

## Curriculum Vita

**Lisa K. Spainhour, Ph.D., P.E.**

July 29, 2009

### GENERAL INFORMATION

University Address: Department of Civil and Environmental Engineering  
College of Engineering  
2525 Pottsdamer Road  
Florida State University  
Tallahassee, Florida 32306  
Phone: (850) 410-6123 - FAX: (850) 410-6142

E-Mail Address: spainhou@eng.fsu.edu

Web Site: www.eng.fsu.edu/~spainhou

### **Professional Preparation**

1991-1994 Doctor of Philosophy, North Carolina State University, Raleigh, NC.  
Major: Civil Engineering  
Dissertation: "Composite Materials Property Data Modeling with the Entity-Relationship Method"  
Dissertation supervisor: William Rasdorf, Ph.D., P.E.

1989-1991 Master of Science, North Carolina State University, Raleigh, NC.  
Major: Civil Engineering  
Thesis: "A Computer-Aided Analysis System for Composite Materials"  
Thesis supervisor: William Rasdorf, Ph.D., P.E.

1985-1989 Bachelor of Science, North Carolina State University, Raleigh, NC.  
Major: Civil Engineering  
Summa cum laude  
Class Rank: 1/92

### **Professional Credentials**

2008 Professional Engineer #68323 (Florida)  
1989 Engineering Intern #A-10738 (North Carolina)

**Professional Experience**

- 8/1999-present     Associate Professor – Department of Civil & Environmental Engineering, College of Engineering, Florida State University. Responsible for teaching and developing graduate and undergraduate courses in the structures domain. Establishing and supervising a funded research program focusing on computer-aided engineering, management of infrastructure data, and applications of composite materials in civil engineering. Primary focus areas have included transportation safety databases and FRP-concrete hybrid structures. Also serves on numerous department and college committees. Actively involved in mentoring undergraduate students, particularly those from under-represented groups.
- 8/1994-7/1999     Assistant Professor – Department of Civil & Environmental Engineering, College of Engineering, Florida State University.
- 8/1993-7/1994     Visiting Assistant Professor – Department of Civil & Environmental Engineering, College of Engineering, Florida State University.
- 1/1990-8/1993     Research Assistant & Doctoral Candidate – Department of Civil Engineering, College of Engineering, North Carolina State University, Raleigh NC. Studied the integration of composite materials data into several components of engineering software using a relational database. Investigated the scope, nature, and content of composite materials data, focusing particularly on the needs of civil and structural applications. Used a methodological approach to develop a conceptual model supporting engineering applications.
- Sum 1989, 1990     Student Contractor – Ballistic Research Laboratory, Aberdeen Proving Grounds, Aberdeen, MD. Designed and documented a prototype database for maintaining composite materials stiffness data. Wrote data entry, reports, and laminate design applications for this database. Designed programs to integrate materials data into an external laminate design program and into the ANSYS finite element analysis program and the MAZE preprocessor.
- 8/1989-12/1989     Teaching Assistant – Department of Civil Engineering, College of Engineering, North Carolina State University, Raleigh NC. Assistant for CE 202, Computer Applications in Civil Engineering. Prepared course materials including programming assignments, homework, and exams. Advised 90 students and graded exams and programs. Assisted with classroom instruction and computer demonstrations.

5/1989-8/1989      Research Assistant – Department of Civil Engineering, College of Engineering, North Carolina State University, Raleigh NC. Wrote a DBMS data acquisition application for a bar coding system for tracking construction site materials and equipment. Wrote DBMS applications to supply data to a CPM program, a project cost control spreadsheet, and a project inventory program. Also designed and implemented a patient paperwork database and wrote a corresponding data entry program. Created user's manual documenting entire system.

### **Honors and Awards**

Guardian of the Flame Faculty Award, Burning Spear Society, Florida State University (2008)

Engineering Service Award, FAMU-FSU College of Engineering (2008)

Faculty Mentor Award, Civil & Environmental Engineering Dept. Nominee, Florida State University (2008)

Outstanding Paper Award, Pedestrian Committee, Transportation Research Board, for "Wootton, I.A. and Spainhour, L.K., 'Examining Deficiencies in Florida Pedestrian Crash Data,' Transportation Research Record, Journal of the Transportation Research Board, Dec. 2007" (2007)

Engineering Service Award, FAMU-FSU College of Engineering (2003)

\*Teaching Incentive Program Award, Florida State University (1996)

\*Teacher of the Year, Civil Engineering Department, Voted on by members of Tau Beta Pi Honor Society, Florida State University (1996)

\*Advisor of the Year, Civil Engineering Department, Florida State University (1994-95)

+Graduate Research Fellowship; National Science Foundation (1990-93)

+Dean's Graduate School Fellowship; North Carolina State University (1989-90)

+NCSU Alumni Association Fellowship; North Carolina State University (1989-90)

+Engineering Senior Award for Scholarly Achievement; North Carolina State University (1989)

+Ronald E. Smith Scholarship; North Carolina State University (1988-89)

+Southeastern Gas Association Scholarship; North Carolina State University (1987-88)<sup>+</sup>

+Civil Engineering Merit Scholarship; North Carolina State University (1986-88)

+Freshman Merit Scholarship; North Carolina State University (1985-86)

+NCSU Engineering Scholars Program; North Carolina State University (1985-89)

### **Membership in Professional Organizations**

American Society of Civil Engineers, Member

Chi Epsilon Civil Engineering Honorary, Inductee

Phi Kappa Phi National Honor Society, Inductee

Tau Beta Pi Engineering Honorary, Inductee

Gamma Beta Phi Honorary, Inductee

Phi Eta Sigma Honorary, Inductee

Alpha Lambda Delta Honorary, Inductee

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\* Award received that occurred before last promotion at FSU.

+ Award received that occurred before employment at FSU.

## TEACHING

### **Courses Taught**

EGN 3311 Civil Engineering Mechanics  
CES 5845 Composites in Civil Engineering  
CGN 4800 Pre-Senior Design and Professional Issues  
CGN 5930 Engineering Data Systems  
EGN 3331 Strength of Materials  
EGN 3331 Strength of Materials Laboratory  
CES 3100 Structural Analysis  
\*CES 4605 Steel Design  
\*CES 4702 Concrete Design  
\*CES 5585 Earthquake/Wind Engineering  
\*EGN 2311 Vector Statics

### **New Course Development**

CGN 5310 Engineering Data Systems, first taught Fall 2002 as a special topics course  
CGN 4800 Pre-Senior Design and Professional Issues, first taught Fall 2001  
CES 5845 Composites in Civil Engineering, first taught Fall 2000

### **Chair of Doctoral Dissertation Supervisory Committees**

Samuel Adedokun (currently completing M.S. with plans to continue to Ph.D. program)  
Isaac Wootton (2006) “Identification of Contributing Factors and Accuracy of Fault Prediction Using Various Sources of Fatal Pedestrian Crash Data in Florida”

### **Member of Doctoral Dissertation Supervisory Committees**

Omar Thomas (exp. 2010)  
Doreen Kobelo (exp. 2010)  
Cezary Bojanowski (2009)  
Muhammed Enam (2007)  
Victor Mucharuzza (2006)  
Thobias Sando (2005)  
Claudia Wilson (2005)  
Hongyi Li (2005)  
Saif Haroon (2003)  
Nigel Richardson (2000)

### **Chair of Master’s Thesis Supervisory Committees**

Samuel Adedokun (exp. 2009) “Comparative Studies of Traffic and Crash Patterns in US and Nigeria”  
Meghana Chythana (2009) “Finite Element Analysis on the Effect of Fire for Specified Duration on a Reinforced Concrete Beam with Varied Boundary Conditions”  
Abhishek Mishra (2006) “Analysis of Run-Off-the-Road Crashes Involving Overcorrection”  
Velouse Pierre (2006) “Development of a Measure of Effectiveness for the Florida Elder Road User Program”

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\* Teaching/supervisory activities that occurred before last promotion at FSU.

