

**THE UNIVERSITY OF TEXAS**  
**College of Engineering**  
**Standard Resume**

**FULL NAME:** Randy Brian Machemehl **TITLE:** Professor

**DEPARTMENT:** Civil, Architectural, and Environmental Engineering

**EDUCATION:**

University of Texas at Austin	Civil Engineering	BSCE	1970
University of Texas at Austin	Civil Engineering	MSCE	1973
University of Texas at Austin		Ph.D	1975

**PROFESSIONAL REGISTRATION:**

Registered Public Surveyor in the State of Texas, Registration Number 3801.  
Registered Professional Engineer in the State of Texas, Registration Number 41921.

**CURRENT AND PREVIOUS ACADEMIC POSITIONS:**

UT Austin	Assistant Professor	1977-1983
UT Austin	Associate Professor	1983-1991
UT Austin	Professor	1991-present
The Center for Transportation Research for the Southwest Region University Transportation Center	Associate Director	1990-present
Southwest Region Transportation Center	Associate Director	1990-present
UT Austin, Department of Civil Engineering Transportation Area	Area Coordinator	1995-1996
UT Austin, Department of Civil Engineering	Associate Chairman	1996-1999
UT Austin, Center for Transportation Research	Director	1999-2012
UT Austin, Department of Civil Engineering Transportation Area	Area Coordinator	2014-present

**OTHER PROFESSIONAL EXPERIENCE:**

Texas Highway Department	Engineering Aide	1966
Wilbur Smith and Associates	Associate Civil Engineer	1975-1977

## CONSULTING:

Robert Mueller Airport	1984, 1990
US Army Reserve	1967-1996
Texas Research and Development Foundation	1992
Strategic Highway Research Program	1983
Texas Dept. of Highways and Public Transportation	1975-present
City of Austin	1980-present

## HONORS AND AWARDS:

Distinguished Military Graduate, Army ROTC Program, 1969.  
Selected, Outstanding Transportation Engineering Student, by Texas Section Institute of Transportation Engineers, 1973.  
Received Institute of Transportation Engineer Fellowship, 1973.  
Honor Graduate, Engineer Officer Basic Course, Ft. Belvoir, VA, 1973.  
Invited to serve on the US Army ROTC Scholarship Review Board, 1979-1980.  
Listed in "Outstanding Young Men of America," 1979.  
Obtained registration as a Public Surveyor in the State of Texas, 1981.  
Received US Army Commendation Medal for Meritorious Service as Adjutant for 871st Engineer Battalion, US Army Reserve, 1981.  
Received the Ervin S. Perry Student Appreciation Award for 1981-82 from the UT Student Chapter of the American Society of Civil Engineers at the College of Engineering Awards Convocation, April 1982.  
Received the US Army Commendation Medal for meritorious service as Commander Co. A 871st Engineer Battalion, US Army Reserve, for the period of 1 December 1980 through 1 December 1983.  
Chosen by Texas Section of the Institute of Transportation Engineers to be Chairman of a Task Force developing the section's entry into the National ITE technical project competition. The work being undertaken is based on personal research into traffic operations, 1983-1984.  
Received US Army Commendation Medal for work with the 871st Engineer Battalion, US Army Reserves, September 1984.  
International Technical Paper Award, Institute of Transportation Engineers, 1985-86.  
Certificate of Special Achievement, Texas Section Institute of Transportation Engineers, June 1986.  
United States Army Meritorious Service Medal, November 1986.  
Served as Vice-President and Secretary/Treasurer of Texas Section of the Institute of Transportation Engineers, 1986-1987.  
Received Roberta Woods Ray Centennial Fellowship in Engineering for 1986-1994.  
Received US Army Commendation Medal for Meritorious Service as Adjutant for 871st Engineer Battalion, US Army Reserve, 1987.  
Served as President of Texas Section of the Institute of Transportation Engineers, 1988-1989.  
Faculty Advisor for ASCE Student Chapter, which went on to receive a National Letter of Honorable Mention commendation for range and type of activities for CY 1989.  
Graduated from The United States Army Command and General Staff College, Fort Leavenworth, KS, 1990.  
Received US Army Commendation from Commandant, 4162d USARF School for performance during AT90 at Fort Hood, TX, 1990.  
Promoted to Lieutenant Colonel in US Army Reserve, 1991.  
Received Civil Engineering Departmental Teaching Excellence Award, UT Austin, 1991.  
Received US Army Achievement Medal, 1993.  
Received Engineering Foundation Faculty Award, College of Engineering, UT Austin, 1994.  
Received the Clyde E. Lee Endowed Professorship in Transportation Engineering, UT Austin, 1996.

Received Award for Meritorious Service in Accomplishments as Assistant Commandant, US Army Reserve, 1996.

Received the Engineering Foundation Faculty Award, College of Engineering, UT Austin, 1999.

Received the Nasser I. Al-Rashid Centennial Professorship in Transportation Engineering, 1999.

Asked to serve as Faculty Marshal during the May 2004 College of Engineering Commencement.

Elected to the Board of Directors of the Council of University Transportation Centers (CUTC). The membership includes the Directors of the approximately 40 University Transportation Centers in the United States, June 2004.

Awarded the 2006 S. S. Steinberg Award for outstanding contributions to transportation teaching and research, American Road & Transportation Builders Association, Research and Education Division, January 2006.

Elected Secretary of the Council of University Transportation Centers (CUTC), June 2006.

Elected Vice President of the Council of University Transportation Centers (CUTC), June 2007.

Inducted into the Civil, Architectural and Environmental Engineering Academy of Distinguished Alumni, November 2007.

Awarded the 2008 Wilbur S. Smith Award, Transportation and Development Institute, American Society of Civil Engineers, March 2008.

