



Thursday, February 16, 2017

Harry's Steakhouse
5564 Brecksville Rd (Independence)
5:15 p.m. Board Meeting
6:15 p.m. Cheers (Cash Bar)
6:30 p.m. Buffet Dinner
6:45 p.m. Presentation / Q&A

The Next 83 Years in Thirty Minutes – The Future of Concrete by 2100

Joseph J. Biernacki, DRE, PE: Professor of Chemical Engineering, Tennessee Technological University

The 20th century saw the rise of massively reinforced concrete, the dawn of concrete with steel-like properties, the introduction of flowable, pumpable and sprayable concrete and high strength and high performance concrete that has given us the interstate highway system in the US, the world's tallest buildings and massive dams. These achievements, surprisingly, have come on the *back* of portland cement, a binder system that has remained largely unchanged for 100 years. What might contractors wake-up to on the first day of the next century?

Joe Biernacki is a native of Cleveland, Ohio and still thinks of Cleveland as home. Born and raised on the near west-side of Cleveland, he went to James Ford Rhodes High (1976), received his BS in Chemical Engineering from Case Western Reserve University (1980) and the DRE (Doctor of Engineering) from Cleveland State University (1988). Joe began his professional career in 1980 with Standard Oil of Ohio (SOHIO), later part of British Petroleum where he would spend six years (1989-1995) working on ceramic materials processing. In 1995 he moved to the Center for Science and Technology of Advanced Cement-Based Materials (ACBM) at Northwestern University to become the Director of Educational Programs where he was first attracted to cements research. Having joined Tennessee Technological University (TTU) in 1997, he has since focused on topics such as phase resolved characterization and modeling of cement hydration, mechanically and chemo-mechanically induced strains in hydrated portland cement and more recently design of admixtures and additive manufacturing (3-D printing) of cement-based materials.

Biernacki is a Fellow of both the American Concrete Institute (ACI) and the American Ceramic Society (ACerS) where he has held numerous committee and division positions including chair of ACI Committee 231, Early Age Properties of Concrete. Biernacki was the recipient of the 2016 ACerS Cements Division Della Roy Lectureship for career achievement in the area of cements science.

Biernacki is presently a Professor of Chemical Engineering at Tennessee Technological University (TTU) in Cookeville, TN.

RSVP to Stacy Jackson, Chapter Secretary, by Tuesday, February 16, 2017 to: secretary@neohioaci.org. **Please note that once reservations have been made, if they are not cancelled within 48 hours of the presentation, you will be invoiced to cover the cost(s) incurred by the chapter.**

Chapter Members \$35 / Non-Members: \$40 / Students \$15.

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