- Prashant Singh (2005) “A Study of Fatal Run Off Road Crashes in the State of Florida”  
Bhuiyan Alam (2005) “Evaluation of Age as a Contributing Factor For Fatal Crashes in the State of Florida”  
Snehal Saravade (2005) “A Study of Fatal Rollover Crashes in the State of Florida”  
Sitaramaraju Mantena (2004) “Automation of Traffic Records Data Collection and Use” (co-directed w/Y. Owusu of IE Dept.)  
Jason Roth (2004) “Decision Support System to Rank and Evaluate Crash Attenuators”  
Nirup Kadabagere (2003) “Comparison of Fatal Traffic Crashes in Southern and Northern Regions of the State of Florida”  
Patrick McKee (2003) “The Effects of Steel and Polypropylene Fibers on the Integrity of Reinforced Reinforced Concrete in a Corrosive Environment”  
Randy E. Bradley, II (2001) “Investigation of Secondary Effects at Ultimate on Design and Behavior of Rigid Highway Bridge Frames”  
Bhargav B. Shah (2001) “Software Development for Collection and Analysis of Maintenance of Traffic Data”  
Isaac A. Wootton (2001) “Confinement of Steel Reinforced Concrete by Externally Applied Fiber Reinforced Polymer Wraps”

**Chair of Master’s Project Supervisory Committees**

- Martin R. Falmlen (2000) “A GIS Based Decision Model to Evaluate Available Area for Landfill Siting”

**Member of Master’s Thesis Supervisory Committees**

- Houston Spear (exp. 2010)  
Kacy Gilbert (exp. 2010)  
Jianying Wang (exp. 2009)  
Karen Boyster (exp. 2009)  
Robert Heck (exp. 2009)  
Ashley Campbell (2009)  
Brandon Baggett (2008)  
Tal Stricker (2008)  
Christina Newburgh (2007)  
Dorren Kobelo (2007)  
Judith Lwitiko (2007)  
Stacy Johnson (2006)  
Daniel Scheer (2005)  
Abhijeet Desai (2005)  
Deo Chimba (2004)  
Martine Fils-Aime (2004)  
Bernard Buxton-Tetteh (2004)  
Robert Medlock (2003)  
Kwabena Ofori (2003)  
Tanya Townsend (2002)  
Bryant McKinnie (2002)  
Eric Johnson (2002)  
Mike Leonard (2002)  
Abraham Prado (2002)

Jennifer Ach (2002)  
Yingqin (Elaine) Jin (2001)  
Eric Adams (2001)  
Matt Lewis (2000)  
Yougens Pierre (2000)  
Claudia Wilson (2000)  
Tanya Green (2000)  
Omar Sean Martin (1999)  
Echo Gates (1999)  
\* Chin-Ching Ling (1998)  
\* George Nicolopoulos (1998)  
\* Scott Eddy (1998)  
\* Yunxia He (1997)  
\* Zechun Gao (1997)  
\* Chris Gilbert (1997)  
\* Clayton Wolfe (1997)  
\* Liyun Gan (1996)  
\* Zenghai Yang (1996)  
\* Phuoc Mong Hoang (1996)  
\* Hubert Lee Broughton, III (1996)  
\* Edward Lloyd (1996)  
\* Kiran Kumar Varanasi (1995)  
\* Michael Davie (1995)  
\* Steve Long (1995)  
\* Zhiliang Yu (1994)  
\* John Poulson (1994)  
\* Jeff Parzych (1993)

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\* Teaching/supervisory activities that occurred before last promotion at FSU.

## SCHOLARLY OR CREATIVE ACTIVITIES

### Publications

#### **Refereed Journal Articles In Preparation**

Spainhour, L.K. and Wootton, I.A. (To be Submitted, Aug. 2009) "Analysis of Patterns and Fault in Motorcycle Crashes," *Accident Analysis and Prevention*, Elsevier.

This paper examines factors affecting fault in motorcycle crashes. A pattern analysis is conducted using the hierarchical ascendant classification technique to identify predominant factors in motorcycle crash causation. A number of recurrent themes are identified, including speeding on sport motorcycles (both where motorcycle and non-motorcycle drivers are at fault) and visibility/awareness of motorcycle in turning/merging crashes where a non-motorcycle driver was at fault. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction.

#### **Refereed Journal Articles Submitted**

Spainhour, L.K. and Smith, V.P. (Submitted, July 2009) "Effect of Quantitative and Qualitative Factors on Elder Driver Intersection Crashes," *Accident Analysis and Prevention*, Elsevier.

This paper examines factors affecting crash likelihood among older drivers are investigated and compared to those affecting younger drivers. Standard database elements describing intersection quality are paired with qualitative data on intersection safety obtained from visual inspection of video log images to evaluate factors such as visual clutter, approach sight distances, and the condition and visibility of pavement markings. Bhuiyan Alam is an Assistant Professor at the University of Toledo and a former graduate student at FSU who completed his M.S. degree under my direction.

Alam, B.M. and Spainhour, L.K. (Submitted, June 2009) "Age Distribution of At-Fault Drivers in Fatal Traffic Crashes in Florida," *Journal of Transportation Safety and Security*, Taylor and Francis.

This paper investigates the age of at-fault drivers as a contributing factor for fatal crashes in Florida, examining age, sex, and racial makeup of at-fault drivers. Risk factors are generated by normalizing the data to account for differencing in licensure and driving rates among drivers of different ages. Bhuiyan Alam is an Assistant Professor at the University of Toledo and a former graduate student at FSU who completed his M.S. degree under my direction.

#### **Refereed Journal Articles Published**

Alam, B.M. and Spainhour, L.K. (2009) "Contribution of Behavioral Aspects of Older Drivers to Fatal Crashes in Florida," *Transportation Research Record, Journal of the Transportation Research Board*, Number 2078, Pages 49-56. Based on a refereed paper presented at the 87<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

This paper uses the concept of overrepresentation factors to examine contributory factors in crashes caused by older drivers, isolating intersection and non-intersection crashes and examining officer reporting of “careless driving” as a contributing factor. Bhuiyan Alam is an Assistant Professor at the University of Toledo and a former graduate student at FSU who completed his M.S. degree under my direction.

Alam, B.M. and Spainhour, L.K. (2009) “Contributing Factors for Young At-Fault Drivers in Fatal Traffic Crashes in Florida,” Journal of Transportation Safety and Security, Taylor and Francis, Vol. 1, Pg. 152-168.

This paper uses the concept of overrepresentation factors to examine contributory factors in crashes caused by younger drivers, focusing on driver errors, alcohol use, presence of passengers, and compliance with graduated driver licensing statutes. Bhuiyan Alam is an Assistant Professor at the University of Toledo and a former graduate student who completed his M.S. degree under my direction.

Spainhour, L.K. and Mishra, A. (December 2008) “Analysis of Fatal Run-off-the-Road Crashes Involving Overcorrection,” Transportation Research Record, Journal of the Transportation Research Board, Number 2069, Pages 1-8. Based on a refereed paper presented at the 87<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

This paper uses a logistic regression analysis to examine factors contributing to run-off-the-road crashes in the state of Florida, finding high correlation to the presence of rumble strips and female drivers. Abhishek Mishra is a former graduate student at FSU who completed his M.S. degree under my direction.

Spainhour, L.K. and Wootton, I.A. (July 2008) “Corrosion Process and Abatement in Reinforced Concrete Wrapped by Fiber Reinforced Polymer,” Journal of Cement and Concrete Composites, Elsevier, Volume 30, Number 6, Pages 535-543.