Elected President of the Council of University Transportation Centers (CUTC) for FY 2009

Invited by Jim Oberstar, Chair of the U.S. House Transportation and Infrastructure Committee, to participate in a meeting to discuss federal transportation funding for U.S. University Transportation Centers, May 2009

WTS International's Innovative Project Solutions Award, Woman's Transportation Seminar, Austin, TX, January 2010

Invited to serve as Associate Editor for the Institute of Transportation Engineers, Learned Journal of Transportation, December 2010

Invited to serve on the Transportation Policy Session Panel of the 2010 Pre-Session Legislative Conference, Texas House of Representatives, by Speaker of the House, Joe Straus, December 2010

Life Member of the American Society of Civil Engineers, September 2012

Distinguished Contribution to University Transportation and Research Award, from the Council of University Transportation Centers (CUTC), January 2013

Life Member of the Institute of Transportation Engineers (ITE), April 2013

Received nomination for the prestigious Joe J. King Award, January 2015

**MEMBERSHIPS IN PROFESSIONAL SOCIETIES:**

- American Society of Civil Engineers (ASCE)
- American Road and Transportation Builder's Association (ARTBA)
- Canadian Society for Civil Engineering (CSCE)
- Council of University Transportation Centers (CUTC)
- Institute of Transportation Engineers (ITE)
- Korean-American Scientists and Engineers Association (KSEA)
- National Society of Professional Engineers (NSPE)
- Transportation Research Board (TRB)
- Transportation Research Forum (TRF)
- The Society for Computer Simulation International
- Capital Metro Citizen's Advisory Committee

**UNIVERSITY COMMITTEE ASSIGNMENTS:**

**Department Committees**

Member	Information and Student Enrollment Committee	1977-1978
Member	Computer Facilities Committee	1977-1978

Member	Long Range Planning Committee	1977-1979
Member	Ad Hoc Committee of Professional Degree Programs	1978-1979
Member	Ad Hoc Committee to Evaluate Technical Staff Position and Requirements	1978-1979
Member	Graduate Fellowships and Financial Aid Committee	1978-1979
Member	Ad Hoc Committee on Teaching Assistant and Grader Review	1978-1979
Member	Special Subcommittee of Dept. Graduate Studies Committee, Transportation Representative	1980-1982
Member	Memorial Resolution Committee for Professor Leland Barclay	1981-1983
Member	Space Utilization Committee	1981-1983
Member	Teaching Assistant and Grader Performance Review Committee	1983-1984
Member	Scholarship and Fellowship Committee	1983-1984
Member	Ad Hoc Committee on EM 306 and EM 319	1983-1984
Member	Ad Hoc Committee on Minority Graduate Students	1984-1985
Member	Courses and Curriculum Committee	1984-1986
Member	Undergraduate Scholarships, Financial Aid, and Recruiting Committee,	1985-1995
Member	Ad Hoc Committee on Microcomputers	1985-1987
Member	Basement Space Committee	1985-1986
Member	Graduate Fellowship and Financial Aid Committee	1985-1987
Member	CAE/CAD/IG Program	1986-1988
Member	Fellowship Committee	1987-1988
Member	Scholarship Committee	1987-1988
Member	Retention Committee	1987-1990
Member	Computer Resources Committee	1992-1993
Member	Implementation Curriculum Committee	1993-1994
Member	Faculty Evaluation Committee	1993-1994
Chairman	Faculty Evaluation Committee	1994-1995
Chairman	Department Teaching Award Committee	1994-1995
Member	Department of Civil Engineering Advisory Committee	1995-1999
Area		
Coordinator	Transportation Programs	1995-1996
Member	Building and Safety Committee	1996-1999
Member	Computer Resource Committee	1996-1997
Member	Rapid Improvement Process Committee	1996-1999
Member	Ad Hoc Committee to Develop CE301, CE311K, CE311S	1996-1997
Member	Computer Use & Policies Committee	1997-1999
Member	Core Course Curriculum Committee	1997-1999
Member	CTR Review Committee	1997-1999
Member	ARE Strategic Planning Committee	1997-1999
Member	CE Committee on Research Programs and Policies	1999-2001
Chairman	CE Committee on Research Programs and Policies	2002
Member	CE Committee on Faculty Evaluation	2000-2002
Member	CE Awards Committee	2002-2003
Chairman	CE Awards Committee	2004
Member	Ad Hoc Committee on Centennial Celebration	2002-2004
Member	Committee to Develop Recommendations on Management of Research Positions for the Department of Civil Engineering	2004

Chairman	Committee to Evaluate Non-faculty Research Promotion Recommendations	2004
Member	Ad Hoc Space Plan Committee	2004
Member	CE Committee on Faculty Evaluation	2004
Chairman	Faculty Evaluation Committee	2005-2006
Member	Research Professor Promotion and Evaluation Committee	2007-2011
Member	Pavement Preservation Advisory Committee	2007-present
Member	CEPM Faculty Search Committee	2008
Member	IRF Leadership Program Candidate Selection Committee	2008
Member	University Continuing Fellowship Candidate Selection Committee	2008
Member	Research Professor Promotion and Evaluation Committee	2010-2011
Chairman	Faculty Evaluation Committee	2011-2012
Member	Civil, Architectural and Environmental Engineering Department Chair Search Committee	2013

### College Committees

Member	Center for Transportation Research Academic and Technical Committee	1980-1986
Member	Library Committee for College of Engineering	1980-1981
Member	Center for Transportation Research Operations Committee	1991-1992
Member	Scholastic Appeals Committee	1983-1984
Member	Bureau of Engineering Teaching Executive Committee	1984-1986
Chairman	Commencement Committee	1993-1994
Member	Candidate Review Committee, Electrical and Computer Engineering	1994-1996
Member	Non-Technical Courses Committee	1995-1996
Member	ABET Committee	1996-1999
Member	College of Engineering UT Interactive Team	1998-1999
Member	Advisory Board of Directors, International Center for Aggregates Research	2000-present
Member	Research Policy Advisory Committee	1999-2007
Member	Ad hoc Committee on Promotion Procedures	2003-2004
Member	Staff Excellence Awards Review Committee	2005-2006
Member	Public Affairs Advisory Committee	2007-present

### University Committees

Member	University of Texas Shuttle Bus Committee	1979-1985
Member	Motor Pool Committee	1985-1986
Member	Parking and Traffic Policies Committee	1990-1998
Chairman	Parking and Traffic Policies Committee	1998-2001
Chairman	University of Texas Shuttle Bus Committee	1993-1995
Member	Master Plan Committee	1994-1995
Member	Parking and Traffic Fee Committee	1996-1997
Member	TA & AI Rights and Privileges Committee	1998-1999
Member	Ad Hoc Search Committee for New Director of Parking and Transportation	1999-2000
Chairman	Ad Hoc Presidential Liaison Committee with Capital Metropolitan Transit Authority	1999-2000
Member	Community Advisory Group for Capital Metropolitan	2001-present

	Transit Authority	
Member	University of Texas Shuttle Bus Committee	2002-2007
Member	University Liaison Representative, Transportation Research Board, National Research Council	2002-present
Chairman	UT Campus, Parking and Traffic Policies Committee	2003-2005
Member	Dean Keeton Street Project Committee	2004
Chairman	University of Texas Shuttle Bus Committee	2008
Member	University of Texas Shuttle Bus Committee	2009-present
Member	University Continuing Fellowship Student Selection Committee	2008-present
Member	Business Productivity Committee	2013-present
Member	Reserve Officer Training Corp (ROTC) Liaison Committee	2014-present
Member	Speedway Redesign Project Committee	2015
Member	Committee on Parking Strategies	2015

### **PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES:**

Member, American Society of Civil Engineers, Urban Transportation Division, Urban Arterials Committee, January 1979-1988.

