

# VERMONT SOCIETY OF ENGINEERS



110th Annual Meeting - April 27, 2023 - Capitol Plaza, Montpelier

## 10 AM - 1 PM ANNUAL BOARD MEETING

Lunch will be available for anyone who is interested in joining the Board as we discuss our year past and our initiatives for the upcoming year!

## 1 PM - 5 PM TECHNICAL PRESENTATIONS

### 1 PM Conservation and Monitoring of Vermont's Endangered Bats | Meg Lout, VHB, Inc.

Meg will be giving a presentation about the uniquely collaborative effort amongst VHB, VTrans, the Vermont Fish and Wildlife Department, and the Vermont Bat Center that successfully contributes to the research and conservation of Vermont's bats. Meg will highlight an upcoming acoustic monitoring and mist-netting project in Benson that exemplifies this strong partnership. Her presentation will include recent and anticipated changes to the regulations protecting federally listed bats and the potential implications for projects in Vermont. Meg will also provide an update on White-nose Syndrome, SARS-CoV-2 and climate change as they relate to Vermont bats. During her talk, Meg will also show the audience specimens of the bat species she discusses. (1 PDH)

### 2 PM Pyritic Expansion of Local Crushed Shale Stone | Shawn P. Kelley, Ph.D., P.E., Sanborn, Head, & Associates, Inc.

Shawn will discuss the phenomenon known as pyritic expansion and how it affects the built environment. The phenomenon occurs (under certain conditions) when crushed stone backfill products that are quarried from carbonate bedrock contain the mineral pyrite (fool's gold). A bio-chemical reaction occurs in the crushed stone where the pyrite is transformed into gypsum. This pyritic oxidation creates forces that are strong enough to crack concrete and in turn may damage built structures to the point of failure. Some of the observed failures in Vermont include cracked building foundation walls and slabs, heaved basement slabs, tilted building walls, and cracked/heaved sidewalks. Shawn will describe what "reacted" stone looks like and discuss the "recipe" for the pyrite oxidation to occur. He will present some simple analytical laboratory tests to determine if pyritic oxidation is occurring and then present some results of sophisticated laboratory techniques such as X-ray diffraction (XRD) and X-ray Fluorescence (XFR) to positively identify and quantify (by percent weight) the crystalline mineral pyrite within the parent rock. (1 PDH)

2:45 PM Break and Refreshments

### 3 PM Senior Project Presentations | Norwich University, University of Vermont and Vermont Technical College

Sponsored by the Vermont Section of ASCE, we welcome senior project presentations from each of these local Universities to showcase their engineering studies. (1 PDH)

## EVENING PROGRAM

5 PM Social Hour | Cash Bar

6 PM Dinner Buffet\*\* | \$42 Dinner Price (\$22 Student Price)

7:00 PM Presentation of New Officers & Incoming President's Address |

7:15 PM Evening Guest Speaker: Ben Montross, Drinking Water and Groundwater Protection (VT DEC)

Ben Montross will discuss per- and polyfluoroalkyl substances in public drinking water systems in Vermont; a background of what PFAS are, their health effects, the history of Vermont standards and regulations, and the occurrence of PFAS contamination in Vermont's public drinking water systems to date. Ben will outline the key framework in the draft Federal regulations, including the proposed maximum contaminant levels, treatment technologies, and timeline. (1 PDH)

\*\* Dinner Buffet (Ceaser Salad, Garlic and Herb Crusted Roasted Pork Loin, Maple Dijon Chicken Breast, Scampi Pasta, Buttery smashed Potatoes, Chef's Seasonal Vegetables)

Dessert: Lemon Mascarpone Cake

• **Dinner reservations must be made by Monday, April 24, 2023 by Noon**

See registration form, or reach out to Carolyn Cota at (802) 917-4891 or

Email: [vtocietyofengineers@gmail.com](mailto:vtocietyofengineers@gmail.com)