

CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING

OREGON STATE UNIVERSITY

College of Engineering

DIXON, Karen K.
Associate Professor

DEGREES

B.S, Civil Engineering, Texas A&M University, College Station, TX, August 1983
M.C.E., Civil Engineering, North Carolina State University, Raleigh, NC, May 1993
Ph.D., Civil Engineering, North Carolina State University, Raleigh, NC, August 1995

ACADEMIC POSITIONS

Associate Professor, Department of Civil, Construction, and Environmental Engineering,
Oregon State University, 2005-present
Associate Professor, School of Civil and Environmental Engineering, Georgia Institute of
Technology, 2001-2004 (Adjunct professor 2005 – present)
Assistant Professor, School of Civil and Environmental Engineering, Georgia Institute of
Technology, 1995-2001
Research Assistant & Instructor, North Carolina State University, Raleigh, NC, 1993-1995.

NON-ACADEMIC POSITIONS

Project Engineer / Project Manager, HNTB Corporation, Raleigh, NC, 1990-1993. Responsible
for a variety of major transportation projects including highway and interchange design, site
development, and airport design.
Project Engineer, Daniel Mann Johnson & Mendenhall, Phoenix, AZ, 1988-1990, and Fort
Worth, TX, 1987-1988. Engineer in responsible charge of interchange design projects as
well and several land development projects.
Design Engineer, Teague Nall & Perkins, Fort Worth, TX, 1985-1987. Designed residential and
commercial site development projects. Tasks included development of construction
documents (plans and specifications) as well as construction project oversight for
transportation, site development, utility, and drainage projects.
Design Engineer, H-H Consulting Engineers, Arlington, TX, 1983-1985. Designed residential
and commercial site development projects. Tasks included development of construction
documents (plans and specifications).

FIELDS OF SPECIALIZATION

Transportation Engineering: Design, Operations, and Safety
Site Development

PROFESSIONAL ACTIVITIES

Registration

Professional Engineer, Georgia (No. 22,400)
Professional Engineer, Arizona (No. 22,879)
Professional Engineer, Texas (No. 16,904)

Professional Societies

Transportation Research Board (TRB), 1996-present

Member, Geometric Design Committee, 2000-present. [Friend of committee from 1997 to 2000]

Chair, Geometric Design Sub-committee on Safety, Efficiency, & Geometry, 2000-2004

Member, Task Force for the Development of a Highway Safety Manual, 2000-present.

Chair, Research Sub-committee for the Highway Safety Manual Task Force, 2001 – present

Oregon State University Official TRB Representative, 2005-present

American Society of Civil Engineers, Member, 1990-present

Former Chair and Member, ASCE Transportation Institute Research Technical Committee -- 1998-2003

National Research Council

Member, Oversight Panel *NCHRP Project 3-72* -- Lane Widths, Channelized Right Turns, and Right-Turn Deceleration Lanes in Urban and Suburban Areas -- 2002-present

Member, Oversight Panel *NCHRP Project 15-26* – Passing Sight Distance Criteria – 2003-present

Institute of Transportation Engineers, Member, 1995-present

Technical Journal Referee

Journal of Transportation Engineering, ASCE, since 1997.

Journal of Transportation Research Board (formerly *Transportation Research Record*),
TRB, since 1997.

Professional Recognition

Selected as Panel member and Chair, FHWA Turner Fairbanks Lab Assessment Panel,
Geometric Design Lab and Highway Safety Information System Lab

Selected as Judge for the FHWA 2006 Biennial Awards for Excellence in Highway
Design

Recipient of the 2003 *W. Roane Beard Outstanding Teacher Award*, Georgia Institute of
Technology teaching award for the entire Institute, 2003

Selected as Participant and Symposium Speaker for the *National Academy of
Engineering Frontiers of Engineering Program* (in conjunction with the Alexander
von Humboldt Foundation), 2002

Recipient of the *CETL/Amoco Junior Faculty Teaching Excellence Award*, Georgia
Institute of Technology teaching award – two awarded for entire Institute, 1998

Recipient of the Georgia Tech School of Civil and Environmental Engineering *1998 Bill
Schutz Undergraduate Teaching Award*, 1998

Selected for *Who's Who Among America's Teachers*, 1998

Recipient of the American Society of Civil Engineers Georgia Tech Student Chapter
1997 Outstanding Faculty of the Year Award, 1997

Recipient of the Georgia Institute of Technology School of Civil and Environmental
Engineering *1997 Teaching Excellence and Innovation Award*, 1997

CETL Class of '69 *Teaching Fellowship*, 1996

Recipient of the *Eisenhower Faculty Fellowship*, National Highway Institute, 1996

Phi Kappa Phi Honor Fraternity, Member, 1993-present

Chi Epsilon Civil Engineering Honor Fraternity, 1982

PUBLICATIONS

Books or Book Chapters

“Arterial Road Design Chapter.” *ITE Urban Highway Design Manual*, 1st Edition,
publication pending (scheduled for publication in November 2007) Washington, DC.
Highway Engineering, 7th Edition of textbook by Wright and Dixon, Wiley Publishing,
NY, 2004. Library of Congress Control Number 2003059561, ISBN 0-471-26461-X.
Textbook available in US Edition and as an International Edition. Currently Wiley
Publishing has negotiated a contract with Editorial Limusa, SA, Mexico to translate
the textbook into Spanish for a projected release date of the Spanish version of June
30, 2008.