Selected as a member of a five-man engineer team from Army Reserve Battalion to visit Europe during March 1983. The team conducted studies and made recommendations regarding engineer support of NATO defenses.

Institute of Transportation Engineers, UT Austin Student Chapter, Faculty Advisor, September 1977-August 1986.

Chairman, American Society of Civil Engineers, Highway Division, Planning and Economics Committee, May 1980-1988.

Member, Citizen's Advisory Committee on Traffic Signal System Design, City of Austin, 1985-1986.

Member, National Committee on Student Chapters, Institute of Transportation Engineers, 1985-1986.

Member, Institute of Transportation Engineers, Education Committee, September 1985-August 1986.

Member, Institute of Transportation Engineers Board of Directors, District 9, 1986-1988.

Member, Texas Section Institute of Transportation Engineers Technical Committee, 1986-1987.

Faculty Advisor, American Society of Civil Engineers, 1986-1988.

Secretary/Treasurer, Texas Section Institute of Transportation Engineers, 1986-1987.

Member, Institute of Transportation Engineers International Committee of Student Chapters, 1986-1994.

Originated the concept and implemented a new annual award. The "Mac Shelby" award is named after the first Research Engineer of the Texas Department of Transportation and is presented annually by the Center for Transportation Research to a Texas Department of Transportation Technical Coordinator, 1991.

Active member of the US Army Reserve, Corps of Engineers Branch, current grade Lieutenant Colonel, 1991-1996.

Vice-President, Texas Section Institute of Transportation Engineers, June 1987-June 1994.

Member, Institute of Transportation Engineers, International Speakers Bureau Task Force, 1987-1994.

President, Texas Section Institute of Transportation Engineers, July 1988 - June 1989.

Member, Transportation Educators Council Interim Executive Committee, Institute of Transportation Engineers, 1995-1996.

Member, Highway Division, American Society of Civil Engineers, 1995-1996.

Member, Urban Transportation Division, American Society of Civil Engineers, 1995-1996.

Member, Austin Intelligent Transportation Systems Steering Committee, 1995-1997.

Member, Southwest Region University Transportation Center Executive Committee, 1995-present.

Member, City of Austin-TxDOT Combined Center Team, 1995-1998.

Member, Foresight Committee, Institute of Transportation Engineers, Texas Section, 1995-1997.

Member, Technical Committee, Institute of Transportation Engineers, Texas Section, 1995-1997.

Member, Advisory Committee, Institute of Transportation Engineers, Texas Section, 1995-1997.

Member, Texas Council of University of Transportation Research Centers, (CUTC) 1995-1997.  
Member, TxDOT RMC4 Technical Advisory Panel, 1997-1998.  
Member, TxDOT RMC3 Technical Advisory Panel, 1998-2002.  
Member, Transportation Research Forum, 1997-present.  
Member, University Liaison Representatives, Transportation Research Board, National Research Council, 1999-present.  
Chairman, Computer Applications Session, Canadian Society for Civil Engineers, 28th Annual Conference, London, Ontario, Canada, June 2000.  
Chairman, CUTC New Faculty Award Committee, 2003-2010  
Chairman, SWUTC Outstanding Student Awards Selection Committee, 2003-present.  
Member, Public Works Committee, City of Sunset Valley, Texas, 2003-present.  
Member, ENO Nominee Selection Committee, 2005-present.  
Member, Canadian Society for Civil Engineering Committee, 2007-present.  
Member, The Society for Computer Simulation International, 2007-present  
Member, Texas Partnership for Transportation Quality Steering Committee, 2007-present  
Member, Transportation Research Board, Research and Technology Coordinating Committee, 2010-present  
Member, National Science Foundation, Proposal Review Panel, 2011-2012  
Member, National Science Foundation, Proposal Review Panel, 2012-2013  
Member, Capital Metro Citizen's Advisory Committee, 2013-present

#### **COMMUNITY ACTIVITIES:**

Reviewed textbook by May, Dolph, *Introduction to Traffic Flow Theory*, for McGraw Hill, prior to publication.  
Faculty Advisor, UT Austin Student Chapter of the Institute of Transportation Engineers, 1977-1982.  
Graduate Advisor, transportation area graduate students, UT Austin, Department of Civil Engineering, 1977-1983.  
Co-organizer of first annual symposium entitled "Role of Research in Transportation" sponsored by the Department of Civil Engineering, Center for Highway Research, Council for Advanced Transportation Studies, and Student Chapters of ASCE and ITE, February 1978.  
Developed and taught a new course entitled "Public Transportation Systems," UT Austin, Department of Civil Engineering, 1978.  
Coordinated the initiation of graduate course offerings after normal working hours, September 1982.  
Faculty Advisor, UT Austin Student Chapter of the Institute of Transportation Engineers. Sponsored Student Chapter member, who went on to win the State and District (12 state area) student paper competition receiving cash awards of \$50 and \$100 during Spring 1982.  
Revised CE 391L Advanced Traffic Engineering, incorporating a significant amount of computerized traffic engineering tools. Various software programs will be converted to microcomputers for later use in this and other courses, through a successful Project Quest proposal, 1983-1984.  
Conducted faculty firesides for Tau Beta Pi and Chi Epsilon pledges to discuss the engineering profession, 1984-1986.  
Initiated development of a computerized support package for enhancing the teaching of CE 321, Under Project Quest, 1984-1985.  
Arranged for CE 367M students to conduct field studies and interface with the professional staff of Austin Metro Transit Authority, 1985-87.  
Designed and developed a micro-computer-aided instruction system for CE 321 in order to inspire student interest and improve learning efficiency, 1985-1986.  
Arranged for public transportation class to participate in "real world" bus system operations exercises, 1985-1986.  
Assisted UT Austin Student Chapter of Institute of Transportation to host "World of Engineering" which gave approximately 250 high school students an opportunity to visit UT Austin facilities and meet engineering students, 1986-87.