This paper uses Faraday’s law to examine the onset and rate of corrosion in reinforced concrete cylinders confined with fiber reinforced polymer wraps using a variety of treatment techniques. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction.

Mantena, S., Spainhour, L.K., and Owusu, Y.A. (March 2008) “Time and Motion Study for Affordable Traffic Data Collection System for the State of Florida,” International Journal of Industrial Engineering, Volume 15, No. 1, Pages 122-131.

This paper describes the functionality and effectiveness of the TraCS software for collecting traffic records data at the site of a traffic event. Sitaramaraju Mantena is a former graduate student at FSU who completed his M.S. degree under co-direction of myself and Yaw Owusu, a colleague in the Department of Industrial Engineering at FSU.



Spainhour, L.K. and Wootton, I.A. (December 2007) "Modeling Fault in Fatal Pedestrian Crashes Using Various Data Sources," Transportation Research Record, Journal of the Transportation Research Board, Number 2002, Pages 64-71. Based on a refereed paper presented at the 86<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

This paper presents a logistic regression model that examines fault in pedestrian crashes, as well as contributory factors belonging to the at-fault driver. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction.

Wootton, I.A. and Spainhour, L.K. (December 2007) "Examining Deficiencies in Florida Pedestrian Crash Data," Transportation Research Record, Journal of the Transportation Research Board, Number 2002, Pages 31-38. Based on a refereed paper presented at the 86<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

This paper examines the accuracy and completeness of pedestrian crash data from various paper-based and computerized sources in the state of Florida. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction.

Spainhour, L.K., Wootton, I.A., Sobanjo, J.O., and Brady, P. (December 2006) "Causative Factors and Trends in Florida Pedestrian Crashes," Transportation Research Record, Journal of the Transportation Research Board, Number 1982, Pages 90-96. Based on a refereed paper presented at the 85<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C.

This paper presents and analyzes numerous statistics describing causative factors and trends in pedestrian crashes in the state of Florida and discusses potential countermeasures. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction. John Sobanjo is a faculty colleague at FSU, and Patrick Brady was an engineer at the Florida Department of Transportation.

Sando, T., Mussa, R. Sobanjo, J.O., and Spainhour, L.K. (2005) "Quantification of the Accuracy of Low Priced GPS Receivers for Crash Location," Journal of the Transportation Research Forum, Volume 44, Number 2, Pages 19-32.

This paper discusses the accuracy of low priced GPS receivers for applications such as crash location, considering scenarios such as presence of cloud cover, tall buildings/trees, and position of the unit. Tobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renatus Mussa, a faculty colleague at FSU. John Sobanjo is also a faculty colleague at FSU.

Sando, T., Mussa, R., Sobanjo, J., and Spainhour, L.K. (2005) "Advantages and Disadvantages of Different Crash Modeling Techniques," Journal of Safety Research, Volume 36, Number 5, Pages 485-487.

This paper presents the advantages and disadvantages of various crash modeling and incident location techniques, including those based on GPS coordinates and other location referencing systems. Tobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student at FSU who completed his Ph.D. degree under the direction of Renukappa Mussa, a faculty colleague at FSU. John Sobanjo is also a faculty colleague at FSU.

Green, T., Yazdani, N., Spainhour, L. and Cai, C. S. (August 2004) "Contribution of Intermediate Diaphragms in Enhancing Precast Bridge Girder Performance," Journal of Performance of Constructed Facilities, American Society of Civil Engineers, Volume 18, Number 3, Pages 142-146.

This paper describes the results of a parametric study using finite element analysis to examine the contribution of intermediate diaphragms to the stiffness of precast girder bridges. Tanya Green is a former graduate student who completed her M.S. degree under the direction of Nur Yazdani, a former faculty colleague at FSU, and Steven Cai is an engineer at the Florida Department of Transportation.

Wootton, I.A., Spainhour, L.K., and Yazdani, N. (November 2003) "Corrosion of Steel Reinforcement in CFRP Wrapped Concrete Cylinders," Journal of Composites for Construction, American Society of Civil Engineers, Vol. 7, No. 4, Pages 339-347.

This paper examines the corrosion of CFRP wrapped steel-reinforced concrete cylinders under a variety of treatments, including number and orientation of wrap layers and epoxy type, using both electrical and gravimetric techniques. Isaac Wootton is a former graduate student who completed his M.S. and Ph.D. degrees under my direction. Nur Yazdani is a former faculty colleague at FSU.

Green, T., Yazdani, N., Spainhour, L. and Cai, C.S. (2002) "Intermediate Diaphragm and Temperature Effects on Concrete Bridge Performance," Transportation Research Record, Journal of the Transportation Research Board, No. 1814, Pages 83-90.

This paper describes the results of a parametric study using finite element analysis to examine the effect of temperature on the stiffness of precast girder bridges with and without intermediate diaphragms. Tanya Green is a former graduate student who completed her M.S. degree under the direction of Nur Yazdani, a former faculty colleague at FSU, and Steven Cai is an engineer at the Florida Department of Transportation.

Green, T., Yazdani, N., Spainhour, L. and Cai, C.S. (2001) "Effect of Bearing Stiffness and Skew Angle on the Performance of Precast Concrete Bridge," Transportation Research Record, Journal of the Transportation Research Board, No. 1770, Pages 27-33.

This paper describes the results of a parametric study using finite element analysis to examine the effect of bearing stiffness and bridge skew angle on the stiffness of precast girder bridges with and without intermediate diaphragms. Tanya Green is a former graduate student who completed her M.S. degree under the direction of Nur Yazdani, a former faculty colleague at FSU, and Steven Cai is an engineer at the Florida Department of Transportation.

Mtenga, P.V. and Spainhour, L.K. (October 2000) “Applications of Mathematical Software Packages in Structural Engineering Education and Practice,” Technical Note, *Journal of Computing in Civil Engineering*, American Society of Civil Engineers, Volume 14, Number 4, Pages 273-278.

Using the design of stepped columns under buckling loads as an example, this paper describes the use of mathematical software packages to define closed-form solutions for complex engineering design problems, eliminating the need for empirical and tabulated design methods. Primus Mtenga is a faculty colleague at FSU.

Spainhour, L.K., Mtenga, P.V., and Sobanjo, J.O. (July 1999) “Multi-Criteria DSS with a Historical Database for Attenuator Selection, *Journal of Computing in Civil Engineering*, American Society of Civil Engineers, Pages 187-197.

This paper describes the design and functionality of a computerized information system, consisting of a historical database and decision hierarchy, in ranking crash attenuators based on relative life-cycle costs and impact performance. Primus Mtenga and John Sobanjo are faculty colleagues at FSU.

\*Spainhour, L.K. and Rasdorf, W.J. (1997) “Development of an Information Model for Composites Data and the Composites Design Process,” *Engineering with Computers: an International Journal for Computer-aided Mechanical and Structural Engineering*, Volume 13, Number 1, Springer-Verlag, New York, NY, Pages 48-64.

\*Spainhour, L.K. and Rasdorf, W.J. (July 1996) “Entity-Relationship Modeling of Composite Materials Data,” *Journal of Computing in Civil Engineering*, Volume 10, Number 9, American Society of Civil Engineers, Pages 226-235.

\*Spainhour, L. K., Rasdorf, W. J., and Alberts, J. M. (1995) “Advanced Composite Material Property Data Modeling for Engineering Analysis and Design,” *Computerization and Networking of Materials Databases: Fourth Volume, ASTM STP 1257*, C.P. Sturrock and E.F. Begley, Editors, American Society for Testing and Materials, Philadelphia, PA, Pages 110-126.