“Chapter Three, Administrative Structure and Finance.” *Transportation Engineering
Planning and Design*, Fourth Edition (textbook primary authors are Paul H. Wright
and Norman J. Ashford), Wiley, pp. 49-66, 1998.

Technical Journals

Published or Pending Publication:

- Jun Wang, Karen Dixon, Hainan Li, Michael Hunter. "Operating Speed Model for Low-Speed Urban Tangent Streets Based on In-Vehicle Global Positioning System Data." TRB, National Research Council, Washington, D.C., *Journal of Transportation Research Board, Transportation Research Record*, No. 1961, pp. 24-33, 2006.
- Jun Wang, Karen Dixon, Hainan Li, Jennifer Ogle. "Normal Deceleration Behavior of Passenger Vehicles at Stop-Sign-Controlled Intersections Based on In-Vehicle GPS Data." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record*, No. 1937, pp. 120-127, 2005.
- Jun Wang, Karen Dixon, Hainan Li, Jennifer Ogle. "Normal Acceleration Behavior of Passenger Vehicles Starting from Rest at All-Way Stop-Controlled Intersections." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record*, No. 1883, pp. 158-166, 2004.
- Randall Guensler, Karen Dixon, Vetri Elango, Seunqiu Yoon. "MOBILE-Matrix: Application of Georgia Statewide Multimodal Transportation Planning Tool for Rural Areas." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record* No. 1880, pp. 83-89, 2004.
- Chunyan Wang, Karen Dixon, David Jared. "Evaluating Speed-Reduction Strategies for Highway Work Zones." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board*, No. 1824, p. 44-53, 2003.
- Karen Dixon, Wayne Sarasua, Janice Daniel, and George Mazur. "Tool for Rural and Statewide Multimodal Transportation Planning." *Journal of Computing in Civil Engineering*, American Society of Civil Engineers, Vol. 15, No. 4, pp. 275-283, 2001.
- George Mazur, Karen Dixon, and Wayne Sarasua. "Multicriteria Feasibility Evaluation for Rural Transit in Georgia." *Journal of Public Transportation*, Vol. 7, No. 3, pp. 41-60, 2001.
- Dan Melcher, Karen Dixon, Simon Washington, Chi-Hung Wu. "Feasibility of "Subjective" Engineering Assessments of Road Safety Improvements: Bayesian Analysis Development." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record* No. 1758, pp. 36-43, 2001.
- Janice Daniel, Karen Dixon, and David Jared. "Analysis of Fatal Crashes in Georgia Work Zones." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record* No. 1715, pp. 18-23, 2000.
- Govindarajan Vadakpat, Shelley Stoffels, and Karen Dixon. "Road User Cost Models for Use in Network-Level Pavement Management." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record*, No. 1699, pp. 49-57, 2000.

- Karen Dixon, Chi-Hung Wu, Wayne Sarasua, and Janice Daniel. "Posted and Free-Flow Speeds for Rural Multilane Highways in Georgia," *Journal of Transportation Engineering*, Vol. 125, No. 6, pp. 487-494. American Society of Civil Engineers, 1999.
- Karen Dixon, Chi-Hung Wu, Wayne Sarasua, and Janice Daniel. "Estimating Free-Flow Speeds for Rural Multilane Highways." TRB, National Research Council, Washington, D.C., *Journal of the Transportation Research Board, Transportation Research Record*, No. 1678, pp. 73-82, 1999.
- Govindarajan Vadakpat, Karen Dixon. "Calibration and Validation of CORSIM for Work Zones." *ITE Journal*, Vol. 68, No. 2, pp. 12, 14, Institute of Transportation Engineers, Washington DC, 1999.
- Mark Tarrall, Karen Dixon. "Conflict Analysis for Double Left-Turn Lanes with Protected-plus-Permitted Signal Phases." TRB, National Research Council, Washington, D.C., *Transportation Research Record*, No. 1635, pp. 105-112, 1998.
- Robert Awuah-Baffour, Wayne Sarasua, Karen Dixon, William Bachman, and Randall Guensler. "Global Positioning System with an Attitude: Method for Collecting Roadway Grade and Superelevation Data." TRB, National Research Council, Washington, D.C., *Transportation Research Record*, No. 1592, pp. 144-150, 1997.
- Karen Dixon, Joseph Hummer, and Ann Lorscheider. "Capacity for North Carolina Freeway Work Zones." TRB, National Research Council, Washington, D.C., *Transportation Research Record*, No. 1529, pp. 27-34, 1996.
- Ann Lorscheider, and Karen Dixon. "How North Carolina Slows Work-Zone Traffic," *Better Roads*, Vol. 66, No. 9, pp. 19-22, 1996.

Submitted for Review:

- Karen Dixon. "The Influence of Roadway Geometric Transitions on Road Surface Drainage," *Journal of Transportation Engineering*, American Society of Civil Engineers.