Adopted a new textbook and redesigned major components of CE 321, Transportation Systems, 1986-1987.

Attended ASCE Student Chapter Workshop, as Faculty Advisor of ASCE Student Chapter, New Orleans, LA, November 1987.

Completed 5-day training course for use of CLM/SYSTEMS, Inc. software package CEAL, FL, June 1987.

Organized and taught 2-day instruction traffic simulation workshops for traffic engineers employed by state and city governments in Texas, January 1987 - May 1987.

Organized annual Bureau of Engineering Teaching, Teaching Effectiveness Luncheon and Panel Discussion for College of Engineering, 1988 -1989.

Reviewed CE 321 textbook, *Traffic and Highway Engineering*, for West Publishing Company prior to publication, 1989-1990.

Reviewed paper for *Transportation Research Record*, 1989-1990.

Designed and wrote original computer software which provides computer simulation of parking facility utilization for a major parking and traffic study for the Johnson Space Center, National Aeronautics and Space Administration, Houston, TX, 1991.

Developed and taught a new course entitled "Public Transportation Engineering," UT Austin, Department of Civil Engineering, 1992.

Invited to present paper on new personally developed CAD software at the International Transportation Issues Conference in Pueblo, Mexico, 1994.

Completed preparation of the third set of bound course notes which now include CE 321, CE 391L, and CE 301, 1994.

Reviewed 19 abstracts for NCUR, 1997.

Reviewed papers for Transportation Research Board, 1997.

Reviewed papers for *Journal of Transportation Engineering*, American Society of Civil Engineers, 1998.

Acted as faculty mentor for high school student participants in the 1998 Honors Colloquium, July 1998.

Organized Center for Transportation Research Symposium, July 1999.

Evaluated faculty member promotions, Department of Civil and Environmental Engineering, University of Missouri-Columbia, September 1999.

Reviewed "Transportation Engineering," by Garber/Hoel for Brooks/Cole Publishers, October 1999.

Reviewed "A study of PCE's of Superhighways in Ahujian River Delta Areas in China," by Shuo/Zhang for American Society of Civil Engineer's *Journal of Transportation Engineering*, January 2000.

Reviewed "Field Evaluation of Lane Selection Strategies at Signalized Intersections" for the *Journal of Transportation Engineering*, May 2001.

Evaluated faculty member promotions, Department of Civil and Environmental Engineering, University of Southern California, June 2001.

Evaluated faculty member promotions, Department of Civil and Environmental Engineering, Florida A&M University-Florida State University, August 2001.

Attended TxDOT, AGC, Total Quality Initiative, Annual Awards, September 2001.

Evaluated faculty member promotions, Dean, College of Engineering, Pontificia Universidad Católica de Chile, October 2001.

Reviewed "Variable Power Vehicle Dynamics Model for Estimating Maximum Truck Acceleration Levels," by Hesham Rakha and Ivana Lucic for American Society of Civil Engineer's *Journal of Transportation Engineering*, October 2001.

Evaluated faculty member promotions, Department of Civil, Construction, and Environmental Engineering, Oregon State University, December 2001.

Reviewed "Buying into the Bypass: Allowing Trucks to Pay to Use the Ramp Meter Bypass," for the Transportation Research Forum's *Journal of the Transportation Research Forum*, January 2002.

Reviewed "Enhanced Crash Reporting to Explore Work Zone Crash Patterns," by Raub/Schofer/Sawaya/Ziliaskopoulos, for American Society of Civil Engineer's *Journal of Transportation Engineering*, May 2002.

Reviewed Transportation Research Board paper submission entitled "Intermodal Freight Terminal Design and Operations," by J. Klodzinski and H. M. Al-Deek, August 2002.



Reviewed "Evaluating Operation of a Modern Single-Lane Roundabout with Comparable Two-way Stop Controlled Intersections," by Luttrell/Rys/Russell, for the *Journal of Transportation and Statistics*, January 2003.

Reviewed "A Recommended Specification for Recycled Content Guardrail Posts," by Atahan, for the *Canadian Journal of Civil Engineering*, January 2003.

Evaluated faculty member promotions, Department of Civil and Environmental Engineering, Iowa State University, October 2002.

Reviewed "Development of a Comprehensive Microscopic Theory of Traffic Flow," by Chakroborty, et al., for the American Society of Civil Engineer's *Journal of Transportation Engineering*, March 2003.

Reviewed Research Proposal for the University of Rhode Island Transportation Center, March 2003.

Reviewed "Partial Safety Factors for Designing and Assessing Flexible Pavement Performance," by S.S. Wang and H.P. Hong, for the *Canadian Journal of Civil Engineering*, September 2003.

Reviewed "Transit Network Optimization – Minimizing Transfers and Optimizing Route Directness," by Zhao, Zeng, and Ubaka, for the *Journal of Public Transportation*, September 2003.

Reviewed and evaluated Transportation Research Board paper, "Introducing Level of Service Standards for Intermodal Freight Terminals" by Anthanasios Ballis, September 2003.

Organized for Transportation Research Symposium, April 2004.

Reviewed "Examining the Quality of O-D Trip Table Estimated by Path Flow Estimator," by Chen, Chootinan, and Recker, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, May 2004.

Consulted with Motorola regarding design improvement of the company's automated transport system in one production area, July 2004.

Reviewed and evaluated Transportation Research Board paper, "A Microsimulation Traffic Model to Estimate Accidents Due to a Standing Obstacle," by Perneti, Mariano, September 2004.

Reviewed and evaluated Transportation Research Board paper, "Field Study and Modeling of Vehicles' Merging Behavior from Acceleration Lane to Expressway Traffic," by Perneti, Mariano, September 2004.

Reviewed "Developing Combined Genetic Algorithm - Hill Climbing Optimization Method for Area Traffic Control," by Ceylan, Halim, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, September 2004.

Reviewed pre-proposal, The University of Alabama, University Transportation Center for Alabama, Tuscaloosa, Al, September 2004.

Attended the Alumni Banquet and Academy of Distinguished Alumni Induction Ceremony, Austin, Texas, October 2004.

