

EDUCATION

University of Iowa

- *Bachelor of Science, with Honors and Distinction, Civil and Environmental Engineering, 1999*

University of Illinois at Urbana-Champaign

- *Master of Science, Civil and Environmental Engineering, 2002*
- *Doctor of Philosophy, Civil and Environmental Engineering, 2011*

PRACTICE AREAS

- *Concrete Materials Optimization*
- *Creep, Shrinkage & Early-Age Volume Change*
- *High Performance, Self-Consolidating, and Fiber Reinforced Concrete*
- *Concrete Products Research & Advanced Cement Based Materials*
- *Performance Specifications for Sustainable Infrastructure*
- *Service Life Evaluation and Concrete Durability*
- *Mass Transport and Moisture Mitigation*
- *Construction Troubleshooting and Forensic Investigation*

REGISTRATIONS

Professional Engineer

- *Illinois, Indiana, Georgia*

HONORS AND AWARDS

- *Chester P. Siess Award for Scholastic Achievement and Promise for Research*
- *Frederic T. & Edith F. Mavis Memorial Fellowship*
- *APWA Dr. Emil Nigro Memorial Scholarship*
- *Harvey H. Hagge Concrete Scholarship*
- *Tau Beta Pi Engineering Honor Society*
- *Chi Epsilon Civil Engineering Honor Society*

EXPERIENCE

Dr. D'Ambrosia has 18 years of experience in concrete materials behavior, including characterization of mechanical properties, development of new experiments, numerical modeling, and specialized mixture optimization. His areas of research expertise include early age volume stability, creep and shrinkage of high performance materials, self-consolidating concrete (SCC), fiber reinforced concrete, shrinkage reducing admixtures (SRA) and internal relative humidity. He also has experience instrumenting and monitoring structural and material behavior in concrete bridges.

Dr. D'Ambrosia specializes in solving difficult problems for the construction industry. His interests include materials optimization for specialized applications, durability-related mechanisms such as volume change and cracking, as well as new approaches to prediction and verification of service life, durability, and sustainability. He has expertise with large infrastructure and energy projects throughout the US, such as bridges, highways, dams, and power plants.

Dr. D'Ambrosia teaches numerous instructional courses for the industry and currently serves as Adjunct Professor in the Department of Civil and Environmental Engineering at Northwestern University.

PROFESSIONAL SERVICE

American Concrete Institute

- *Chair of ACI 209-C, Model Applicability and Uncertainty*
- *Past Chair of Committee 07 Awards for Papers Subcommittee for Wason Medal for Materials Research*
- *Committee Member - 349A (Nuclear Structures-Materials), 231 (Early Age), 209 (Creep and Shrinkage), 236 (Materials Science), 329 (Performance Specs) and 237 (SCC).*

American Ceramics Society

- *Cements Division - Member*
- *Executive Committee Chair*

American Society of Civil Engineers (ASCE) - Member

Expert Reviewer

- *ACI Materials Journal*
- *ASCE Journal of Materials*
- *RILEM Materials & Structures*
- *ASTM Journal of Testing and Evaluation*
- *Cement and Concrete Research*

REPRESENTATIVE PROJECTS

Water Resources and Marine Infrastructure

- *Panama Canal Expansion Third Set of Locks Project*
- *Gulf Intracoastal Waterway (GIWW) West Closure Complex*
- *Permanent Canal Closures and Pumps (PCCP)*
- *Olmsted Locks and Dam*
- *Emsworth Locks and Dams*
- *MWRDGC Tunnel and Reservoir Plan (TARP)*
- *Blue Plains Tunnel*
- *South River Tunnel*

- *Carlsbad Desalination Project*
- *MWRDGC O'Brien Wastewater Treatment Plant*
- *Harry Tracy Water Treatment Plant*
- *Bitter Point Pump Station*
- *DWU Central Wastewater Treatment Plant*
- *Chicago Department of Water Management (CDWM) Jardine Water Purification Plant*
- *Portsmouth Naval Yard*
- *Moin Container Terminal*
- *Progreso Pier*

