

# John J. Schemmel, Ph.D., P.E., FACI

## EDUCATION

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**Ph.D.**, North Carolina State University, Raleigh, NC, 1989.  
**MS**, Lehigh University, Bethlehem, PA, 1984.  
**BSCE**, University of Wisconsin, Madison, WI, 1982.  
University of Wisconsin, Platteville, WI, 1977. (Major: Civil Engineering)

## ADMINISTRATIVE EXPERIENCE

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**Head**, Dept. of Civil & Environmental Engineering, South Dakota State University, 2003-2005.  
**Associate Dean for Academic Affairs**, College of Engineering, University of Arkansas, 2001-2003.  
**Director, Distance Education Program**, College of Engineering, University of Arkansas, 2001-2003.  
**College ABET Visit Coordinator**, College of Engineering, University of Arkansas, 2002.

## ACADEMIC EXPERIENCE

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**Associate Professor**, Dept. of Civil Engineering, Valparaiso University, 2009 - present  
**Adjunct Professor**, Southeast Technical Institute, Sioux Falls, SD, 2009  
**Professor**, Dept. of Civil & Environmental Engineering, South Dakota State University, 2003-2005.  
**Professor**, Dept. of Civil Engineering, University of Arkansas, 1999-2003.  
**Associate Professor**, Dept. of Civil Engineering, University of Arkansas, 1994-1999.  
**Assistant Professor**, Dept. of Civil Engineering, University of Arkansas, 1988-1994.

## INDUSTRIAL EXPERIENCE

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**Vice President and Co-owner**, eTEC LLC, Brandon SD, 2005-Present.  
**Professional Engineer**, State of Arkansas, #7858.  
**Research Engineer**, USACE, Waterways Experiment Station, Vicksburg, MS, 1993-1994.

## AWARDS and RECOGNITIONS

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**American Concrete Institute Certification Award**, 2011.  
**Fellow of the American Concrete Institute**, 2000.  
**ASEE Annul Conference Best Paper Award**, "Reinforce Design and Construction Issues with a Comprehensive Laboratory Project", 1999.  
**TI Outstanding Service to Students Award**, Civil Engineering, University of Arkansas, 1998.  
**Journal Cover Story**, "Practical Experience for Engineering Students," *Concrete International*, Vol. 20, No. 12, December, 1998.  
**American Society of Civil Engineers Outstanding Faculty Advisor**, Zone II, 1997.  
**TI Outstanding Teacher Award**, Civil Engineering, University of Arkansas, 1996.  
**Haliburton Outstanding Researcher Award**, Civil Engineering, University of Arkansas, 1993.  
**Haliburton Outstanding Teacher Award**, Civil Engineering, University of Arkansas, 1992.  
**Phi Kappa Phi** Academic Honor Society, North Carolina State University, 1988.  
**Tau Beta Pi**, Engineering Honor Society, University of Wisconsin

## CURRENT PROFESSIONAL ACTIVITIES

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### American Concrete Institute

Certification Programs Committee  
C610: Field Technician  
Scholarship Council  
Qualified Examiner  
Certified Concrete Field Testing Technician  
Certified Concrete Strength Testing Technician  
Certified Flatwork Finisher Technician

### American Society for Testing & Materials

C 09 Executive Sub-committee  
C 09.40: Ready-Mixed Concrete  
C 09.47: Self Consolidating Concrete  
Committee Secretary  
C 09.60: Testing Fresh Concrete  
TG Chair: C 173  
C 09.61: Strength Testing

### American Society of Civil Engineers

### American Society for Engineering Education

## SERVICE ACTIVITIES

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Over 70 technical presentations at various local, national, and international conferences.

Reviewer for ACI, ASTM, and ASCE publications as well as for two textbooks (*HapperCollins and Addison Wesley*).

Instructor and Examiner for South Dakota Department of Transportation ACI Concrete Field Testing Technician Certification program, 2005-present.

Certification course creator and instructor, "Portland Cement Concrete", Arkansas State Highway and Transportation Department, course created to satisfy Federal Mandate for certification of highway construction personnel.