Evaluated faculty member promotions, University of South Florida, Department of Civil and Environmental Engineering, Tampa, FL, October 2004.

Evaluated faculty member promotions, United Arab Emirates University, Civil and Environmental Engineering Department, Al Ain, United Arab Emirates, January 2005.

Reviewed "Operational and Safety Evaluation of Freeways with Posted Minimum Speed Limit," for the *Journal of the Transportation Research Forum*, February 2005.

Reviewed "Traffic Accident Segmentation: A Latent Class Clustering Approach," by Depaire, Benoit and Geert Wets, for the *Journal of Transportation and Statistics*, Transportation Research Institute, Limburg Universitair Centrum, Diepenbeek, Belgium, February 2005.

Reviewed "Right Turn Split: A New Design to Alleviate Weaving on Arterial Streets," by Shaaban and Radwan, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, March 2005.

Reviewed "Relationship Between Driving Behaviors: Speed, Lateral Placement, and Driver Eye Movement," by Suh, Y. Park, C. Park, and Chon, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, April 2005.

Reviewed "Modelling Driver Visual Demand on Three-Dimensional Highway Alignments," by Easa and He, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, August 2005.

Reviewed and evaluated Transportation Research Board paper, "Micro Simulation of Large Truck Activities at Tight Intersections," September 2005.

Reviewed "International Research Fellowship Program: Intelligent Agent Optimization of Transit Route Network Design," by Blum, National Science Foundation Proposal, March 2006.

Reviewed "Using AVL/APC Data to Analyze Passenger Activity and Its Impact On Bus Dwell Time and Travel Time," for the *Journal of the Transportation Research Forum*, September 2005.

Reviewed "A Comparison of Transportation Network Resilience Under Simulated System Optimum and User Equilibrium Conditions," by Pam M. Murray-Tuite, for the *2006 Winter Simulation Conference Proceedings*, April 2006.

Reviewed "Right Turn Split: A New Design to Alleviate Weaving on Arterial Streets," for the American Society of Civil Engineer's *Journal of Transportation Engineering*, December 2005.

Evaluated faculty member promotions, University of Missouri-Rolla, Civil, Architectural and Environmental Engineering, Rolla, Missouri, September 2005.

Evaluated faculty member promotions, Texas A&M University, Zachry Department of Civil Engineering, College Station, TX, July 2006.

Participated in Public Works Committee for the City of Austin

Reviewed and evaluated Transportation Research Board paper, "A Framework for Evaluating Pedestrian-Vehicle Interactions at Unsignalized Crossing Facilities in a Microscopic Modeling Environment," September 2006.

Evaluated faculty member promotions, Michigan State University, Department of Civil, Architectural and Environmental Engineering, East Lansing, MI, September 2006.

Reviewed "Modeling Driver Behavior and Safety on Freeway Merging Areas," by M. Ahammed, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, December 2006.

Reviewed "Incorporating Differences in Marginal Utilities of Time Across Activities in Time Allocation Model," for the 7<sup>th</sup> East Asia Society for Transportation Studies (EASTS) Conference, April 2007.

Reviewed and evaluated Transportation Research Board paper, "A Framework for Evaluating Pedestrian-Vehicle Interactions at Unsignalized Crossing Facilities in a Microscopic Modeling Environment," September 2006.

Evaluated faculty member promotions, University of Rhode Island, Department of Civil and Environmental Engineering, Kingston, Rhode Island, November 2007.

Reviewed "The Transit Route Network Design Problem: A Review," by Kepaptsoglou and Karlaftis, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, February 2008.

Reviewed "Modelling the Effect of Pavement-tire Contact Stresses on Top-down Cracking of Asphalt Pavements," for the *International Journal of Pavement Engineering*, February 2008.

Reviewed "Evaluation of Football Shaped Rumble Strips Versus Rectangular Rumble Strips," for the Transportation Research Forum, October 2007.

Evaluated faculty member promotions, University of Rhode Island, Department of Civil and Environmental Engineering, Kingston, Rhode Island, November 2007.

Reviewed "The Transit Route Network Design Problem: A Review," by Kepaptsoglou and Karlaftis, for the American Society of Civil Engineer's *Journal of Transportation Engineering*, February 2008.

Reviewed "Modelling the Effect of Pavement-tire Contact Stresses on Top-down Cracking of Asphalt Pavements," for the *International Journal of Pavement Engineering*, February 2008.

Reviewed "A Proportion Based Format System for Freeway and Expressway Guide Signs," for the American Society of Civil Engineer's *Journal of Transportation Engineering*, May 2008.

Reference for ABET Program Evaluator Applicant, May 2008.

Evaluated faculty member promotions, Texas Tech University, College of Engineering, Lubbock, Texas, August 2008.

Reviewed "An Alternative Single-Number Indicator of Longitudinal Road Unevenness," by Kropac and Mucka for the *Canadian Journal of Civil Engineering*, August 2008.

Reviewed "A Comparative Analysis of Currently Used Microscopic and Macroscopic Traffic Simulation Software," by Ratrou and Rahman for the *Arabian Journal for Science and Engineering*, King Fahd University of Petroleum & Minerals in Dhahran, Saudi Arabia, August 2008.

Acted as P.E. Exam Application Reference for Dr. Wei Fan, September 2008

Reviewed “Integrating Active Learning with Simulation: Development and Testing of a New Approach to Learning Signal Timing,” for the Transportation Research Board, *Transportation Research Record*, September 2008

Reviewed “Genetic Algorithms for Container Terminal Optimization: An Annotated Discussion,” for the Transportation Research Board, *Transportation Research Record*, September 2008

Acted as external mentor for Dr. John Walewski, Zachry Department of Civil Engineering at Texas A&M, New Faculty Development Program

Reviewed “Household Accessibility Analysis in Developing Countries Using Time-Space Prism Approach,” for the *NED University Journal of Research*, Karachi, Pakistan, October 2008

Reviewed “The Safe and Equitable Accommodation of Vulnerable Road Users in Urban Road Infrastructure Design and Traffic Engineering,” Discovery Grant proposal for the Natural Sciences and Engineering Research Council of Canada, January 2009

Reviewed “Modelling the Effect of Pavement-tire Contact Stresses on Top-down Cracking of Asphalt Pavements,” for the *International Journal of Pavement Engineering*, January 2009