+Rasdorf, W.J., Spainhour, L.K., Patton, E.M., and Burns, B.P. (1993) “CDI: Linking Material Property Databases to Analysis Codes,” *International Journal of Advances in Engineering Software*, Computational Mechanics Institute, Southampton, England, Volume 16, Pages 145-152.

+Rasdorf, W.J., Spainhour, L.K., Patton, E.M., and Burns, B.P. (1993) “A Design Environment for Fiber-Reinforced Thick Composite Materials,” *Engineering with Computers: an International Journal for Computer-aided Mechanical and Structural Engineering*, Springer-Verlag, New York, NY, Volume 9, Pages 36-48.

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\* Scholarly activities that occurred before last promotion at FSU.

+ Scholarly activities that occurred before employment at FSU.

### **Invited Journal Issues Published**

Spainhour, L.K. and Shen, Y.C., Guest Editors (January 2001) “Information Technology for Life Cycle Infrastructure Management,” Special Issue, Journal of Computing in Civil Engineering, American Society of Civil Engineers, Volume 15, Number 1.

Young Shen and I served as guest editors of a special issue of the Journal of Computing in Civil Engineering presenting potential information technology solutions for managing various infrastructure components and systems throughout their life-cycle. As guest editors, we reviewed submissions, solicited reviews from other members of the ASCE Database and Information Management Committee (which sponsored the special issue), and selected the papers to be published. Young Shen was a faculty member at Rensselaer Polytechnic University at the time this journal issue was published.

### **Invited Journal Articles Published**

Shen, Y.C. and Spainhour, L.K. (January 2001) “IT: A Potential Solution for Managing the Infrastructure Life Cycle,” Guest Editorial, Special Issue on Information Technology for Life-cycle Infrastructure Management, Journal of Computing in Civil Engineering, American Society of Civil Engineers, Volume 15, Number 1, Pages 1-2.

This paper is a guest editorial introducing a special issue of the Journal of Computing in Civil Engineering co-edited by myself and Young Shen. The editorial presented potential information technology solutions for managing various infrastructure components and systems throughout their life-cycle, using papers from the special issue as examples. Young Shen was a faculty member at Rensselaer Polytechnic University at the time this article was written.

### **Refereed Reviews Published**

<sup>+</sup>Spainhour, L.K. (July 1994) “Discussion of ‘Knowledge Representation and Processing in Relational Data Base’ by T.M. Adams,” Journal of Computing in Civil Engineering, Volume 8, Number 3, Pages 397-398. Original paper is Adams, T.M. (April 1993) “Knowledge Representation and Processing in Relational Data Base,” Journal of Computing in Civil Engineering, Volume 7, Number 2, Pages 238-255.

### **Non-Refereed Publications Published**

Spainhour, L.K., Brill, D., Sobanjo, J.O., Wekezer, J., Mtenga, P.V. (April 2005) “Evaluation of Traffic Crash Fatality Causes and Effects: A Study of Fatal Traffic Crashes in Florida From 1998-2000 Focusing on Heavy Truck Crashes,” Final Report, Project Number BD-050, Florida Department of Transportation.

This publication is the final report of an FDOT sponsored project that discusses contributing factors in various types of traffic crashes in the state of Florida during the study period; potential countermeasures are presented for each type of crash. David Brill completed his B.S. at FSU and is a retired traffic homicide who contributed to the project. John Sobanjo, Jerry Wekezer, and Primus Mtenga are faculty colleagues at FSU.

Spainhour, L.K. and Mtenga, P.V. (May 2002) "Analysis of Work Zone MOT Data Collection and Usage Procedures," Final Report, Project Number BC-395, Florida Department of Transportation.

This publication is the final report of an FDOT sponsored project that examines current procedures for collecting work zone maintenance of traffic data and, based on that information, develops an improved, computer-based process. Primus Mtenga is a faculty colleague at FSU.

Spainhour, L.K. and Yazdani, N. (December 2000) "Composite Fiber Wrapping of Bridge Elements in the Splash Zone," Final Report, Project Number CMS-9504193, National Science Foundation.

This publication is the final report of an NSF sponsored project that examines the effect of fiber-reinforced polymer wraps on the corrosion of reinforcing steel in concrete columns under a simulated marine tidal exposure. Nur Yazdani is a former faculty colleague at FSU.

Mtenga, P.V. and Spainhour, L.K. (April 2000) "Field Performance of Impact Attenuators: Design and Population of a Comprehensive Database," Final Report, Project Number BA-493, Florida Department of Transportation.

This publication is the final report of an FDOT sponsored project in which a database and decision support system was developed to examine the field performance of permanent and construction zone crash attenuators in the state of Florida. Primus Mtenga is a faculty colleague at FSU.

\*Spainhour, L.K. (Spring 1997) "Civil Engineering: A Bridge to Employment," Computer and Engineering Horizons, Peterson's Magazine Group, Pages 12-13. (Invited)

+Spainhour, L.K. (June 1994) "Composite Materials Property Data Modeling with the Entity-Relationship Method," Doctoral Dissertation, Department of Civil Engineering, North Carolina State University, Raleigh, NC.

+Spainhour, L.K. and Rasdorf, W.J. (April 1991) "Composite Database Interface Users Manual," Contractor Report BRL-CR-663, Ballistic Research Laboratory, Aberdeen Proving Ground, Aberdeen, MD .

+Spainhour, L.K. and Rasdorf, W.J. (January 1991) "A Computer-Aided Analysis System for Fiber-Reinforced Composite Materials," Masters Thesis, Technical Report CE-011-91, Department of Civil Engineering, North Carolina State University, Raleigh, NC.

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\* Scholarly activities that occurred before last promotion at FSU.

+ Scholarly activities that occurred before employment at FSU.

## **Presentations**

### **Refereed Papers Presented at Conferences and Symposia**

For refereed papers presented at conferences and symposia, 50% were international in scope and 50% were national in scope.

Alam, B.M. and Spainhour, L.K. (January 2009) “Behavioral Aspects of Younger Drivers to Fatal Crashes in Florida,” Poster Presentation, 88<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington D.C. (National)

This paper uses the concept of overrepresentation factors to examine contributory factors in crashes caused by older drivers. Bhuiyan Alam is an Assistant Professor at the University of Toledo and a former graduate student at FSU who completed his M.S. degree under my direction.

Refereed as follows: Reviewed by three peer reviewers prior to revision and publication.

\*Spainhour, L.K. and Thompson, I.M. (January 1998) “Effect of Carbon Fiber Jackets on Reinforced Concrete Columns Exposed to a Simulated Tidal Zone,” Fiber Composites in Infrastructure: Proceedings of the Second International Conference on Composites in the Infrastructure, Tucson, AZ, Volume 1, Pages 426-439. (International)

Refereed as follows: Reviewed by at least two peer reviewers; reviewer comments must be addressed before publication in proceedings.

### **Non-Refereed Papers Presented at Conferences and Symposia**

For non-refereed papers presented at conferences and symposia, 88% were international, 6% were national, and 6% were state or local in scope.

Spainhour, L.K., Wootton, I.A. and Yazdani, N. (June 2002) “Effect of Composite Fiber Wraps on Corrosion of Reinforced Concrete Columns in a Simulated Splash Zone,” Proceedings of the Third International Conference on Composites in the Infrastructure, San Francisco, CA, 13 pages. (International)

This paper presents preliminary results investigating the corrosion of CFRP wrapped steel-reinforced concrete cylinders under a variety of treatments, including number and orientation of wrap layers and epoxy type, using primarily physical and gravimetric measurements. Isaac Wootton is a former graduate student who completed his M.S. and Ph.D. degrees under my direction. Nur Yazdani is a former faculty colleague at FSU.