National Seminar Instructor, "Practical Concrete Materials", American Concrete Institute, present approximately three to five seminars each year.

Instructor, "Professional Development Short Courses", these courses generally sponsored by the local ASCE chapter and Mack-Blackwell National Transportation Study Center.

Co-creator and Instructor, "Civil Engineering Professional Engineer Exam Review Course", this course was taught twice each year while at the University of Arkansas and once at South Dakota State University.

Task Group Member for the ACI initiative "Incorporation of ACI Certification in University Engineering Curriculum". Current.

Co-author and Task Group Chairman for "ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method", one of three authors who completely revise this test methodology. Current

Author of several modifications implemented in a number of ASTM concrete related standards.

Co-Chair for the ASTM Symposium "New Developments in Test Methods for Self-Consolidating Concrete (SCC)", June 2008.

Task Group Chair for the review and revision of polices related to the ASTM Sanford E. Thompson Award. 2008

Design Team member for The Enhanced Learning Center at the University of Arkansas.

Creator, "An Exploratory Career Curriculum for Teachers of K Through 8<sup>th</sup> Grade Students", a CD-based resource of lesson plans, images, and videos related to Civil Engineering.

Creator, "Check It Out", "Make It Happen", and "Back To The Future", a three-part series of videos introducing Civil Engineering to K-8 students.

Pre-College Programs, Civil Engineering Department and College of Engineering liaison for Upward Bound, MITE, Educational Talent Search, Science Fair, and other related programs.

K-12 Outreach Committee, College of Engineering, University of Arkansas.

Faculty advisor to the student chapter of ASCE, 1994-1999.

Advisor/Mentor for several Civil Engineering Students at the University of Arkansas who received national scholarships or fellowships.

## RESEARCH EXPERIENCE

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- "Evaluation of Precast Concrete Slab Panels" Arkansas State Highway and Transportation Department, \$167,826, July 2001 to June 2004. *(PI, became a Co-PI following appointment to Dean's office)*
- "Use of High Performance Concrete in Highway Bridge Decks", Arkansas State Highway and Transportation Department, \$132,865, October 1999 to September 2001. *(PI)*
- "Further Study of a Shrinkage Reducing Admixture and it's Effect on Durability", WR Grace Company, Open-ended duration and funding. *(PI)*
- "Investigation of Innovative Materials for Concrete Finishing Tools", Marshalltown Tools, \$4,550, March 1998 to June 1999. *(PI)*
- "Supplemental Materials for the Educational Videotapes for K-12 Students", Mack-Blackwell National Rural Transportation Study Center, May 2000 to April 2001, \$20,000. *(PI)*
- "Use of Admixtures for Concrete", Arkansas State Highway and Transportation Department, \$165,812, July 1997 to June 2000. *(PI)*
- "Effects of Horizontal and Vertical Forces on Anchor Bolts", Arkansas State Highway and Transportation Department, \$160,960, January 1997 to June 2000. *(PI)*
- "Creation of Educational/Recruitment Videotapes for K-12 Students", Mack-Blackwell National Rural Transportation Study Center, \$32,240, December 1996 to August 1997. *(PI)*
- "Investigation of Sandwich Ceiling Panels", Arcoplast, Inc., \$1,500, January 1997 to December 1997. *(PI)*
- "Development of a Technician Certification Course: Field Testing Fresh Concrete", Mack-Blackwell National Rural Transportation Study Center, \$158,361, May 1995 to December 1996. *(Co-PI)*
- "Transformations to Quality Organizations: A Multifaceted Investigation of the Concrete Pipe Industry", National Science Foundation, \$237,272, January 1995 to December 1997. *(Sub-contractor)*
- "Superplasticizers and Other Chemical Admixtures", Arkansas State Highway and Transportation Department, \$265,342, June 1994 to May 1996. *(Co-PI)*
- Intergovernmental Personnel Agreement, US Army Corps of Engineers, \$99,434, June 1993 to May 1994.
- "Design Properties of Fiber Reinforced Bars", Arkansas State Highway and Transportation Department, \$100,722, March 1993 to October 1994. *(Co-PI)*
- "Mechanical Behavior of High Performance Concretes", Strategic Highway Research Program, North Carolina State University, \$369,874, 1989 to 1993. *(Co-PI)*
- "Structural Applications of High Strength Concrete", FHWA, North Carolina Department of Transportation, \$75,000, 1986 to 1988. *(Graduate Student)*

