

<b>Peter C. Taylor, PhD</b>	
Director, National Concrete Pavement Technology Center Research Professor, Department of Civil, Construction and Environmental Engineering Iowa State University 2711 South Loop Dr. Suite 4700 Ames, IA 50010	(515) 294-9333 <a href="mailto:ptaylor@iastate.edu">ptaylor@iastate.edu</a> <b>IOWA STATE UNIVERSITY</b> <b>Institute for Transportation</b>

## EDUCATION

- PhD, Civil Engineering, “Fatigue and Fracture of Cement Mortars Containing Fly Ash,” University of Cape Town, 1995
- BSc, Civil Engineering, University of Cape Town, 1982

## PROFESSIONAL EXPERIENCE

- Research Professor, Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2020–present
- Director, National Concrete Pavement Technology Center, Iowa State University, Ames, IA, 2015–present
- Research Associate Professor, Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2014–2020
- Associate Director, National Concrete Pavement Technology Center, Iowa State University, Ames, IA, 2007–2015
- Adjunct Faculty, Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2007–2014
- Principal Engineer & Group Manager, Construction Technology Laboratories (CTLGroup), 1997–2007
- Engineer, Cement and Concrete Institute, South Africa, 1992–1997
- Senior Lecturer, University of Cape Town, South Africa, 1990–1991
- Research Officer, University of Witwatersrand, South Africa, 1987–1989
- Engineer, Stewart Scott, NCL - Consulting Engineers, 1983–1987

## PRINCIPAL EXPERIENCE

- Research related to materials aspects of concrete technology. Current and recent projects include:
  - Performance Engineered Mixtures. A national program to change the way concrete is specified and prepared, FHWA and TPF.
  - Optimizing Concrete Mixtures for Performance and Sustainability. Federal Highway Administration Cooperative Agreement.
  - Investigation of Deterioration of Joints in Concrete Pavements. TPF Pooled Fund and Federal Highway Administration Cooperative Agreement.
  - Tests or Standards to Identify Compatible Combinations of Individually Acceptable Concrete Materials, Federal Highway Administration, (CPTP Task 4), Cooperative Agreement No. DTFH61-03-X-00102.

- Improved Specifications and Protocols for Acceptance Tests on Processing Additions in Cement Manufacturing, National Cooperative Highway Research Program, Project No. 18-11.
- Development of innovative test methods for concrete mixture quality assurance and specifications.
- Development and presentation of training modules about concrete materials for engineers involved in building concrete pavements. Modules are presented around the US and overseas.
- Development of technical publications about concrete paving materials and cementitious systems for FHWA, ISU, and PCA.
- Research and consulting for optimizing concrete durability for pavements and structures. This work includes assessment and application of innovative test methods.
- New product and materials assessment, including non-standard supplementary cementing materials.
- Troubleshooting and problem solving on a variety of construction projects, both in the field and the laboratory.
- Materials-related specialty consulting to design engineers, owners, contractors, ready mix suppliers, and materials manufacturers.
- Manage the Materials Consulting Group at CTL Group, a diverse team of 13 high-level engineers and scientists providing research and consulting services to the concrete construction and cement manufacturing industries.

#### SELECTED PUBLICATIONS

1. Amini, K., S. Sadati, H. Ceylan, and P. Taylor. 2019. Effects of Mixture Proportioning, Curing and Finishing on Concrete Surface Hardness. *ACI Materials Journal*.
2. Chen, Y.-A., P. Taylor, H. Ceylan, S. Kim, and X. Wang. 2019. Effect of Structural Design Options on Concrete Overlay Performance. *International Journal of Pavement Research and Technology*.
3. Yang, S., H. Ceylan, K. Gopalakrishnan, S. Kim, P. C. Taylor, and A. Alhasan. 2018. Characterization of Environmental Loads Related Concrete Pavement Deflection Behavior Using Light Detection and Ranging Technology. *International Journal of Pavement Research and Technology*, Vol. 11, pp. 470–480.
4. Wang, X., E. Yurdakul, P. C. Taylor, and X. Wang. 2018. An Innovative Approach to Concrete Mixture Proportioning, *ACI Materials Journal*.
5. Sassani, A., H. Ceylan, S. Kim, K. Gopalakrishnan, P. C. Taylor, and A. Arabzadeh. 2017. Influence of Mix Design Variables on Engineering Properties of Carbon Fiber-Modified Electrically Conductive Concrete. *Concrete Construction & Building Materials*.
6. Wang, X. and P. C. Taylor. 2017. A Novel Test to Determine the Workability of Slipform Concrete Mixtures. *Magazine of Concrete Research*, Paper 1600234.
7. Ceylan, H., K. Gopalakrishnan, S. Kim, P. C. Taylor, M. Prokudin, and A. F. Buss. 2013. Highway Infrastructure Health Monitoring Using Micro-Electromechanical Sensors and Systems (MEMS), *Journal of Civil Engineering and Management*, 19:sup1, S188–S201.

## RESEARCH

1. Technology Transfer of Concrete Pavement Technologies, FHWA DTFH61-12-RA-00014, \$9,000,000, 2018–2022
2. Evaluation of Penetrating Sealers for Concrete, Iowa Highway Research Board, \$150,000, 2018–2020
3. Performance Engineered Concrete Mixtures, Transportation Pooled Fund TPF 5(368), \$3,000,000, 2017–2021
4. Reduced Cementitious Material in Optimized Concrete Mixtures, MnDOT, \$150,000, 2017–2019
5. Impacts of Internally Cured Concrete Paving on Contraction Joint Spacing Phase 2, Iowa Highway Research Board, \$260,000, 2018–2020
6. Entrained Air Void System for Durable Highway Concrete, NCHRP 18-17, \$550,000, 2015–2019
7. Prevention and Restoration of Early Joint Deterioration, Iowa Highway Research Board, \$75,000, 2015–2016
8. Concrete Overlay Performance on Iowa's Roadways, Iowa Highway Research Board, \$190,000, 2015–2019
9. Extended Life Concrete Bridge Decks Utilizing Improved Internal Curing to Reduce Cracking, Ohio DOT, \$180,000, 2015–2018