Conference Proceedings

- Adjo Amekudzi, Karen Dixon, Amy Goodwin, and David Jared. "Overview of the Georgia Guidebook for Pedestrian Planning." Transportation Research Board Annual Meeting. *CD-ROM Proceedings for the 2007 Annual Transportation Research Board Meeting*, Washington, D.C., 2007.
- Randall Guensler, Karen Dixon, V. Elango, and S. Yoon. "MOBILE-Matrix: Georgias Statewide Rural Application; Little Data - Big Needs: Tools for Air Quality Planning in Small, Medium, and Rural Communities." Transportation Research Board Annual Meeting Specialty Conference; National Academy of Sciences; Washington, DC., 2004.
- John Hausman, and Karen Dixon. "Prioritizing Improvement Locations for Hazardous Utility Poles using Crash Probability Analysis." *CD-ROM Proceedings for the 2003 Annual Transportation Research Board Meeting*, Washington, D.C., 2003.
- Karen Dixon, and Jun Wang. "Evaluating Operating Speeds for Low-Speed Urban

- Streets." Proceedings of the 2nd Urban Street Symposium, July 28-30, Anaheim, CA, 2003.
- Elizabeth Young, and Karen Dixon, "The Effects of School Zones on Driving Behavior." Proceedings of the 2nd Urban Street Symposium, July 28-30, Anaheim, CA, 2003.
- Karen Dixon, Wayne Sarasua, and George Mazur. "A GIS Based Tool for Rural Multimodal Transportation Planning." *CD-ROM Proceedings for the 2001 Annual Transportation Research Board Meeting*, Washington, D.C., 2001.
- George Mazur, Karen Dixon, and Wayne Sarasua. "Statewide Planning Tool to Support Multimodal Decision-Making." 8th TRB Conference for the Application of Transportation Planning Methods, Corpus Christi, Texas, April 2001.
- Adjo Amekudzi, and Karen Dixon. "Development of an Environmental Justice Analysis Methodology for Georgia Department of Transportation's Multimodal Transportation Planning Tool." 8th TRB Conference for the Application of Transportation Planning Methods, Corpus Christi, Texas, April 2001.
- Randall Guensler, Karen Dixon, M. Thornton, S. Hallmark, and W. Bachman. "Applications of Modal Emission Rate Models in Transportation Infrastructure Decision Making"; Second International Conference on Decision Making in Urban and Civil Engineering. Lyon, France. 2000.
- Randall Guensler, William Bachman, John Leonard, Karen Dixon, Matthew Thornton, and Shauna Hallmark. "Assessing Emissions Benefits of Traditional ITS Traffic Flow Improvement Projects Using Modal Emissions Models." 3rd IEEE International Conference on Intelligent Transportation Systems, Dearborn, MI. October 2000.
- Craig Roberts, and Karen Dixon. "Model for Emphasizing Design in Highway Engineering by Incorporating An Experiential Laboratory." American Society for Engineering Education, Pacific Southwest Section Annual Meeting, April 2000, Phoenix, AZ, 2000.
- Wayne Sarasua, Philip Manoj, Karen Dixon, Janice Daniel, and George Mazur. "Multi-Modal Planning Tool for the Georgia DOT." *Proceedings GIS-T '99, Geographic Information Systems for Transportation Symposium*, San Diego, CA, March 1999.
- Karen Dixon, John Hibbard, and Chris Mroczka.. "Public Perception of Median Treatment for Developed Urban Roads." *Proceedings of the Urban Street Symposium*, Transportation Research Circular E-C019, June 28-30, Dallas, TX, 1999.
- Karen Dixon, John Hibbard, and Heather Nyman. "Right-Turn Treatment for Signalized Intersections." *Proceedings of the Urban Street Symposium*, Transportation Research Circular E-C019, June 28-30, Dallas, TX, 1999.
- Karen Dixon, Joe Hummer, and Nagui Roupail. "Comparison of Rural Freeway Work Zone Queue Length Estimation Techniques: A Case Study." *CD-ROM Proceedings for the 1998 Annual Transportation Research Board Meeting*, Washington, D.C., 1998.
- Wayne Sarasua, Karen Dixon, Randall Guensler, and Simon Washington. "Analysis and Visualization of Real-Time Spatial and Temporal Vehicle Emissions Using a Dynamic GIS." *Proceedings GIS-T '98, Geographic Information Systems for Transportation Symposium*, 1998.
- Karen Dixon. "Evaluating Roadway Sight Distance -- A Virtual Solution." *Proceedings*

of the International Conference for Traffic Safety on Two Continents, Lisbon, Portugal, September 22-24, pp. 39-45, 1997.

Robert Awuah-Baffour, Wayne Sarasua, Karen Dixon, and William Bachman. "GPS with an Attitude. A Method for Collecting Roadway Grade and Superelevation Data." *Proceedings GIS-T '96, Geographic Information Systems for Transportation Symposium*, April 1996, Kansas City, Missouri, pp. 92-103, 1997.

Chris Grant, Randall Guensler, Karen Dixon, and Jeff Metarko. "Use of Video Detection Systems for Collection of Vehicle Activity Data in Emissions Modeling"; Civil and Environmental Engineering Proceedings of the 8th Annual On-Road Vehicle Emissions Workshop, San Diego, CA; Coordinating Research Council; Atlanta, GA, 1997.

Chris Grant, Randall Guensler, Karen Dixon and Jeff Metarko. "Use of Video Systems for Collection of Vehicle Activity Data in Emissions Modeling;" 7th Annual On-Road Vehicle Emissions Workshop, San Diego, CA; Coordinating Research Council; Atlanta, GA, 1997.

Ann Lorscheider, and Karen Dixon. "The Effectiveness of Switching Lane Alignments in WorkZones." *Proceedings of the 1995 Annual Institute of Transportation Engineers Meeting*, Denver, CO, August 5-8, pp. 123-126, 1995.