Wootton, I.A., Spainhour, L.K. and Yazdani, N. (June 2002) “Onset and Rate of Corrosion in CFRP Wrapped Reinforced Concrete Cylinders,” Proceedings of the Third International Conference on Composites in the Infrastructure, San Francisco, CA, 12 pages. (International)

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\* Scholarly activities that occurred before last promotion at FSU.

This paper presents preliminary results of a study using electrical techniques to examine the onset and rate of corrosion in reinforced concrete cylinders confined with fiber reinforced polymer wraps using a variety of treatment techniques. Isaac Wootton is a former graduate student who completed his M.S. and Ph.D. degrees under my direction. Nur Yazdani is a former faculty colleague at FSU.

Wootton, I.A., Spainhour, L.K., and Yazdani, N. (September 2000) “FRP Wrapping of Reinforced Concrete Cylinders for Improved Corrosion Performance,” Proceedings of the Florida Section Annual Meeting, American Society of Civil Engineers, St. Petersburg Beach, FL, 19 pages. (State)

This presentation discusses techniques for wrapping reinforced concrete columns with fiber-reinforced polymers and presents research findings showing the effectiveness of such techniques in delaying and reducing the effects of rebar corrosion. Isaac Wootton is a former graduate student who completed his M.S. and Ph.D. degrees under my direction. Nur Yazdani is a former faculty colleague at FSU.

Mtenga, P.V., Spainhour, L.K., and Sobanjo, J.O. (August 2000) “Integration of a Database and a Decision Support Tool for Crash Cushion Selection,” Proceedings of the International Congress on Computing in Civil and Building Engineering, American Society of Civil Engineers, San Francisco, CA, Volume 2, Pages 1511-1518. (International)

This paper describes the design and functionality of a prototype computerized information system consisting of a historical database and decision hierarchy, and presents preliminary results in ranking crash attenuators based on relative life-cycle costs and impact performance. Primus Mtenga and John Sobanjo are faculty colleagues at FSU.

\*Spainhour, L.K. and Mtenga, P.V. (June 1997) “Field Performance of Roadside Barriers: Design and Population of a Statistical Database,” Proceedings of the Fourth International Congress on Computing in Civil Engineering, American Society of Civil Engineers, Philadelphia, PA, Pages 153-160. (International)

\*Spainhour, L.K. and Rasdorf, W.J. (June 1995) “Suitability of ER Method for Composite Materials Data,” Proceedings of the Second International Congress on Computing in Civil Engineering, J.P. Mohsen, Editor, American Society of Civil Engineers, Atlanta, GA, Volume 2, Pages 1598-1605. (International)

+Spainhour, L.K. and Rasdorf, W.J. (August 1993) “Developing and Implementing a Conceptual Composite Materials Design Database,” Proceedings of the Seventh Symposium on Engineering Database Management, 1993 ASME International Computers in Engineering Conference, American Society of Mechanical Engineers, San Diego, CA; also in Spainhour, L.K. and Rasdorf, W.J. (1993) Engineering Data Management: Key to Today's Global Marketplace, American Society of Mechanical Engineers, New York, NY, Pages 181-190. (International)

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\* Scholarly activities that occurred before last promotion at FSU.

+ Scholarly activities that occurred before employment at FSU.

<sup>+</sup>Spainhour, L.K. and Rasdorf, W.J. (June 1993) “A Constraint-Based Composites Design Advisor,” Proceedings of the Fifth International Conference on Computing in Civil Engineering, American Society of Civil Engineers, Anaheim, CA, Pages 773-780. (International)

<sup>+</sup>Rasdorf, W.J., Spainhour, L.K., and Burns, B.P. (August, 1992) “A Database Design Methodology for Fiber-Reinforced Composite Materials,” Proceedings of the Sixth Symposium on Engineering Database Management, 1992 ASME International Computers in Engineering Conference, American Society of Mechanical Engineers, San Francisco, CA; also in Rasdorf, W.J., Spainhour, L.K., and Burns, B.P. (1992) Engineering Data Management: Key to Integrated Product Development, T.R. Chase, Editor, American Society of Mechanical Engineers, New York, NY, Pages 155-166. (International)

<sup>+</sup>Spainhour, L.K., Rasdorf, W.J., Patton, E.M., Burns, B.P., and Collier, C.S. (August 1991) “A Computer-Aided Analysis System with DBMS Support for Fiber-Reinforced Composite Materials,” Proceedings of the Fifth Symposium on Engineering Database Management, 1991 ASME International Computers in Engineering Conference, American Society of Mechanical Engineers, Santa Clara, CA; also in Spainhour, L.K., Rasdorf, W.J., Patton, E.M., Burns, B.P., and Collier, C.S. (1991) Engineering Databases: An Enterprise Resource, V. Saxena, Editor, American Society of Mechanical Engineers, New York, NY, Pages 37-48. (International)

<sup>+</sup>Rasdorf, W.J., Spainhour, L.K., Patton, E.M., and Burns, B.P. (May 1991) “DBMS Support for Fiber-Reinforced Composite Materials Analysis,” Proceedings of the Seventh Conference on Computing in Civil Engineering, American Society of Civil Engineers, Washington, D.C., Pages 609-619. (National)

### **Invited Presentations and Symposia**

For invited presentations at conferences and symposia, 50% were international and 50% were state or local in scope.

Presenter (April 2006) “Electronic Capture and Transmission of DUI and Crash Records,” DUI Workshop, Traffic Records Coordinating Committee, Tallahassee, FL. (State)

Presenter (January 2005) “Electronic Crash and Citation Reporting Using TraCS Software,” Winter Meeting, Florida Police Chiefs Association, St. Augustine, FL. (State)

Moderator (June 2002) “Column Wrapping II,” Third International Conference on Composites in Infrastructure, San Francisco, CA. (International)

Panelist and Moderator (August 2000) “Information Technology for Life-Cycle Infrastructure Management,” International Congress on Computing in Civil and Building Engineering, American Society of Civil Engineers, Stanford, CA. (International)

### **Non-Refereed Presentations and Symposia**

For non-refereed presentations at conferences and symposia, 90% were international and 10% were national in scope.

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<sup>+</sup> Scholarly activities that occurred before employment at FSU.



Sando, T., Mussa, R., Sobanjo, J., and Spainhour, L. (August 2004) "GPS Usability in Crash Location," Presented at the Institute of Transportation Engineers 2004 Annual Meeting and Exhibit, Orlando, FL. (International)

This presentation discussed the application of GPS technology for the location of traffic crashes, presenting a prototype implementation that uses GPS receivers in law enforcement vehicles that was piloted with a local law enforcement agency. Thobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renatus Mussa, a faculty colleague at FSU. John Sobanjo is also a faculty colleague at FSU.

Wu, H., Sando, T., Mussa, M., Sobanjo, J.O. and Spainhour, L.K. (August 2004) "GPS/GIS Integration for Improving Crash Location Data Accuracy," ESRI International User Conference, San Diego, CA. (International)

This presentation discussed an integrated software and hardware system that utilizes GPS data and GIS mapping techniques to locate and index traffic crash data, improving the accuracy and usability of the data. Haito Wu is a former graduate student in the computer science department at FSU who served as a software developer on the research project. Thobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renatus Mussa, a faculty colleague at FSU. John Sobanjo is also a faculty colleague at FSU.

Mussa, M., Sando, T., Wu, H., Sobanjo, J.O. and Spainhour, L.K. (August 2004) "Development of an Automated Traffic Crash Mapping System Using MapObjects," ESRI International User Conference, San Diego, CA. (International)

This presentation discussed a GIS-based software system that analyzes traffic crash data and identifies high crash intersections and segments as candidates for future countermeasures. Thobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renatus Mussa, a faculty colleague at FSU. John Sobanjo is also a faculty colleague at FSU. Haito Wu is a former graduate student in the computer science department at FSU who served as a software developer on the research project.

