applications – Intermediate

By: Arthur Depoian, PE; GE Vernova - Arthur.Depoian@ge.com

The transition of our Electric Grid requires Synchronous Condensers primarily to provide short-circuit strength, inertia, and dynamic voltage recovery. The presentation will explore options for selection and specification of equipment to optimize performance, initial costs, operating costs, and reliability.

F - Evaluating Harmonic Performance of Inverter-Based Resources – Advanced

By: Reigh Walling; Walling Energy Systems Consulting, LLC - rwalling@wesconsult.com

A substantial portion of new generating capacity added to the electric power grid is inverter based. Traditional approaches to evaluating harmonic performance, which have evolved from industrial applications, are inadequate in the case of large wind, solar, and energy storage plants using numerous voltage-source inverters. This presentation describes the harmonic evaluation procedure for IBR plants that will be recommended in the upcoming IEEE Standard 2800.2.

F - Measurement Data-Driven Power Plant Oscillation Monitoring and Damping Control Re-Design under Ambient Conditions – Intermediate - ***By: Luigi Vanfretti, PhD; Rensselaer Polytechnic Institute - luigi.vanfretti@gmail.com***

Using prediction-error identification methods, this talk introduces a measurement data-driven approach to monitor power system oscillations at a power plant, identify a data-based model using an input signal and redesign the plant's power system stabilizer damping controller to mitigate the observed oscillations under ambient conditions and multiple operating points. The advantage of the proposed methodology is that it only requires measurements and knowledge of the controller's structure, which are known by the power plant operator.

F - Secondary Systems – Intermediate

By: Rob Zerrillo; Liberty Electric Products - rzerrillo@libertyelectricproducts.com

Defining Primary and Secondary systems, adding comfort, Increasing Efficiency. Some types of secondary applications: Electric Comfort Heat, Portables, Duct Heaters, Electric Radiant Infrared heating, Electric Radiant Floor Warming, Thermal Mass Heating, Air De-stratification, HVLS / Open ceiling fans, Air Curtains.

ENVIRONMENTAL:

T - Falling Trees: an Underreported Hazard that will Worsen with Climate Change – Intermediate

By: Joseph Englot, PE; HNTB – jenglot@hntb.com

The seminar is for engineers, landscape architects and managers of developed properties who are responsible for the design, operation and state of good repair of private and public property, community streets, sidewalks and public utilities, to better protect both the public and building occupants from the hazard of falling trees through safe planning and maintenance.

T - Pressure Sewer For New Sewer or Sewer Repair – Intermediate

By: Greg Wall; Environment One – gwall@eone.com and Will Stradling; Siewert Equipment - wstradling@siewertequipment.com

This presentation will equip municipalities with the tools to make informed decisions when reviewing all alternatives for new sewers and sewer repairs. We will cover sewer feasibility, system improvements, and other pressure sewer applications, each supported by case studies. The session will provide a comprehensive one-hour overview for engineers, operators, and owners, enabling them to evaluate all available options for sewer projects.

T - An Engineer's Guide to Successful Vegetation Establishment – Intermediate

By: Peter Hanrahan, CPESC - Hanrahan Environmental, LLC - hanrahanenvironmental@yahoo.com

As construction activities wind down on construction sites, one the most powerful tools for consulting engineers is a solid understanding of the basics of establishing a solid stand of vegetation on the site. Many options are available, and this course will focus on the key factors that impact the development of a solid plan. Among the many considerations are site contours, soil analysis, seed selection, seed protection and more. The goal of this session will be to convey the key components to a successful plan.

T - No Square Pegs: Sustainable Stormwater Solutions for Complex Sites per NYSDEC Regulations – Intermediate

By: Mallory Wright, PE; Advanced Drainage Systems - mallory.wright@adspipe.com

NYSDEC recently introduced a revised Stormwater Design Manual with increased focus on Redevelopment Sites and Urban Areas, noting the interplay of Stormwater Design in CSO systems. This presentation will address stormwater management design and solutions for these difficult sites and advise designers of new ways to achieve resilient systems with a focus on capture, detainment, infiltration, and pollutant removal.

ETHICS:

T - Understanding the Regulated Interface of Professional Engineering and Professional Geology in New York State – Introductory to Advanced.

By: Eric Greppo, PE; NYSED - Eric.greppo@nysed.gov

Discussion of the regulated engineering and geological scopes of practice and their overlap and interface in New York State. Review of the State Education Department PE and PG licensee and business entity rules and regulations as they relate to offering professional design services in New York State.

F - Are Engineering Ethics and Generative Artificial Intelligence on a Collision Course? – Intermediate

By: Ashraf Ghaly, PhD, PE; Union College - ghalya@union.edu

Artificial Intelligence (AI) has matured to the point where users can query a system that uses a large language model (LLM) or a framework for generative content to get responses drawn from an existing large body of data. Both the content of the prompt entered by the user and the pool of available data affect the system's reaction. In Engineering where errors could be costly or even fatal, engineers should be mindful of the ethical and professional implications of employing such systems.