Karen Dixon, Ann Lorscheider, and Joseph Hummer. "Computer Simulation of I-95 Lane Closures Using FRESIM." *Proceedings of the 1995 Annual Institute of Transportation Engineers Meeting*, Denver, CO, August 5-8, pp. 49-52, 1995.

Reports and Others

Adjo Amekudzi, and Karen Dixon. "Georgia Guidebook for Pedestrian Planning." Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, April 2006.

Karen Dixon. "Final Summary Report. Southeastern United States Fatal Crash Study." Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Federal Highway Administration and the Georgia Department of Transportation, 2005.

Karen Dixon. "Multimodal Transportation Planning Tool (MTPT) Technical Report." Version 3.0. Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, September 2004.

Karen Dixon. "Multimodal Transportation Planning Tool (MTPT) Design and Source Code Documentation." Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, September 2004.

Karen Dixon, and Jennifer Ogle. "Road Life History Database Feasibility Study: Final Report." Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, 2004.

Karen Dixon, Lisa Rosenstein, and Chunyan Wang. "Self-Study Text for the Georgia Department of Transportation: Basic Quality Assurance and Quality Control." Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, 2003.

- Karen Dixon, John Hausman, and Amy Lewis. "Analysis of Fatal Crashes at Utility Pole Locations in Georgia for 1999 and 2000." Georgia Institute of Technology, Georgia Transportation Institute, prepared for The Southern Company, 2002.
- Karen Dixon. Invited Book Review for "Transportation Engineering & Planning" by C. S. Papacostas and P. D. Prevedouros. *Journal of Transportation Engineering*, American Society of Civil Engineers, 2002.
- Simon Washington, Karen Dixon, David White, and Chi-Hung Wu. "Investigation of Fatal Motor Vehicle Crashes on Two-Lane Rural Highways in Georgia." Report No. FHWA-GA-02-9905. Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Federal Highway Administration and the Georgia Department of Transportation, 2002.
- Karen Dixon, and Chunyan Wang. "Development of Speed Reduction Strategies for Highway Work Zones." Report No. FHWA-GA-02-9810. Georgia Institute of Technology, Georgia Transportation Institute, prepared for the Georgia Department of Transportation, 2002.
- Karen Dixon. "Highway Countermeasure Analysis Handbook." Prepared as an incremental step in the development of a proposed microscopic safety analysis method for the Southeast Fatal Crash Study, 2001. Included in final project reports for Georgia, South Carolina, and North Carolina research teams.
- Randall Guensler, Matt Thornton, Michael Rodgers, Karen Dixon, Jim Pearson, William Bachman, John Leonard, and Janice Daniel. "Evaluation of Ramp Metering Impacts on Air Quality: The Atlanta I-75 Case Study." Report No. FHWA-GA-01-9814. Georgia Institute of Technology, Georgia Transportation Institute and Air Quality Laboratory, prepared for the Georgia Department of Transportation, 2001.
- Simon Washington, Karen Dixon, Jennifer Ogle, and Chi-Hung Wu. "A Bayesian Safety Assessment Framework (B-SAF) for Identifying Effective Countermeasures in Regional Safety Improvement Programs," Georgia Institute of Technology, 2000. Developed as a source document for the South East Fatal Crash Study for the Federal Highway Administration, presented at the 79th annual meeting of the Transportation Research Board (Jan. 2000).
- Karen Dixon, Chi-Hung Wu, Georgene Geary, Jun Wang, and Meridith Coley. "Analysis of Fatal Crashes at Utility Pole Locations in Georgia for 1997 and 1998." Georgia Institute of Technology, Georgia Transportation Institute, prepared for The Southern Company, 2000.
- Karen Dixon, and Joe Hummer. "Capacity and Delay in Major Freeway Construction Zones", Report FHWA/NC95/004 (PB96168877), North Carolina State University, Center for Transportation Engineering Studies, prepared for Federal Highway Administration and North Carolina Department of Transportation, 1996.

Invited Presentations

“Arterial Design Procedures,” to be presented at the national Institute of Transportation Engineers Conference, Pittsburgh, PA, August 2007

“Urban Speed Estimation Procedures,” to be presented at the 2007 Urban Street Symposium, Seattle, Washington, June 2007

“Innovative Design of Arterials,” presented at the 2005 International Institute of Transportation Engineers Conference, Melbourne, Australia, August 2006

“Managing Pavement Edge Drop-Offs,” presented at workshop sponsored by the Federal Highway Administration, Atlanta, GA, February 2004 (presentation subsequently widely distributed on informational CD)

“Roadside Design for Rural Roads,” presented at the Rural Roadside Roundtable organized by U.S. Senator Cahill (three state secretary of transportations were present), West Virginia, March 2004 [Dr. Dixon was the only invited technical speaker for this cross-discipline discussion group]

"The Georgia Utility Pole Crash Study -- a Four Year Evaluation," presented at the 2003 Transportation Research Board Annual Meeting, Washington, DC, January 2003

"Operating Speed Research Utilizing Event Data Recorders," At the request of the Highway Capacity Arterial Roadway Committee at the 2003 Transportation Research Board Annual Meeting, Washington, DC, January 2003

"Use of Event Data Recorders for Evaluating Traffic Operations," scheduled for presentation at the National Academy of Engineering Fifth German-American Frontiers of Engineering Symposium, May 2002

"The Georgia Utility Pole Crash Study and Application," presented at the 2001 American Public Works Conference, Philadelphia, PA, September 2001

"Utility Pole Crashes -- An Update on the Georgia Microscopic Study," presented at the 2001 National Utility Research Conference, Phoenix, Arizona, October 2001

"Georgia Utility Pole Crashes and the GUCC Pole Relocation Plan," presented at the Georgia Utility Company Conference, October 2000, Dillard, Georgia.