Highways, Bridges, and Transportation Structures

- *Illinois Tollway System-Wide Materials Consulting*
- *Ohio River Bridges Project*
- *Tappan Zee Bridge Replacement Project*
- *Boston Central Artery/Tunnel Project*
- *O'Hare Airport Modernization Program*
- *IDOT HPC for Transportation Structures*
- *IDOT Performance and Acceptance of SCC*
- *CDOT HPC Program*
- *Hawaii DOT Bridge Deck Research Program*
- *Muscat Airport Project*
- *Bayonne Bridge Navigational Clearance Project*
- *Goethals Bridge Replacement*
- *WSDOT SR 520 Bridge Replacement Project*
- *Norfolk Midtown Tunnel*
- *Devil's Slide Tunnel*
- *Honolulu Rail Transit Project*
- *I-5 Antlers Bridge Replacement*
- *Throgs Neck Bridge*
- *I-35 Bridge Replacement*
- *Blanchette Bridge*
- *I-15 Corridor Expansion Project*
- *Willis Ave. Bridge*
- *Sakonnet River Bridge*
- *Willamette River Bridge*
- *Boston I-93 Fast 14 Bridge Replacement Project*
- *South River Tunnel, Atlanta*

Buildings and Facilities

- *Kingdom (Jeddah) Tower*
- *Burj Khalifa*
- *Trump Tower Chicago*
- *Wanda Vista*
- *World Trade Center*
- *Pentominium*
- *ADNOC Headquarters*
- *Lebanon Tower*
- *Nathani Heights*
- *56 Leonard*
- *432 Park Ave*
- *Lotte World Tower*
- *Al Hamra Tower*
- *US Bank Stadium*
- *Alexian Brothers Medical Center*
- *CMA Tower*
- *Illinois Holocaust Museum*

Energy, Defense, and Communications

- *Los Alamos National Laboratory Chemistry and Metallurgy Research Replacement Facility (CMRR)*
- *Hanford Tank Waste Treatment and Immobilization Plant*
- *Argonne National Laboratory Advanced Photon Source*
- *URENCO National Enrichment Facility*
- *Crystal River NPP*
- *Three Mile Island NPP*
- *San Onofre NPP*
- *NRC Peer Review of AP1000 Design*
- *McGuire NPP Dry Cask Storage Facility*
- *Oconee NPP Water Building*
- *Dominion Cove Point LNG terminal*
- *NASA JPL Deep Space Communications Network*
- *LaCygne Power Plant*
- *H.F. Lee Energy Complex Wayne County Power Plant*
- *Haynes Generating Station Repowering Project*
- *Walnut Creek Energy Park*

Dams, Spillways, Hydropower

- *Holtwood Hydroelectric Plant*

- *Cannelton Hydroelectric Project*
- *Keyyask Generating Station*
- *Blue Lake Expansion Project*
- *Gilboa Dam Reconstruction*
- *Folsom Dam Auxiliary Spillway*
- *LL Anderson Spillway*
- *Lost Creek Dam Improvement Project*
- *Ruskin Dam and Powerhouse Upgrade*
- *Red Rock Hydroelectric Project*
- *Muskrat Falls Generation Facility*

Education and Training Programs

- *Adjunct Professor in Civil and Environmental Engineering at Northwestern University*
- *PCA Nuclear Regulatory Commission Concrete Technology and Codes*
- *PCA Faculty Enhancement Workshop*
- *ACI Field Technician Level 1*
- *ACI CCSI Certification Training*
- *Kiewit Power Training Session on Mass Concrete*
- *Kiewit Eastern District Seminar on Admixtures in Concrete*
- *PCA EB119*

Research and Development

- *Service Lifetime Extension of Nuclear Power Plants, NRC*
- *AquaSmart*
- *Transhield*
- *Lafarge Ductal UHPC*
- *Ceratech*
- *Calera*
- *Sebastos Ultra-Lightweight Composite*
- *High Performance Fiber Reinforced Concrete for Bridges, Hawaii DOT*
- *Development of Lightweight Synthetic Particles for Syntheon*
- *Solidia*
- *Ecolite*
- *NRMCA/SDC SCC Form Pressure Research Project*
- *Long-Term Performance of Portland Limestone Cements, PCA/Caltrans*