GEOTECHNICAL:

T - Geotechnical Emergencies Over the Years – Beginner to Intermediate

By: Mike Novak; NYSDOT – mike.novak@dot.ny.gov

This presentation will show Geotechnical Emergencies that the NYSDOT Geotechnical Engineering Bureau has responded to over the last 24 years.

F - Soil and Rock Nail Wall for Construction of Subterranean Auditorium in Central Wisconsin - Intermediate

By: William Walton, PE, SE, F.ASCE, BC.GE; GEI – bwalton@geiconsultants.com

NEED

STRUCTURAL:

T - Corrosion and our Infrastructure – Intermediate

By: Neville Sachs, PE; Neville W. Sachs, PE, PLLC - nevsachseng@gmail.com

We'll look at how and why corrosion occurs, how it affects our infrastructure, and some ways to both monitor it and eliminate it.

F - Archaic, Low-Carbon Structural Systems – (Offered at E-Week 2024) – Intermediate

By: Jim D'Aloisio, PE, LEED AP; Klepper, Hahn & Hyatt - jad@khhpc.com

A variety of different types of structural building systems have been used over the years, only to eventually fall out of favor. Today, most building construction is confined to a very narrow range of archetypes that are tried and true and leave little room for innovation. We'll revisit some old structural concepts that are no longer used, and some that are barely remembered. Maybe some of these strategies are worth revisiting, in this era of awareness of the need to reduce embodied carbon from our structures.

F - Structural Building Failures in NY – Intermediate

By: Jim D'Aloisio, PE; Klepper, Hahn & Hyatt - jad@khhpc.com

A compilation of significant and instructive structural building failures, including partial and complete collapses. We'll focus on lessons to be learned for the engineering design, construction, and condition reviews of buildings.
Stories include:

- East Coldenham Elementary School Cafetorium Wall, Valley CSD, 1989
- Smith Road Elementary School Cafetorium Roof, North Syracuse CSD, 1994
- Manufacturing Building Roof, Liverpool, NY, 1999
- Taft Road Elementary School Roof, Washingtonville CSD, 2004
- Marlboro Elementary School Library Ceiling, Marlboro CSD, 2010
- UHS Wilson Hospital Picciano Parking Garage, Johnson City, NY, 2015

TRANSPORTATION:

T - Performance Testing: New Criteria for Asphalt Mixtures – Intermediate

By: Bruce Barkevich; New York Construction Materials Association - bruce@nymaterials.com

The asphalt industry is moving quickly towards utilizing Performance Testing to continue to ensure asphalt will meet and exceed its life expectancy. The move toward Performance Testing will allow for continued innovation which has been baked into the industries DNA.

T - Airport and Port Products and their Design – Intermediate

By: Craig Coggins; EJ USA, Inc. - Craig.Coggins@ejco.com and Lee Veldboom, PE; ; EJ USA, Inc. – lee.velboom@ejco.com

This presentation will offer a comprehensive introduction and overview of the diverse range of products designed for infrastructure coverings, specifically tailored for the demanding conditions of airport and port loading areas.

T - Passengers are the Business – Trains are the Tools! – Intermediate

By: Wes Coates; HNTB - jcoates@hntb.com

It takes many facets of a railroad operation to carry passengers on a train. Railroads were once described a "System of systems," and passenger train service represents one of the more complex activities of operating a railroad. In this presentation, it will discuss Scheduling, Equipment, Stations, On Board Services and the challenges of delivering an on-time trip to the passenger.

F - Proper Placement of Asphalt Pavements – Intermediate

By: Bruce Barkevich; New York Construction Materials Association - bruce@nymaterials.com

Since COVID, the asphalt industry, as has all industries, has dealt with worker turnover. With turnover comes the loss of institutional knowledge. We need to make sure the mixtures produced are placed properly to give it the best opportunity to be successful. This program will give you some proper paving principles to help with this success along with tricks of the trade.

F - Asset Management in Critical Locations – Introductory

By: Trygve Hoff, PE; Government Relations & Sustainability of American Concrete Pipe Association – thoff@concretepipe.org

Asset Management provides agencies/owners both a long-term roadmap toward better supervision of asset inventories, as well as data necessary for logical material placement and usage. This information allows agencies to make sound engineering decisions backed by years of data, which in turn improves resilience of the infrastructure system and maximizes sustainability. In this session we will discuss the current issues and actions that impact such decisions in critical locations such as evacuation routes, flood prone areas, emergency access routes, and others. We will explore how asset management data can be used to help prepare for recovery from major natural disasters, and to determine the most appropriate mitigation planning.