“Georgia Utility Pole Accident Research,” presented at the Eighth National Highway/Utility Educational Conference, Louisville, KY, April 2000.

Software

Historically, the transportation planning process has primarily focused on planning, programming, and decision-making issues based on highly visible needs common to urban environments; however, little work has focused on a method that comprehensively evaluates rural transportation facilities. Professor Dixon led the effort to develop a decision support system for the Georgia Department of Transportation (GDOT) Office of Planning that would provide a wide-scale analysis for six modes of transportation (local transit, intercity bus, commuter rail, general aviation, bicycles and pedestrians, and highway). The Georgia Department of Community Affairs (DCA) also adopted the Multimodal Transportation Planning Tool (MTPT) as a required analysis tool for regional development studies. As a result, this extensive software tool (developed uniquely for Georgia with Georgia databases, GIS maps, etc.) is used widely throughout the state of Georgia by counties, regional development centers, consultants, GDOT, and DCA. The current version of the MTPT is Version 3.0.

Karen Dixon. (2004). Multimodal Transportation Planning Tool (MTPT), Version 3.0, prepared for the Georgia Department of Transportation, Planning Branch. Software distributed statewide and used by GDOT, County jurisdictions, and the Department of Consumer Affairs for traffic planning studies. This complex transportation analysis tool uses Visual Basic, MapObjects, and ActiveX components to perform numerous multimodal analysis tasks including aviation, commuter rail, transit, intercity bus & passenger rail, bicycle & pedestrian, and highway analysis.

Karen Dixon. (2000). Multimodal Transportation Planning Tool (MTPT), Version 2.0, prepared for the Georgia Department of Transportation, Planning Branch.

Karen Dixon and Wayne Sarasua. (1998). Multimodal Transportation Planning Tool (MTPT), Version 1.0, prepared for the Georgia Department of Transportation, Planning Branch. (Dr. Dixon was primary source code author).

RESEARCH

Pending Research

“Examination of Crash Trends in the Southeastern U.S.: Analysis of Fatal Crashes,” (PI), Georgia Department of Transportation, Expected July 2007 - August 2008 (\$145,474) – project approved and currently under negotiation.

“Development of an Oregon Highway Safety Investigation Manual,” (PI), Oregon Department of Transportation, July 2006 – March 2007 (\$48,000).

“Institutional Delay due to Incident Clearance,” (PI), Oregon Department of Transportation and OTREC, June 2007 – August 2008.

“Evaluating Safety Solutions for High-Speed Intersections,” (PI), Oregon Department of Transportation, July 2007 – February 2009 (\$98,000)

Current Research

- “Effective Roadway Design Treatments for Rural to Urban Areas on State Highways – Phase I,” (PI), Oregon Department of Transportation, October 2005-December 2006 (\$108,500).
- “Methodologies for Establishing Advisory Exit, Ramp, and Curve Speeds on Oregon Highways,” (PI), Oregon Department of Transportation, December 2005 to March 2007 (\$58,000).
- “Effects of Urban Street Environment on Operating Speeds,” (PI), Federal Highway Administration, October 2000-December 2007 (\$647,000).
- “Design Guidelines for Safe and Aesthetic Roadside Treatments in Urban Areas,” (PI), National Cooperative Highway Research Program (NCHRP 16-04), October 2003-October 2006 (\$350,000).

Prior Research

- “Literature Review in Preparation for Oregon Highway Safety Investigation Manual,” (PI), Oregon Department of Transportation, February 2006 – July 2006 (\$9,999).
- “Safety Analysis and Countermeasures for Arterial Roads,” (PI), Insurance Institute of Highway Safety, July 2003-September 2006 (\$60,632).
- “Developing a Georgia Statewide Pedestrian Plan,” (co-PI with Adjo Amekudzi), Georgia Department of Transportation, June 2003-June 2006 (\$199,840).
- “Evaluating Speed Reduction Strategies for Highway Work Zones (Smart Work Zones),” (PI), Georgia Department of Transportation, March 2003-December 2004 (\$177,519).
- “Environmental Justice Module Development and Bicycle Route Analysis Enhancements to the Multi-Modal Transportation Planning Tool, Phase III,” (co-PI with Adjo Amekudzi), Georgia Department of Transportation, August 2001 to March 2004 (\$114,567).
- “Road Life History Feasibility Study,” (PI), Georgia Department of Transportation, July 2003-March 2004 (\$36,000).
- “Coordination and Oversight: Investigation of Fatal Crashes in the Southeastern U.S.,” (co-PI with Simon Washington), Federal Highway Administration / Georgia Department of Transportation, April 1998-December 2003 (\$222,993).
- “Developing a Self-Study Text: Basic Quality Assurance and Quality Control,” (PI), Georgia Department of Transportation, June 2002-January 2003 (\$40,167).
- “Investigation and Identification of Fatal Crashes in Georgia,” (co-PI with Simon Washington), Georgia Department of Transportation, July 1999-March 2002 (\$215,000).
- “Development of Speed Reduction Strategies for Highway Work Zones (Using Low-End Technologies),” (PI), Georgia Department of Transportation, October 1998-May 2002 (\$205,434.50).
- “Analysis of 1999 and 2000 Fatal Crashes at Utility Pole Locations in Georgia,” (PI), Georgia Power (Southern Company Services), March 2001-May 2002 (\$22,980).