Evaluated faculty member promotions, American University of Sharjah, College of Engineering, Sharjah, UAE, February 2009

Reviewed “A CORBA-based Distributed System for Advanced Traveler Information Systems,” by Liao and Hu for *Software: Practice and Experience*, March 2009

Reviewed “Household Accessibility Analysis in Developing Countries Using Time-Space Prism,” for the *NED University Journal of Research*, April 2009

Reviewed “Noise Measuring Technique and Field Evaluation Based on the Effects of Vehicles and Pavement Types,” by Mun and Cho for the *Canadian Journal of Civil Engineering*, April 2009

Reviewed “Intelligent Agent Optimization of Urban Bus Transit System Design,” for the *Journal of Transportation Research*, April 2009

Visit of the Civil Engineering Faculty of the Universidad Autónoma de Nuevo León, Tour of Pickle Research Campus and Demonstration of Rolling Dynamic Deflectometer, 2009

Reviewed “Traffic Safety Improvement of Young Drivers through Community Involvement and Positive Parental Guidance,” for New England University Transportation Center, MIT, May 2009

Reviewed “Scheduling of Inbound and Outbound Trucks at Cross-docks – A Multi-Objective Approach,” for the Transportation Research Board, *Transportation Research Record*, August 2009

Reviewed “A Methodological Approach for Estimating Temporal and Spatial Extent of Delay Caused by Freeway Accidents,” for the Transportation Research Board, *Transportation Research Record*, August 2009

Evaluated faculty member promotions, University of Waterloo, Civil & Environmental Engineering, Waterloo, ON, Canada, October 2009

Evaluated faculty member promotions, The Catholic University of America, School of Engineering, Washington, DC, December 2009

Reviewed “Welfare and Equity Impacts of Gasoline Price Changes under Different Public Transportation Service Levels,” for the *Journal of Public Transportation*, December 2009

Evaluated faculty member promotions, Southern Methodist University, Dept. of Environmental & Civil Engineering, Dallas, TX, January 2010

Evaluated faculty member promotions, Missouri University of Science and Technology, Department of Civil, Architectural & Environmental Engineering, Rolla, MO, August 2010

Promotional Faculty Review, Missouri University of Science and Technology, Department of Civil, Architectural, and Environmental Engineering, Rolla, MO, September 2010

Reviewed “The Design of Interurban Bus Networks in Centers” for the ASCE Transportation Engineering Journal, September 2010

Reviewed “Joint Optimization of Integrated Fare and Service Frequencies for Bus Routes at a Transfer Terminal with Elastic Demand” for the Transportation Research Board, September 2010

Reviewed “State-of-the-Art: Centerline Rumble Strips Usage in the United States” for the Journal of the Transportation Research Forum, November 2010

Reviewed “Forecasting Ridership for a Metropolitan Transit Authority” for Transportation Research Part A: Policy and Practice, January 2011

Reviewed “Introducing Attitudinal Factors into Urban Transportation Planning” for the Natural Science and Engineering Research Council of Canada, January 2011

Reviewed “Observational Testing of Roadway Sign Sheeting Materials Using a Dynamic Driving Methodology” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Vehicle Actuated Signal Controller for Heterogeneous Traffic having Limited Lane Discipline” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Modifications to the Incremental Queue Accumulation Method for Complex Left Turn Phasing” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Bias, Repeatability, and Measurement Uncertainty of Traffic Sign Retro-reflectivity” for the ITE Learned Journal of Transportation, January 2011

Reviewed “A Study of Freeway Volume-to-Capacity Ratio-Based Travel Time Approximations for Planning Applications” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Understanding the Economics of Transportation Projects” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Multi-Resolution Model Backcasting: Validation of Meso-Micro Simulation Results for Heterogeneous Traffic on Freeway Corridors” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Emergency Dispatching and Traffic Congestion: Documentation of Practices and Perceptions” for the ITE Learned Journal of Transportation, January 2011

Reviewed “Tailgating on Urban Highways and Possible Means to Mitigate Tailgating Behavior” for the ITE Learned Journal of Transportation, January 2011

Reviewed Proposal “Modeling the Interaction among Urban Form, Accessibility, Congestion, and Travel Behavior Using System Dynamics,” for the University of Florida, Center for Multimodal Solutions for Congestion Mitigation, Gainesville, FL, February 2011

Reviewed “Developing an online algorithm for Public-Transit Transfer Synchronization,” for the Israel Science Foundation, February 2011

Reviewed “Bus-stop Control Strategies Based on Fuzzy Rules for the Operation of a Public Transport System” for the *Institute of Electrical and Electronics Engineers (IEEE) ITS Journal*, May 2011

Reviewed “An Application of Ant System to Bus Network Design Problem: An Algorithm and a Case Study” for the *Public Transport Journal*, May 2011

Reviewed Fang, Yunfei, Chu Feng, Said Mammam, MengChu Zhou. “Optimal Lane Reservation in Transportation Network.” ICNSC 2011: 305-310

Promotional Faculty Review, Florida International University, Department of Civil and Environmental Engineering, Miami, FL, September 2011.

Reviewed “Modeling Fatigue-Induced Collision Relative Risk: A review on Service Hours and Fatigue Management Policies on Transit Bus Operators in Florida” for the *Transportation Research Record*, Journal of the Transportation Research Board, September 2011.

Reviewed “Optimizing Station Locations and their Connection Sequence Along Rail Transit Lines through a Bilevel Approach,” for the *Transportation Research Record*, Journal of the Transportation Research Board, September 2011.

Reviewed “Modelling, Analysis, and Evaluation of Intelligent Bus Rapid Transit Systems in Cyprus” for the *Transportation Research Record*, Journal of the Transportation Research Board, October 2011.

Reviewed “Bus-stop Control Strategies Based on Fuzzy Rules for the Operation of a Public Transport System” for the *Transportation Research Record*, Journal of the Transportation Research Board, December 2011.

Promotional Faculty Review, University of Toronto, Department of Civil Engineering, Toronto, Ontario, Canada, February 2012.

Promotional Faculty Review, Universiti Sains Malaysia, School of Engineering, Nibong Tebal, Malaysia, March 2012.

Reviewed nine proposals to the National Science Federation (NSF), July 2012.

Reviewed “Optimization of Transit Operation Strategies; A Case Study of Guangzhou, China” for the *Transportation Research Record*, Journal of the Transportation Research Board, September 2012.

