

Dr. Charles A. Weiss, Jr. (GSL). Dr. Weiss is a Research Geologist with 25 years experience in mineralogical research, specializing in layered silicates and gel phases. He received his A.B. in 1983 in both Computer Science and Geology from Colgate University, Hamilton, NY, and his M.S. in 1987 and Ph.D. in 1989 in Geology from the University of Illinois, Urbana, IL studying the structure of clay minerals using solid-state Nuclear Magnetic Resonance (NMR) spectroscopy.

He has extensive experience in crystal chemistry of and gel/crystal mixtures in cementitious materials. He has an interest in the forensic investigations of concrete and construction materials including cement, mineral admixtures, clays, and zeolites using nuclear magnetic resonance spectrometry, X-ray diffraction analysis, energy-dispersive X-ray chemical analysis, scanning electron microscopy, infrared spectrometry, optical microscopy, image analysis, conduction calorimetry, and differential scanning calorimetry. He is interested in the application of computational elements to the study of geomaterials and construction materials, including the hydration of cement-based materials and finite element method (FEM) modeling of incremental construction of mass concrete structures.

He has been a member of ACI 522, Pervious Concrete since its inception in 2001, and he presently holds the office of secretary. He is also a member of ACI 222, Corrosion of Metals in Concrete, and ACI 237, Self-Consolidating Concrete.

He has published over 60 papers and reports and holds over 20 patents or patents pending in a wide array of new technologies. He has been awarded the 2009 Federal Laboratory Consortium Award for Excellence in Technology Transfer for Bullet Trapping Medium and System for Live-Fire Training Ranges, the 2006 ERDC Award for Outstanding Achievement in Technology Transfer for Porcelain Enamel Reinforcing Steel, the 2005 ERDC Award for Outstanding Achievement in Technology Transfer for Fire-resistant Bullet-trapping Medium, the 2004 Southeast Region and National Award for Excellence in Technology Transfer Award (National Federal Laboratory Consortium) for Introduction of Bullet-Trapping Foamed Concrete for Live-Fire Training Ranges, the 2002 ERDC and 2004 Department of the Army Research and Development Achievement Award for the Electro-Osmotic Pulse System, and the 2002 NOVA Award, Electro-Osmotic Pulse Controls Groundwater Intrusion in Concrete Structures from the Construction Innovation Forum. He also received the 2002 Commander's Award for Civilian Service for his research into the Development of Low-Cost High-Performance Concrete. Dr. Weiss is a Registered Professional Geologist in the State of Mississippi.