“Development of a Multi-Modal Transportation Planning Tool, Phase II (co-PI with Wayne Sarasua), Georgia Department of Transportation, September 1997-March 2000 (\$180,000).

“Evaluation of Ramp Metering Impacts on Air Quality,” (co-PI with Randall Guensler), Georgia Department of Transportation, September 1998-May 2000 (\$438,747).

“Analysis of 1998 Fatal Cashes at Utility Pole Locations in Georgia,” (PI), Georgia Power (Southern Company Services), October 1999-March 2000 (\$14,518).

“Analysis of 1997 Fatal Crashes at Utility Pole Locations in Georgia,” (PI), Georgia Power (Southern Company Services), March 1999-September 1999 (\$16,587).

“The Feasibility of Virtual Reality as a Roadway Infrastructure Design and Educational Tool.” (PI), National Science Foundation, September 1996-September 1997 (\$18,000).

TEACHING

Courses Taught at Oregon State University (Quarter System)

CE 392	Introduction to Highway Engineering
CE 419	Civil Infrastructure Design (co-teacher)
CE 491	Transportation Engineering
CE 505	Highway Safety (co-teacher)
CE 551	Computer-Aided Road & Site Design
CE 594	Transportation Facility Design
CE 595	Traffic Engineering
CE 598	Airport Design (co-teacher)

Courses Taught at Georgia Institute of Technology (Semester System)

CEE 4600	Transportation Engineering I (Highway Design)
CEE 4610	Transportation Engineering II (Multimodal Transportation Design)
CEE 4630	Computer-Aided Road & Site Design
CEE 6603	Traffic Engineering
CEE 6604	Design of Highways & Transit Facilities
CEE 6644	Airport Planning and Design

Courses Taught at Georgia Institute of Technology (Quarter System)

CE 4304	Transportation Engineering I (Highway Design)
CE 4313	Transportation Engineering II (Multimodal Transportation Design)
CE 4404	Senior Design
CE 4803	Computer-Aided Site & Road Design
CE 6343	Design of Highways & Transit Facilities

Continuing Education Courses Taught at Oregon State University

Safety Countermeasures Workshop, Sponsored by The Kiewit Center for Infrastructure & Transportation at OSU and the Oregon Traffic Safety Division, Oregon Department of

Transportation (May 2006, May 2005)

Geometric Design Traffic Safety Short Course, Sponsored by The Kiewit Center for Infrastructure & Transportation at OSU and the Oregon Traffic Safety Division, Oregon Department of Transportation (April 2006)

Continuing Education Courses Taught at Georgia Institute of Technology

CE Refresher Course for PE Exam Review -- Transportation (Spring 1996, 1997, 1998, 2002, 2003, 2004)

Traffic Signals Short Courses -- Synchro Instruction (Spring 2002, 2003, 2004)

Participation in Teaching Development Programs

Class of 1969 Teaching Fellow (Winter 1996) – Georgia Tech. Dr. Dixon was selected to participate in this teaching development program where she attended a series of workshops that focused on teaching strategies, invited program representatives to monitor and comment on her classroom performance, and applied a \$1000 program stipend to the enhancement of her Transportation laboratory materials.

Gender Diversity Workshop (Fall 1996) – Georgia Tech. Dr. Dixon attended the Georgia Institute of Technology Gender Diversity Workshop that was established in an effort to heighten awareness of gender-related education issues.

1997 National Effective Teaching Institute (Summer 1997). Dr. Dixon was one of two Georgia Institute of Technology faculty members selected by the Dean's office to attend NETI. The workshop provided tips on presentation skills, course organization, test preparation, and innovative techniques for use in the classroom.

WebCT Training Courses (Summer 1998) – Georgia Tech. Dr. Dixon attended the WebCT multimedia web teaching tool courses. Subsequent to this series of classes, Dr. Dixon began to use the educational web-based tool as a supplement to her classroom teaching.

STUDENT ADVISING AND GUIDANCE

Ph.D. Student Guidance

Graduated

Jun Wang

Graduation: Spring 2006

Dissertation Title: The Influence of Low-Speed Urban Road Environments on Operating Speeds

Current Position: ITS Engineer for Siemens ITS

Chunyan Wang

Graduation: Spring 2006

Dissertation Title: Predictive Crash Models for Two-Lane Rural Highways in the Southeast United States

Current Position: Statistical Financial Analyst for BankOne

Jennifer Ogle

Graduation: Spring 2005

Dissertation Title: Quantitative Assessment of Driver Speeding Behavior Using Instrumented Vehicles

Current Position: Assistant Professor at Clemson University

Angshuman Guin

Graduation: Spring 2004

Dissertation Title: An Incident Detection Algorithm Based On a Discrete State Propagation Model of Traffic Flow