Reviewed “Travel Time Reliability in a Signal Control Problem C: A Simulation-based Optimization

Approach” for the *Transportation Research Record*, Journal of the Transportation Research Board, September 2012.

Reviewed “A Model for Traffic Simulation of Flared Rural Road Intersections” for the *Transportation Research Record*, Journal of the Transportation Research Board, September 2012.

Reviewed “Prioritizing of Roads Safety Based on Quasi-Induced Exposure Method and Utilization of Analytical Hierarchy Process” for *Civil Engineering Infrastructure Journal*, September 2012.

Reviewed “Predicting Driver Behavior Using Field Experiment Data and Driving Simulator Experiment Data: Assessing Impact of Elimination of Stop Regulation at Railway Crossings” for the Hindawi Publishing Corporation, December 2012.

Promotional Faculty Review, Schulich School of Engineering, University of Calgary, March 2013.

Reviewed “A Low-Carbon-Cased Bi-Level Optimization Model for Public Transit Network” for Hindawi Publishing Corporation, May 2013.

Evaluated “Evaluation of Signalized Intersection Safety Using Centrac System,” a research proposal, for the University of California Transportation Center, May 2013.

Reviewed “Prioritizing of Roads Safety Based on Quasi-Induced Exposure Method and Utilization of Analytical Hierarchy Process” for the Civil Engineering Infrastructures Journal, May 2013.

Reviewed “A Low-carbon-based Bi-level Optimization Model for Public Transit Network” for the Hindawi Publishing Corporation, May 2013.

Reviewed “Surrogate-based Optimization of Expensive-to-Evaluate Objective for Optimal Highway Toll Charging in a Large-scale Transportation Network” for the Computer-aided Civil and Infrastructure Engineering journal, May 2013.

Reviewed “Real-time Estimation of Pollution Emissions and Dispersion from Highway Traffic” for the Computer-aided Civil and Infrastructure Engineering journal, June 2013.

Chairman, Transportation Engineering and Policy Making Session, Canadian Society for Civil Engineers Annual Conference, Montreal, Quebec, Canada, June 2013.

Reviewed “Determining Cost Effective Policy for Visibility of Overhead Guide Signs on Highways” for the *Journal of the Transportation Research Forum*, February 2014.

Reviewed “Evaluation of Quality and Completeness of Archived ITS Data” for IEEE Transactions on Intelligent Transportation Systems and Intelligent Transportation Systems Magazine, February 2014.

Reviewed “Using Delay Functions to Evaluate Transit Priority at Signal” for *Public Transport*, April 2014.

Reviewed “Global Optimization for Timetable Setting of a Single Bus Line Using Dynamic Programming” for *Journal of Discrete Dynamics in Nature and Society*, January 2014.

Reviewed “A Framework for an on-Demand Dangerous Goods Routing Support System for the Metro Vancouver Area” for *Journal of Engineering Research*, October 2013

Organized the 2<sup>nd</sup> Annual VeloTexas Bicycle Conference, November 2013.

Reviewed “Cyclist’s Helmet Recognition Using Computer Vision Techniques” for the Transportation Research Board, January 2014.

Reviewed “Jam Occupancy and Other Lingering Problems with Empirical Fundamental Diagrams” for the Transportation Research Board, January 2014.

Reviewed *Traffic Engineering, 4<sup>th</sup> Edition* textbook by Roess, Prassas, and McShane, February 2014.

Reviewed “The Americans with Disabilities Act of 1990 (ADA) Paratransit Cost Issues and Solutions for the Greater Richmond Transit Company (GRTC) Case Studies on Transport Policy” for *Case Studies on Transport Policy*, April 2014.

Reviewed “Uncertainty-Based Prediction of Work Zone Capacity Using a Bayesian Approach” for *Computer-Aided Civil and Infrastructure Engineering*, May 2014.

Reviewed research proposal entitled “Development of Automated System to Measure and Calculate International Roughness Index Using Image Analysis Technique from Unmanned Aerial Vehicle and Location System,” for the National Center for Transportation Systems Productivity and Management.

Reviewed proposal for new book entitled *Civil Engineering Systems: Model Formulation, Analysis and Decision Making for Infrastructure* for CRC PRess, March 2014.

Interviewed with Jeff Kuneth about alternative transportation trends for “SunRail and the Tyranny of I-4” for the *Orlando Sentinel*, April 29, 2014.

Interviewed with Robyn Ross for “Travel Demand Management” for the *Austin Chronicle*, June 26, 2014.

Interviewed with Rose Cahalan for “What Will Austin’s New Urban Rail Mean for UT?” for The *Alcalde*, June 30, 2014.

Reviewed “Online Capacity Building for Transportation Professionals – Current Practices and Future Potential” for *Transportation Research Record*, September 2014.

Reviewed “Micro-simulation of Desired Speed for Temporary Work Zone with a New Calibration Method” for *Transportation Research Record*, September 2014.

Promotional Faculty Review, Northeastern University, October 2014.

Peer Teaching Review, Civil, Architectural, and Environmental Engineering Department, October 2014.

Interviewed with Robert Meckel about issues with Austin’s road system for Fox 7 Austin, November 12, 2014.

Interviewed by Michael Aaron about how the November 4 ballot will affect Austin traffic for UT Journalism, November 2014.

Panel Member, Austin CitySummit a half-day conference delving into key issues facing the City of Austin, November 17, 2014.

Promotional Faculty Review, Jordan University of Science and Technology, November 2014.

Holiday Door Judge, University of Texas Parking and Transportation Services, December 2014.

Reviewed “Fixed-route Taxi Network Design Problem,” for *Journal of Advanced Transportation*, January 2015.

Interviewed by Terrence Henry about Toll Roads for KUT, March 30, 2015.

Reviewed, “Insights into Carsharing Demand Dynamics: Outputs of an Agent-based Model Application to Lisbon, Portugal,” for *International Journal of Sustainable Transportation*, April 2015.

Reviewed “Redesigning the Street,” for *City of Austin Transportation Department*, May 2015.

Reviewed “Improved Rapid Transit Network Design Model: Considering Transfer Effects,” for *Annals of Operations Research*, May 2015.

Reviewed “A Study of Signal Coordination Scheme Based on Traffic Emission,” for *Intelligent Transportation Systems*, July 2015.

Reviewed “Driver wayfinding strategies in an unfamiliar urban environment,” for *Journal of Transportation Technology*, July 2015.