Sobanjo, J.O., Ofosu, K., Spainhour, L.K., Mussa, M. and Sando, T. (August 2004) "Location Reference Systems for Florida Roadway Crashes," ESRI International User Conference, San Diego, CA. (International)

This presentation discussed current and proposed techniques for locating crash events on Florida roadways, including GPS and milepost-based measurement techniques. Kwabena Ofosu is a former graduate student of John Sobanjo, a faculty colleague at FSU. Thobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renatus Mussa, a faculty colleague at FSU.

Sando, T., Mussa, M., Wu, H., Sobanjo, J.O. and Spainhour, L.K. (August 2004) “A Cost-Effective GIS Safety Analysis Tool for Improving Highway Safety,” ESRI International User Conference, San Diego, CA. (International)

This presentation discussed an integrated software and hardware system that utilizes GPS data and GIS mapping techniques to locate and index traffic crash data, improving the accuracy and useability of the data. Tobias Sando is currently an Assistant Professor at the University of North Florida and a former graduate student who completed his Ph.D. degree under the direction of Renu S. Mussa, a faculty colleague at FSU. Haito Wu is a former graduate student in the computer science department at FSU who served as a software developer on the research project. John Sobanjo is also a faculty colleague at FSU.

Spainhour, L.K., Mantena, S., Wootton, I.A., Mussa, R.N. and Sobanjo, J.O. (July 2004) “Improving Accuracy and Efficiency of Florida Traffic Records through Automated/Electronic Data Collection,” 30<sup>th</sup> International Forum on Traffic Records and Highway Information Systems, Nashville, TN. (International)

This presentation discussed the benefits of converting from a paper- to an electronic-based system for collecting, transmitting, and analyzing traffic records data in the state of Florida, using the TraCS software system as an example. Sitaramaraju Mantena is a former graduate student who completed his M.S. degree under co-direction of myself and Yaw Owusu, a colleague in the Department of Industrial Engineering at FSU. Isaac Wootton is a former student at FSU who completed his Ph.D. under my direction. Renu S. Mussa and John Sobanjo are faculty colleagues at FSU.

Spainhour, L.K., Wootton, I.A., and Sobanjo, J.O. (July 2004) “Improved Methods for Analyzing Florida Pedestrian Fatal Crash Data,” 30<sup>th</sup> International Forum on Traffic Records and Highway Information Systems, Nashville, TN. (International)

This presentation discussed various issues with accuracy and completeness of traffic records data and discusses methods to ameliorate these issues, using the state of Florida as an example. Isaac Wootton is a former graduate student at FSU who completed his M.S. and Ph.D. degrees under my direction. John Sobanjo is a faculty colleague at FSU.

Spainhour, L.K., Singh, P. and Sobanjo, J.O. (July 2004) “Safety Analysis of Fatal Crashes Involving High Speed Vehicles,” 30<sup>th</sup> International Forum on Traffic Records and Highway Information Systems, Nashville, TN. (International)

This presentation discussed contributing factors in fatal traffic crashes involving high speed vehicles, presenting case studies and potential countermeasures. Prashant Singh is a former graduate student at FSU who completed his M.S. degree under my direction. John Sobanjo is a faculty colleague at FSU.

Alam, B., Spainhour, L.K., and Sobanjo, J.O. (July 2004) “Evaluation of Age as a Factor for Fatal Crashes in the State of Florida,” 30<sup>th</sup> International Forum on Traffic Records and Highway Information Systems, Nashville, TN. (International)

This presentation discussed contributing factors in fatal traffic crashes involving older drivers in the state of Florida, presenting case studies and potential countermeasures. Bhuiyan Alam is currently a faculty member at the University of Toledo who completed his M.S. degree at FSU under my direction. John Sobanjo is a faculty colleague at FSU.

Yazdani, N., Haroon, S., and Spainhour, L. (October 2003) “Application of Fiber Reinforced Concrete in the End Zones of Post-Tensioned Bridge Girders,” 2003 American Concrete Institute (ACI) Fall Convention, Boston, MA. (National)

This presentation discussed the effect of steel and FRP fibers on the bursting stresses in the anchorage zone of post-tensioned concrete beams. Saif Haroon completed his Ph.D. degree at FSU under the direction of Nur Yazdani, a former faculty colleague at FSU.

## **Information and Communication Technology**

### **Computer Software Development**

Spainhour, L.K., Mussa, R. Sobanjo, J.O. Shumaker, A., Trimble, S. (2008) TraCS-Florida: Traffic and Criminal Software-Florida, Florida Department of Transportation, Tallahassee, FL.

The TraCS-Florida software was developed by a programming staff at FSU lead by Aaron Shumaker and formerly lead by Stanley Trimble. Renatus Mussa and John Sobanjo, both faculty colleagues at FSU, and myself, are co-PI’s on the series of Florida Department of Transportation grants that funded the software development. The software is based on the National Model developed by the Iowa Department of Transportation and includes numerous customizations and enhancements for the collection, management, and use of traffic records data in the state of Florida. It is currently in use in some capacity in over 100 law enforcement agencies in the state of Florida.

## **Contracts and Grants**

### **Contracts and Grants Funded**

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS Training, Support, and Enhancement, FY 08-09,” Florida Department of Transportation, of Transportation, 10/1/08-9/30/09, \$600,490.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS Training, Support, and Enhancement, FY 07-08,” Florida Department of Transportation, of Transportation, 10/1/07-9/30/08, \$548,449.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS Training, Support, and Enhancement, FY 06-07,” Florida Department of Transportation, of Transportation, 10/13/06-9/30/07, \$678,888.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS National Model Support,” Florida Department of Transportation, 2/01/06-9/30/06, \$45,000.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS Training, Support, and Enhancement, FY 05-06,” Florida Department of Transportation, of Transportation, 10/04/05-9/30/06, \$785,994.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “TraCS Training, Support, and Enhancement,” Florida Department of Transportation, 10/05/04-9/30/05, \$948,733.

Spainhour, L.K., Mussa, R., and Sobanjo, J. “Traffic Records Automation Project—Phase II,” Florida Department of Transportation, 12/16/03-9/30/04, \$195,465.