Current Position: ITS Engineer for URS Engineering

Chi-Hung Wu

Graduation: Spring 2001

Dissertation Title: Causal Chain Analysis -- A Comparative Study Between Numeric Evaluation and Expert Microscopic Analysis

Current Position: Assistant Professor at National Taiwan Ocean University

In Process

Hong Zhu

Anticipated Graduation: Summer 2008

Dissertation Title: Cross-Section Crash Prediction Models

Nick Forte
Anticipated Graduation: To-be-determined
Dissertation Title: under development

M.S. Special Research Problems / Thesis

- Hong Zhu, Acceleration and Deceleration Models for Urban Signalized Conditions, Defended January 2007 (Oregon State University)
- Joshan Rohani, Advisory Speed and Associated Crashes for Rural Oregon Highways, schedule for defense in August 2007 (Oregon State University)
- Daenna Lewis, Young Driver Influences on the Crash Condition, Fall 2002
- Adam Novak, Census Data for Environmental Justice Evaluation, Fall 2001
- Brady McKimm, Work Zone Speed Strategies for Rural Georgia, Summer 2000
- Jun Wang, Development of an Intersection Sight Distance Virtual Reality Evaluation Tool, Summer 2000
- Bertrand Haus, Speed Reduction Strategies in Work Zones, Spring 2000
- Mohan Sriperambadur, Developing a Decision Based Crash Report Filtering Program, Spring 1999
- Georgene Geary, Causal-Chain Analysis for 1997 Utility Pole Crashes in Georgia, Spring 1999
- Philip Manoj, GIS for Multi-Modal Transportation Planning Crash Display, Winter 1999
- Chris Mroczka, Safety Impact of Two-Way Left Turn Lanes versus Raised Median, Fall 1998
- Ali Sayyed, Available 3-Dimension Models for Road Design Decisions, Spring 1998
- Evelyn Wu, Downstream Geometric Influences on Double Left-Turns, Winter 1998
- Mark Tarrall, Protected-plus-Permitted Signal Phase at Double Left-Turns, Summer 1997
- Keith Sinclair, HOV Occupancy Studies using AutoScope Digital Imagery Analysis, Spring 1997
- Yasmin Moreno, Compliance Analysis for Ring-Road T-Intersection Traffic Control Devices, Winter 1997
- Jack Burnside, Airport Layout Plan for the Fulton County Airport, Fall 1997
- Jan Domiter, Historical Analysis on the Evolution of Superelevation for Roadway Design, Fall 1996
- Margie Pozin, Using GEOPAK Digital Terrain Models for Road Design, Fall 1996

Undergraduate Research Students

- Tegan Houghton, Road Safety Audit versus the Interactive Highway Safety Design Module – Honors Thesis, Oregon State University, 2006-2007.
- Joshan Rohani, Advisory Speed Posting Techniques, Oregon State University, 2005-2006

- Tegan Houghton, Literature Review for Safety Investigation Procedures, Oregon State University, 2005-2006.
- Thomas Wall, Alternative Instruction Pedagogy for Transportation Instruction – Honors Thesis, Oregon State University, 2005-2006.
- Thecla Koffa, Speed Hump Operations Analysis, Dwight Eisenhower Undergraduate Fellowship, FHWA, Spring 2002 through Spring 2004.
- Kaleah Lambert, Mid-Block Pedestrian Safety Enhancements, FACES Undergraduate Fellowship, Georgia Tech, Fall 2003 through Spring 2004.
- Nebiat Abraham, Validation of Routines Used in the Multimodal Transportation Planning Tool, Fall 2003
- Elizabeth Young, Driver Speed Behavior in Designated School Zones, Spring 2003
- Bobby Donley, Creating Visual Tools for Introductory Highway Design Courses, Spring 2003
- Amy Lewis, Utility Pole Crash Reconstruction for 1999 and 2000
- Sathaphone Chanthadara, Creating Visual Tools for Introductory Highway Design Courses
- Ronald Miller, Computerized Lab Development for Transportation Design, Spring 2001
- Matthew Goette, Studying the Influence of Driver Perception of Low-Speed Urban Streets on User Selected Operating Speed, Spring 2001
- Adam Novak, Evaluating Speed Reduction Strategies for Rural Highway Work Zones, Fall 2000
- Richard Cornwell, Integration of Erosion Control Design Into the Highway Design Process, Fall 2000
- John Klein, Environmental Justice Issues for Transportation Planning, Fall 2000
- Blake Hewitt, Field Evaluation of Speed Reduction Strategies for Rural Highway Work Zones, Fall 2000
- Omid Falahinezhad, Literature Review of Highway Work Zone Speed Influences, Summer 2000
- Patrick Tse, Field Evaluation of Speed Reduction Strategies for Rural Highway Work Zones, Summer 2000
- Meredith Coley, Causal-Chain Analysis for 1997 Utility Pole Crashes in Georgia, Spring 1999
- Adam Price, At-Grade Rail Intersection Crashes with High Speed Trains, Spring 1999
- Heather Nyman, At-Grade Rail Intersection Crashes with High Speed Trains, Winter 1999
- Chris Hill, Freeway Weaving Analysis using AutoScope, Fall 1998
- Heather Nyman, Innovative Right-Turn Signalized Intersection Treatments, Fall 1998
- Bret Gillis, AutoScope Validation of Traffic Volumes for Variable Viewing Conditions, Fall 1997
- Michael Fletcher, Traffic Progression on Cobb Parkway Using PASSER Analysis, Summer 1997
- Chris Haney, AutoScope Validation for Speeds and Flows, Summer 1997
- Darren Pence, AutoScope Validation for Speeds and Flows, Summer 1997
- Anthony Rentz, Computer-Aided Site Design Utilizing SoftDesk, Summer 1997