## PUBLICATIONS - Referred

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- Schemmel, John, J., Ray, James C., and Kuss, Mark L., "Impact of a Shrinkage Reducing Admixture on the Properties and Performance of Bridge Deck Concrete", High-Performance Concrete: Research to Practice, American Concrete Institute Special Publication, SP-189, pp.367-386, 1999.
- Schemmel, John J., " Reinforce Design and Construction Issues with a Comprehensive Laboratory Project", (This paper available on-line at either <http://www.asee.org/conferences/html/bestpapers.htm> or [http://www.asee.org/conferences/assets/images/asee\\_nat\\_99.PDF](http://www.asee.org/conferences/assets/images/asee_nat_99.PDF), Summer, 1999.)
- Schemmel, John, J., "Implementation of a High Performance Concrete", Materials and Construction: Exploring the Connection, Proceedings of MatCong 5, the 5th ASCE Materials Engineering Congress, Cincinnati, Ohio, May 10-12, 1999, pp. 373-380.

- Schemmel, J.J., and O'Neil III, E.F., "Properties and Behavior of FRP Composite Tendons for Prestressed Concrete Applications", *Fiber Composites in Infrastructure*, Vol. II, Proceedings of the Second International Conference on Composites in Infrastructure, Tucson, Arizona, January, 1998, pp. 128-137.
- Schemmel, John J., Hall, Kevin D., and Dennis, Norman D., "Using Computer Technology to Enhance Instruction and Learning", *ASEE Computers in Education Journal*, Vol. VII, No. 3, pp 31-36, July-September 1997.
- Hall, K.D., and Schemmel, J.J., "Using the Computer in the Classroom", *Proceedings of the XIIIth International Road Federation World Meeting*, Toronto, Ontario, Canada, No. 01-265, June, 1997.
- Schemmel, J.J., and Hall, K.D., "Incorporating ACI Certification in the Civil Engineering Curriculum", *Proceedings of the XIIIth International Road Federation World Meeting*, Toronto, Ontario, Canada, No. 01-264, June, 1997.
- Schemmel, J.J., and O'Neil, E.F., "Engineering Properties of Composite Prestressing Tendons", *Engineering Mechanics: Proceedings of 10th Conference*, American Society of Civil Engineers, Vol. 1, pp. 110-113, May 21-25, 1995
- Schemmel, J.J., Leming, M.L., and Hansen, MR, "Lessons Learned from Field Trials with High Performance Concrete," *High-Performance Concrete-Proceedings*, ACI International Conference, ACI SP-149. American Concrete Institute, Detroit, Michigan, 1994.
- Schemmel, J.J., Arora, V., and Williams, J., "Split Addition of a High-range Water-reducing Admixture and Its Effect on High Performance Concrete," *Fourth CANMET/ACI International Conference on Superplasticizers and Chemical Admixtures*, ACI SP-148. American Concrete Institute, Detroit, Michigan, 1994.
- Schemmel, J.J., and Leming, M.L., "High Performance Concrete for Highway Applications: Field Results," *High Performance Concrete in Severe Environments*, SP-140, American Concrete Institute, Detroit, MI, pp. 95-119, 1993.
- Schemmel, J.J., and Leming, M.L., "Use of High Performance Concrete for Rapid Highway Pavement Repairs: An Overview of Five Field Installations," *Transportation Research Record*, No. 1382, 1993, pp. 20-25.
- Leming, M.L., Schemmel, J.J., Zia, P., and Ahmad, S.H., "High Performance Concrete: North Carolina Field Installation Results," *Transportation Research Record*, No. 1382, 1993, pp. 78-81.
- Schemmel, J.J., and Zia, P., "Use of High Strength Concrete in Prestressed Concrete Box Beams for Highway Bridges," *Transportation Research Record*, No. 1275, 1990, pp. 12-18.