- Sobanjo, J., Spainhour, L.K., and Mussa, R., Co-Principal Investigator on “Crash Location Reference and Traffic Sign Inventory System-Phase II,” Florida Department of Transportation, 12/16/03-9/30/04, \$110,408.
- Mussa, R., Sobanjo, J., and Spainhour, L.K., “Implementation of GIS for Crash Data Management-Phase II,” Florida Department of Transportation, 12/16/03-9/30/04, \$150,000.
- Mussa, R., Sobanjo, J., and Spainhour, L.K., “Local Agency Automation Support-Phase II,” Florida Department of Transportation, 12/16/03-9/30/04, \$350,000.
- Spainhour, L.K., Mussa, R., and Sobanjo, J. “Traffic Records Automation Project,” Florida Department of Transportation, 11/19/02-9/30/03, \$191,274.
- Sobanjo, J., Spainhour, L.K., and Mussa, R., “Crash Location Reference and Traffic Sign Inventory System,” Florida Department of Transportation, 2/04/03-9/30/03, \$178,000.
- Mussa, R., Sobanjo, J., and Spainhour, L.K., “Implementation of GIS for Crash Data Management,” Florida Department of Transportation, \$11/07/02-9/30/03, 200,000.
- Mussa, R., Sobanjo, J., and Spainhour, L.K., “Local Agency Automation Support,” Florida Department of Transportation, 11/07/02-9/30/03, \$100,000.
- Sobanjo, J., Tawfiq, K., and Spainhour, L.K., “Design Guidelines for Highway Railroad Grade Crossing Profiles in Florida--Phase I,” Florida Department of Transportation, 9/30/02-7/31/04, \$106,273.
- Spainhour, L.K., Mussa, R., and Sobanjo, J. “Integrated Computer System for Traffic Records Data Collection,” Florida Department of Transportation, 5/16/02-9/30/02, \$143,931.
- Sobanjo, J., Mussa, R., and Spainhour, L.K., “Location Reference System for Florida Roadway Crashes,” Florida Department of Transportation, 5/16/02-9/30/02, \$77,005.
- Spainhour, L.K., Sobanjo, J., Wekezer, J. and Mtenga, P., on “Evaluation of Traffic Crash Fatality Causes and Effects,” Florida Department of Transportation, 6/25/01-1/31/05, \$449,974.
- Spainhour, L.K. and Mtenga, P., on “Pilot Study on Work Zone Traffic Control and Safety,” Florida Department of Transportation, 7/31/01-4/20/02, \$39,487.
- Yazdani, N. and Spainhour, L.K., “Time Dependent Strength and Elasticity Development in Florida Concrete,” Florida Department of Transportation/Federal Highway Administration, 2001-03, \$120,000.
- Spainhour, L.K., “Detection and Treatment of Corrosion in Reinforced Concrete,” Council on Research and Creativity, Florida State University, 11/01/00-10/31/01, \$10,000.
- Yazdani, N. and Spainhour, L.K., “Application of Steel Fiber Reinforcement in Anchorage Zones of Post-Tensioned Bridge Girders,” Florida Department of Transportation, 10/1/99-9/30/01, \$75,000.
- Mtenga, P. and Spainhour, L.K., “Analysis of Work Zone Maintenance of Traffic (MOT) Data Collection and Usage Procedures,” Florida Department of Transportation, 8/1/99-7/31/01, \$161,380.
- \*Yazdani, N. and Spainhour, L.K., “Effect of Boundary Conditions on Bridge Superstructure Performance,” Florida Department of Transportation/Federal Highway Administration, 10/1/97-3/1/99, \$75,000.
- \*Spainhour, L.K. and Mtenga, P. on “Field Performance of Roadside Barriers: Design and Population of a Statistical Database,” Florida Department of Transportation, 9/1/96-8/31/99, \$230,717.

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\* Grants received before last promotion at FSU.

- \*Spainhour, L.K. and Yazdani, N. “Composite Fiber Wrapping of Bridge Elements in the Splash Zone,” National Science Foundation, 2/1/96-9/31/00, \$149,789.
- \*Wekezer, J. and Spainhour, L.K. “Analysis of Dynamic Stress Fields in Pavements and Transportation Infrastructure,” National Science Foundation, 1/1/96-12/31/98, \$260,000.
- \*Spainhour, L.K. “Use of Fiber-Reinforced Composite Materials in Civil, Structural, and Infrastructure Applications,” Council on Research and Creativity, Florida State University, 5/1/95-8/15/95, \$10,050.

### **Contracts and Grants Denied**

- Spainhour, L.K. and Roddenberry, M. Corrosion Characteristics of Post-Tensioning Strands in UngROUTED Ducts, Florida Department of Transportation, \$149,645, 2009.
- Spainhour, L.K., Mussa, R., and Sobanjo, J. Improving Accuracy of Commercial Carrier Data on Crash Reports Using Pre-and Post-Collection Approaches, Florida Department of Transportation, \$238,812, 2007.
- Yazdani, N. and Spainhour, L.K., Evaluation of Seismically Controlled FDOT Bridges, Florida Department of Transportation, \$120,000, 2002.
- Yazdani, N. and Spainhour, L.K., Application of Steel Fiber Reinforcement in the General Anchorage Zones of Post-Tensioned Bridge Girders (Phase II), Florida Department of Transportation, \$133,361, 2002.
- Spainhour, L.K., Corrosion Resistance of FRP-Wrapped Rectangular RC Columns, National Science Foundation, \$192,813, 2002.
- Yazdani, N. and Spainhour, L.K., Improvement of Stress-Laminated T- and Box-Beam Timber Bridges Using Non-Steel Composites, United States Dept. of Agriculture, \$208,773, 2001.
- Wekezer, J. and Spainhour, L.K. Crashworthiness of Ship Hull and Waterfront Construction, Office of Naval Research, \$1,012,524, 2001.
- Spainhour, L.K. Residual Capacity of FRP Wrapped Concrete with Corrosion Damage, Florida Department of Transportation, \$117,180, 2000.
- Spainhour, L.K. and Yazdani, N. Seismic Upgrade of Unreinforced Masonry Buildings Through FRP Overlay, Army Corps of Engineers, \$146,415, 2000.
- Mtenga, P. and Spainhour, L.K. Development of Need Threshold and Acceptance Criterion for CFRP Retrofit of Concrete Structures, National Science Foundation, Unknown, 2000.
- Sobanjo, J., Mtenga, P. and Spainhour, L.K. Acquisition of Equipment for Dynamic Structural Research Laboratory at FAMU-FSU, National Science Foundation, \$651,350, 1999.
- \*Sobanjo, J. and Spainhour, L.K. High Performance Concrete in Florida, Florida Department of Transportation, \$118,560, 1998.
- \*Sobanjo, J. and Spainhour, L.K. Development of CODES for Florida: Applications to Roadway Design Decisions, NHTSA, \$244,567, 1998.
- \*Sobanjo, J. and Spainhour, L.K. A Computerized Semi-Markov Model for Estimating the Service Lives of Highway Bridges, National Science Foundation, \$231,749, 1998.
- \*Spainhour, L.K. and Yazdani, N. FRP/Concrete Hybrid Structural Components for Waterfront Construction, Office of Naval Research, \$143,331, 1998.
- \*Yazdani, N. and Spainhour, L.K., Acquisition of Equipment for Dynamic Structural Research Laboratory at FAMU-FSU, National Science Foundation, Unknown, 1998.

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\* Grants received before last promotion at FSU.

\* Proposals submitted before last promotion at FSU.

\* Proposals submitted before last promotion at FSU.

- \*Spainhour, L.K. and Mtenga, P., GIS-Based Data Analysis for Improved Work Zone Traffic Control and Safety, Florida Department of Transportation, \$140,700, 1997.
- \*Spainhour, L.K. and Wekezer, J., Introduction to Comprehensive Finite Element Technology: An Undergraduate Research and Mentoring Program, National Science Foundation, \$164,367, 1996.
- \*Spainhour, L.K. and Yazdani, N., Composite fiber wrapping for protection, strengthening, and repair of bridge elements, Florida Department of Transportation, \$144,900, 1994.

## SERVICE

### Florida State University

#### University

Committee Member, AMGRF Renovation Advisory Committee, Antarctic Marine Geological Research Facility, FSU, 2007. Performed structural calculations and advised curators on the renovation of cold storage facility.