- Michael Toney, In-Vehicle Devices for Cargo Shipping, Summer 1997
- Anthony Cochran, FAA Runway Design Software Application and Analysis, Spring 1997
- Chris Conklin, Field Data Analysis of Downstream Influences to Double Left-Turn Lanes, Spring 1997
- Claudette Coimin, Progression Analysis Using PASSER II, Spring 1997
- Brian Ellington, Computer-Aided Site Design Utilizing SoftDesk, Spring 1997
- Gary Gentry, Computer-Aided Site Design Utilizing SoftDesk, Spring 1997
- Shaun Green, Field Data Analysis of Protected-plus-Permitted Signal Phases for Double Left-Turns, Spring 1997
- Ben Harrison, AutoScope Validation for Skewed Camera Placement, Spring 1997
- Paul Shivers, GEOPAK as a Tool for Roadway Design, Spring 1997
- Frank Fry, Applying Design Regulations to a Site Development Project, Winter 1997
- Robert Garner, Web Page Development for Transportation Engineering II -- Research of Available Resource Sites, Winter 1997
- Bryon Letourneau, AutoScope Validation for Speeds and Flows, Winter 1997
- Leon Nash, AutoScope Validation for Speeds and Flows, Winter 1997
- Eric Rivers, Traffic Conflict Study at an Irregular T-Intersection, Winter 1997
- Leah Guillebeau, AutoScope Calibration for Speed Traps, Fall 1996
- Imran Khan, Using EaglePoint for Roadway Design, Winter 1996
- Robert King, Computer-Aided Roadway Design Utilizing SoftDesk, Fall 1995
- Allison Williams, Computer-Aided Roadway Design Utilizing SoftDesk, Fall 1995

SERVICE

Oregon State University Service

CCEE Outreach Committee – Chair, 2005-2006

CCEE Graduate School Committee, 2005-2007

Served on the Transportation Faculty Search Committee, 2005

Served on CCEE Department Head Search Committee, 2005-2006

Georgia Tech Service

Served on the CEE Awards Committee, 2001-2004

Served on the Ad Hoc Faculty Search Committee, 2002

Participating in Blue Skies Dean's Committee, 2002

Served on the numerous Faculty Search Committees, 1998-2003

Served on the City Planning Transport Faculty Search Committee, 2002-2003

Served on the CEE Graduate School Committee, 2003-2004

INDUSTRY CONTRIBUTIONS

Prior to her return to academia, Dr. Dixon worked in the industry for approximately 10

years. During this time, her job responsibilities grew from project designer to project engineer and ultimately to project manager. With each increased role, she acquired additional responsibilities. The projects she worked on ranged from residential and commercial site development up to freeway interchanges and airports. The following is an abbreviated list of some of the high-profile projects for which Dr. Dixon served in a responsible role:

- Interchange of Interstate 820, State Highway 121, and State Highway 183 in Fort Worth, Texas – Dr. Dixon served in the role of Project Engineer
- Broadway Curve Interchange for Interstate 10 and State Highway 143 in Phoenix, Arizona – Dr. Dixon served in the role of Project Engineer
- Raleigh-Durham Airport Entry Interchange in Raleigh, North Carolina. This interchange included eight bridges and numerous intersecting roadways – Dr. Dixon served in the role of Project Engineer / Manager
- Interchange of Interstate 95, Interstate 595, State Highway 84, and State Highway 736 in Broward County, Florida – Dr. Dixon served in the role of Management Consultant on behalf of the Florida Department of Transportation
- Salt Lake City International Airport, Third Runway – Dr. Dixon developed the digital terrain model for the airfield and proposed third runway (now constructed), her role was project consultant to the design team
- Texas Rangers Stadium parking and drainage design, Arlington, Texas – Dr. Dixon served as the Project Engineer for this project
- Sky Harbor Maintenance Facility site design, Sky Harbor Airport, Phoenix, Arizona – Dr. Dixon served in the role of Project Engineer / Manager
- Retrofit of Capitol Blvd. in Raleigh, North Carolina – gateway to the downtown commute – Dr. Dixon's role was Project Manager.

In addition to these extensive projects, Dr. Dixon designed numerous residential and commercial developments and was in responsible charge for pavement design, water and sewer design, drainage, site grading, hydrological studies, road design, plat development, and fire access and system design. She also designed numerous roadway and highway projects including simple cloverleaf and diamond interchanges, bridge modifications (she was responsible for the geometrics and checking the structural calculations), railroad bridge re-alignments, and rural highway widening. This work was primarily performed in the states of Texas, Arizona, and North Carolina.

OTHER NOTEWORTHY CONTRIBUTIONS

In 1999, Dr. Dixon coordinated a software donation to the Georgia Institute of Technology of Civil & Environmental Engineering by CAiCE Software Corporation equating to a total equivalent gift value of \$86,250.

In 2002, Dr. Dixon again coordinated a more substantial software donation to the Georgia Institute of Technology of Civil & Environmental Engineering by CAiCE

Software Corporation equating to a total equivalent give value of \$434,000.

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