## **PUBLICATIONS - Reports**

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- Schemmel, John J., and Brahana, Van, "The Effect of Finishing Tool Composition on the Near Surface Air Void Content of Concrete", *Marshalltown Tools*, June 1999.
- Griffith, F., and Schemmel, J.J., "Vertical Pullout of Bridge Bearing Anchor Bolts", *Mack-Blackwell Rural Transportation Study Center*, 1998.
- Schemmel, J.J., and Hall, K.D., "Implementation Report: Superplasticizers and Other Additives for Concrete", *Arkansas State Highway and Transportation Department*", September, 1996
- Schemmel, J.J., "Final Report: Superplasticizers and Other Additives for Concrete", *Arkansas State Highway and Transportation Department*", July, 1996
- Wakeley, L.D., Harrington, P.T., and Schemmel, J.J., "Causes of Cracking of Concrete Structures at U.S. Military Facilities, U.S. Army Engineer District, Japan", *Technical Report SL-94-1, USACE Waterways Experiment Station*, April 1994.
- Zia, P., Ahmad, S.H., Leming, M.L., Schemmel, J.J., Elliott, R.P., and Naaman, A.E., "High-Performance Concretes: An Annotated Bibliography 1974-1989," *Strategic Highway Research Program*, Report No. SHRP-C/WP-90-001, Washington, DC., June, 1990.
- Zia, P., Leming, M.L., and Ahmad, S.H., "High-Performance Concrete: A State-of-the-Art Report," *Strategic Highway Research Program*, Report No. SHRP-C/IR-90-001, Washington, DC., June, 1990. (Schemmel, J.J. contributed one chapter to this publication.)

- Zia, P., Leming, M.L., Ahmad, S.H., Schemmel, J.J., Elliott, R.P., and Naaman, A.E., "Mechanical Behavior of High Performance Concretes, Volume 1: Summary Report," Strategic Highway Research Program, Report No. SHRP-C-361, Washington, DC, 1993.
- Zia, P., Leming, M.L., Ahmad, S.H., Schemmel, J.J., and Elliott, R.P., "Mechanical Behavior of High Performance Concretes, Volume 2: Production of High-Performance Concrete," Strategic Highway Research Program, Report No. SHRP-C-362, Washington, DC, 1993.
- Zia, P., Leming, M.L., Ahmad, S.H., Schemmel, J.J., and Elliott, R.P., "Mechanical Behavior of High Performance Concretes, Volume 3: Very Early Strength Concrete," Strategic Highway Research Program, Report No. SHRP-C-363, Washington, DC, 1993.
- Zia, P., Leming, M.L., Ahmad, S.H., Schemmel, J.J., and Elliott, R.P., "Mechanical Behavior of High Performance Concretes, Volume 4: High Early Strength Concrete," Strategic Highway Research Program, Report No. SHRP-C-364, Washington, DC, 1993.
- Zia, P., Leming, M.L., Ahmad, S.H., Schemmel, J.J., and Elliott, R.P., "Mechanical Behavior of High Performance Concretes, Volume 5: Very High Strength Concrete," Strategic Highway Research Program, Report No. SHRP-C-365, Washington, DC, 1993.
- Zia, P., Schemmel, J.J., and Tallman, T.E., "Structural Applications of High Strength Concrete," Report No. FHWA/NC/89-006, Federal Highway Administration, Washington, DC., June, 1989.