Advisory Board Member, Women in Math, Science, and Engineering program, FSU, 2001-present

Graduation Faculty Representative, FSU, Spring 2005, Fall 2007

Committee Member, Undergraduate Honors Thesis Committee, Mark Carpenter, Dept. of Computer Science, 2005-06

Mentor, Florida Georgia Louis Stokes Alliance for Minority Participation (FG-LSAMP) program, 2004

Invited presentation, "A Study of Fatal Traffic Crashes in Florida," Women in Math Science and Engineering Colloquium, Florida State University, November 2002

Committee member, FSU Promotion and Tenure Committee, 2000

Committee member, FSU Teaching Incentive Program (TIP) Award Selection Committee, 1999

Panel Member, "Women Faculty in Science and Engineering," Women in Science Program, FSU, October 1999

\* Invited presentation, "Civil Engineering as a Career Choice," FSU Women in Science class, October, 1998

\* Mentor, Women's Leadership Mentoring Program at FSU, 1993-1998

\* Graduation Marshall, FSU, 1995-1998

\* Representative, College of Engineering, FSU Seminole Scholars Day, February 1995

\* Invited presentation, "Mentoring Female College Students," Women's Leadership Mentoring Program, Florida State University, December 1995

\* Department representative, TOPS advising program at FAMU, Summer 1994 and 1995

\* Department representative, Civil Engineering representative at FSU Girls' State program, September 1994

#### FAMU-FSU College of Engineering

Instructor, EIT/FE Review Sessions, Structures and/or Mechanics of Materials, Spring and Fall 1996-2006, 2008-2009

Guest Lecturer, First-Year Engineering Lab, Fall and Spring semesters, 2001-2005

Committee member, Student-Faculty committee, 2004-2005

Invited presentation, "Perspectives of a Recently Tenured Faculty Member," Promotion and Tenure Workshop, FAMU-FSU College of Engineering, May 2002

Committee member, Promotion and Tenure Committee, FAMU-FSU College of Engineering, 2000

Committee member, Teaching Incentive Program (TIP) Award Selection Committee, FAMU-FSU College of Engineering, 1999

Committee member, Byron and Mildred Spangler Award Selection Committee, Fall 1999

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\* Service activities occurred before last promotion at FSU.

- \*Invited presentation, “What is Civil Engineering?” Minority Introduction to Engineering (MITE) program, June 1996 and June 1997
- \*Committee member, Student-Faculty committee, 1993-1997
- \*Faculty mentor, Research Careers for Minority Scholars program, Fall 1994-Spring 1996
- \*Committee member, Committee for Tenth Anniversary Activities, Spring 1994

### **Department of Civil and Environmental Engineering**

- Coordinator, Structures area, 2008-present
- Committee member, Structures Faculty Search committee, 2008
- Committee chair, Undergraduate committee, 2006-present
- Committee member, ABET Ad-Hoc committee, 2008
- Committee member, Undergraduate committee, 1993-1996; 1998-2006
- Committee member, Student-Faculty committee, 2005-2006
- Committee member, Department Chair Search committee, 2004-2005
- Department representative at FSU Gradation, Spring 2004
- Committee member, Department Assessment committee, 2004-present
- SACS Accreditation Coordinator, 2003-2004
- Committee member, Outcomes Assessment committee, 2002-2003
- Committee member, Promotion and Tenure committee, 2001, 2002, 2004
- Committee member, Organizing committee, 2002 Southeast Regional ASCE Student Conference, FAMU-FSU College of Engineering, April 4-6, 2002.
- Committee chair, Promotion and Tenure committee, 2000
- ABET Coordinator, oversaw Year 2000 curriculum revision, 1999
- \*Committee member, By-laws committee, 1996-1998
- \*Committee member, Computer committee, 1993-1998, Chair 1996-1998
- \*Committee member, Awards committee, 1993-96
- \*Public relations representative 1993-1996

## **The Profession**

### **Editorial Board Memberships**

Associate Editor, Journal of Computing in Civil Engineering, American Society of Civil Engineers, October 2000 – October 2005

### **Guest Editing for Refereed Journals**

Shen, Y. and Spainhour, L.K., Editors (January 2001) Special Issue on Information Technology for Life-Cycle Infrastructure Management, Journal of Computing in Civil Engineering, American Society of Civil Engineers, Volume 15, Number 1.

### **Guest Reviewer for Refereed Journals**

*Cement and Concrete Composites*, Elsevier, 2008  
*Journal of Infrastructure Systems*, American Society of Civil Engineers, 2008  
*ACI Materials Journal*, American Concrete Institute, 2007  
*Journal of Professional Issues in Engineering Education*, American Society of Civil Engineers, 2006

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\* Service activities occurred before last promotion at FSU.



*Transportation Research Record*, 2006-present  
*Structural Engineering and Mechanics, An International Journal*, 2006  
*ACI Structures Journal*, American Concrete Institute, 2005-present  
*Data Sciences Journal*, CODATA, 2003  
*Journal of Composites in Construction*, American Society of Civil Engineers, 2003-2004  
*Journal of Transportation Engineering*, American Society of Civil Engineers 1998-2000  
\*Second International Conference on Composites in Civil Engineering, 1997  
\*Fourth International Symposium on the Computerization and Use of Material Property Data,  
American Society of Testing and Materials 1993  
*Journal of Computing in Civil Engineering*, American Society of Civil Engineers, 1990-present

### **Reviewer for Textbooks and Manuscripts**

Manuscript for *Fundamentals of Structural Engineering*, by Connor & Faraji (Wiley and Sons), 2009  
Concept manuscript for a mechanics of materials text (Wiley and Sons), 2006  
Concept manuscript for a novel statics text (Wiley and Sons), 1999  
Manuscript for *Engineering Mechanics: Statics, Second Edition*, by W.F. Riley and L.D. Sturges (Wiley and Sons), 1995\*

### **Reviewer for Grant Applications**

East Asia and Pacific Program, National Science Foundation, September 2000  
Information and Data Management Program, National Science Foundation, June 2000  
Structural Systems and Hazard Mitigation of Structures Program, National Science Foundation, February 2000

### **Service to Professional Associations**

Committee Member, Pedestrian Research Subcommittee, Pedestrian Committee ANF10  
Transportation Research Board, 2008-2009  
Faculty Advisor, Tau Beta Pi, 2008  
Control Group Member, Database and Information Management Committee, American Society of Civil Engineers, 2000-2004  
Faculty Advisor American Society of Civil Engineers, 1994-2003  
Committee Member, Database and Information Management Committee, American Society of Civil Engineers, 1993-present  
Committee Member, Structural Composites and Plastics Committee, American Society of Civil Engineers, 1998-present

## **The Community**

### **Service to the Community**

Guest Speaker, Boy Scout Day Camp, Mentor boys working on Engineering Badge, July 2009  
Guest Speaker, Cub Scout Pack 112, Mentor boys working on Engineer Activity Pin, September 2008  
Participant, Traffic Records Coordinating Committee, State of Florida, 2006-present

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\* Service activities occurred before last promotion at FSU.

- Panel member, State of Florida Traffic Records Assessment evaluation meeting, Federal Highway Administration, Tallahassee, FL, June 2006
- Reviewer, Traffic Records Assessment Report, Florida Department of Transportation, 2006
- Presenter, “Bridges Past, Present, and Future,” Bridge Building Class, Academic and Creative Enrichment Week, Holy Comforter Episcopal School, March 2004
- Judge, Capital Regional Science and Engineering Fair, February 1997, 1999, 2001, 2007, and 2008
- Judge, High School Roller Coaster Design Competition, FAMU-FSU College of Engineering, April 2002
- Presenter, “Civil and Structural Projects for Middle School Students,” Workshop on Integrating Science and Engineering into the Middle School Curriculum, Conducted by C. Safford and S. Borland, Challenger Center, FAMU-FSU College of Engineering, February 2001
- \*Volunteer, Odyssey Science Center, Tallahassee, Florida, 1995-2000
- \*Volunteer, MathCounts competition, February 1997
- \*Mentor, YouthALIVE! Program, Odyssey Science Center, Spring 1997. Mentored high school students designing science and engineering exhibits.
- \*Mentor, Odyssey Science Center, Fall 1996. Built simple machines with ASCE Student Chapter for display at Sensational Science event.\*
- \*Mentor, Research Careers for Minority Scholars program, Fall 1994-Spring 1996
- \*Mentor, Ronald McNair Post Baccalaureate Achievement program, Summer 1996
- \*Volunteer, City Planning Competition, Odyssey Science Center, Tallahassee, FL, Spring 1996

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\* Service activities occurred before last promotion at FSU.