#### **PUBLICATIONS - Other Publications**

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- Schemmel, J.J. and Craft, R.R., "Making Connections through the World Wide Web", Connections: The Marketing Plan for the University of Arkansas College of Engineering, ASEE/IEEE Frontiers in Education conference, Oct, 2001.
- Schemmel, J.J., Griffith, F.T., and Glover, E, "Working with Industry and a Professional Organization to Offer Students a National Certification", Online publications of the Materials Research Society, <http://www.mrs.org/publications/epubs/proceedings/spring2001/gg/>, 2001.
- Dennis, Norman D., Hall, Kevin D., and Schemmel, John J., "Innovative Civil Engineering Education: Smaller Programs", ASCE Annual Convention, Charlotte, NC, Oct. 17-19, 1999.
- Schemmel, J.J., "Practical Experience for Engineering Students", Concrete International, American Concrete Institute, Vol. 20, No. 12, December, 1998, pp. 41-44.
- Dennis, N.D., Gross, M.A., Hall, K.D., Schemmel, J.J., and Knowles, D., "Integrated Design: The Four Year Scenario Based Experience", Proceedings of the Frontiers in Education Conference, ASEE/IEEE, Nov., 1998.
- Schemmel, J.J., "Using the Computer and Internet to Enhance Teaching and Learning", Academic News, Newsletter of the NSF Center for Science and Technology of Advanced Cement-Based Materials and Portland Cement Association, Vol. 4, No. 1, Fall 1998.
- Schemmel, J.J., "Hands-on Experience with Reinforced Concrete Beam Design", 33rd Midwest Section Conference, American Society for Engineering Education, Salina, KS, April, 1998.
- Schemmel, J.J., "Teaching Techniques to Enhance Student Learning", Proceedings, Fourth Faculty Enhancement Workshop: Teaching the Material Science, Engineering, and Field Aspects of Concrete, Lehigh University, pp. 11-18, July 1997.
- Schemmel, J.J., Hall, K.D., and Dennis, N.D., "Using Computer Technology to Enhance Instruction and Learning", 32<sup>nd</sup> ASEE Midwest Section Conference, Rolla, Missouri, April, 1997. (<http://www.ecn.missouri.edu/academic/ee/asee/paper/3C-4.pdf>)
- Schemmel, J.J., "Using Presentation Software to Teach Structural Materials", Academic News, Newsletter of the NSF Center for Science and Technology of Advanced Cement-Based Materials and Portland Cement Association, Vol. 1, No. 2, Fall 1996.
- Schemmel, J.J., "Use of Presentation Software for Lecturing", 31st, ASEE Midwest Section Conference, Tulsa, Oklahoma, April, 1996. ([http://me8.me.utulsa.edu/completed/j\\_schemmel/SOFTWARE.html](http://me8.me.utulsa.edu/completed/j_schemmel/SOFTWARE.html))

- Schemmel, J.J., "Incorporating a National Certification in an Undergraduate Level Course", 31st, ASEE Midwest Section Conference, Tulsa, Oklahoma, April, 1996.  
([http://me8.me.utulsa.edu/completed/j\\_schemmel/CERTIFY.html](http://me8.me.utulsa.edu/completed/j_schemmel/CERTIFY.html))
- Hall, K.D., and Schemmel, J.J., "Development of an Outreach Program for Area Primary Schools", 31st ASEE Midwest Section Conference, Tulsa, Oklahoma, April, 1996.  
([http://me8.me.utulsa.edu/completed/j\\_schemmel/OUTREACH.html](http://me8.me.utulsa.edu/completed/j_schemmel/OUTREACH.html))
- Hall, K.D., and Schemmel, J.J., "An Electronic Laboratory Notebook for Civil Engineering Materials Labs", 31st, ASEE Midwest Section Conference, Tulsa, Oklahoma, April, 1996.  
([http://me8.me.utulsa.edu/completed/k\\_hall/KDH1-96.html](http://me8.me.utulsa.edu/completed/k_hall/KDH1-96.html))
- Schemmel, J.J., "Incorporating ACI Certification into the Civil Engineering Curriculum," Concrete International, American Concrete Institute, October, 1995, pp. 62-64.
- Schemmel, J.J., and Leming, M.L., "Rapid Highway Pavement Repairs using High Performance Concrete," Symposium Proceedings, Use of Fly Ash, Silica Fume, Slag and other By-Products in Concrete and Construction Materials, Milwaukee, 1992.
- Schemmel, J.J., Powell, J.R., and Leming, M.L., "Early Strength Determination for Concrete Pavement Patches," Symposium Proceedings, Concrete Technology for the 21st Century, Milwaukee, 1992.