Reviewed “Zoning based Vertical Transportation Optimization in Skyscraper”, for *Computer Aided Civil and Infrastructure Engineering*, August 2015.

## **PUBLICATIONS:**

### **Refereed Journal Publications**

Machemehl, Randy B., Clyde E. Lee, and C. Michael Walton, "Acquiring Traffic Data By In-Motion Weighing," *Transportation Engineering Journal of the American Society of Civil Engineers*, Vol. 101, No. TE4, pp. 681-689, November 1975.

Walton, C. Michael, Randy B. Machemehl, T. Horne, William Fung, and S.I. Ring, "Accident and Operational Guidelines for Continuous Two-Way Left-Turn Median Lanes," *Transportation Research Record No. 737*, National Academy of Sciences, Transportation Research Board, pp. 43-54, Washington, DC, 1979.

Lee, Clyde E. and Randy B. Machemehl, "Traffic Control and Geometrics for Weigh-in-Motion Enforcement Stations," *Transportation Research Record No. 811*, National Academy of Sciences, Transportation Research Board, pp. 35-41, Washington, DC, June 1981.

Machemehl, Randy B. and Thomas W. Kennedy, "Asphalt Mixtures: A Comparative Analysis of Characterization for Design," *Transportation Research Record No. 821*, National Academy of Sciences, Transportation Research Board, pp. 22-29, Washington, DC, July 1981.

- Huber, M. J., A.D. St John, and Randy B. Machemehl, "Estimation of Passenger-Car Equivalents of Trucks in Traffic Stream," *Transportation Research Record No. 869*, National Academy of Sciences, Transportation Research Board, pp. 60-70, Washington, DC, 1982.
- Wu, C. S., Clyde E. Lee, Randy B. Machemehl, J. Williams, and P.S. Parsons, "Effects of Multiple-Point Detectors on Delay and Accidents," *Transportation Research Record No. 881*, National Academy of Sciences, Transportation Research Board, pp. 1-9, Washington, DC, 1982.
- Lin, H. J. and Randy B. Machemehl, "A Developmental Study of Implementation Guidelines for Left Turn Treatments," *Transportation Research Record No. 905*, National Academy of Sciences Transportation Research Board, Washington, DC, January 1983.
- Machemehl, Randy B., "Guidelines for Left-Turn Phase Sequencing," *Transportation Engineering Journal of the American Society of Civil Engineers*, New York, NY, 1983.
- Machemehl, Randy B. and A.M. Mechler, "A Comparative Analysis of Left-Turn Phase Sequencing," Abridgment, *Transportation Research Record No. 956*, National Academy of Sciences, Transportation Research Board, pp. 37-40, Washington, DC, 1984.
- Machemehl, Randy B., "Development of a Microcomputer Based Traffic Turning Movement Counting Device," *Transportation Engineering Journal of the American Society of Civil Engineers*, New York, NY, 1984.
- Lee, Clyde E. and Randy B. Machemehl, "Weighing Trucks on Axle-Load and Weigh-in-Motion Scales," *Transportation Research Record No. 1048*, National Academy of Sciences, Transportation Research Board, pp. 74-82, Washington, DC, 1985.
- Machemehl, Randy B., "An Evaluation of Left-Turn Procedures," *Institute of Transportation Engineering Journal*, Institute of Transportation Engineers, pp. 37-41, November 1986.
- Machemehl, Randy B. and Clyde E. Lee, "Traffic Simulation on a Microcomputer," *Transportation Engineering Journal of the American Society of Civil Engineers*, 1986.
- Lee, Clyde E. and Randy B. Machemehl, "The TEXAS Model for Intersection Traffic -- A User-Friendly Microcomputer Version with Animated Graphics Screen Display," *Transportation Research Record No. 1142*, National Academy of Sciences, Transportation Research Board, pp. 1-5, Washington, DC, August 1987.
- Machemehl, Randy B. and M. Acampora, "Guidelines for Design and Implementation of Collector-Distributor Lanes on Regional Arterial Streets," *Transportation Engineering Journal of the American Society of Civil Engineers*, August 1991.
- Machemehl, Randy B. and William V. Ward, "Concepts for the Design and Operation of Regional Arterial or Super Streets," *Transportation Engineering Journal of the American Society of Civil Engineers*, August 1991.
- Machemehl, Randy B. and S. Estathiadis, "An Examination of Inter-Vehicle Spacing and Starting Times," *Journal of the Institute of Transportation Engineers*, Washington, DC, 1992.
- Machemehl, Randy B. and William V. Ward, "Regional Arterial (Super Street) Concepts," *Transportation Research Record No. 1360*, National Research Council, Transportation Research Board, pp. 121-125, Washington, DC, February 1993.
- Machemehl, Randy B. and D. Millar, "Evaluation of the Spatial Distribution of Activity Center Parking Facilities," *Transportation Research Record No. 1404*, National Research Council, Transportation Research Board, pp. 46-49, Washington, DC, 1994.
- Machemehl, Randy B., Heidi Westerfield, and Rob Harrison, "A Model for Estimating the Value of Property Access Rights," *Journal of the Transportation Research Forum*, National Academy of Sciences, Washington, DC, 1995.
- Machemehl, Randy B., Chungwon Lee, Christopher Oswald, and Mark Euritt, "A Survey Approach for the Acceptability of Highway Tolling in Texas," *Journal of the Transportation Research Forum*, Washington, DC, 1996.
- Kou, Cheng-Chen and Randy B. Machemehl, "The Probabilistic Aspect of Measurement Errors in Estimating Speed Through Video Image Technique," *Transportation Engineering Journal of the American Society of Civil Engineers*, May 1996.
- Machemehl, Randy B. and Tsai-Yun Liao, "Optimal Traffic Signal Strategy for Fuel Consumption and Emissions Control at Signalized Intersections," *1996 European Transport Forum*, London, England.

- Machemehl, Randy B. and Stephanie Otis, "Predicting Pedestrian Safety at Suburban Signalized Intersections," *Compendium of Technical Papers, Institute of Transportation Engineers*, Minneapolis, MN, September 1996.
- Machemehl, Randy B., Chungwon Lee, Christopher Oswald, and Mark Euritt, "A Survey Approach for the Acceptability of Highway Tolling and Congestion Pricing in Texas," *Journal of the Transportation Research Forum*, Vol. 36, No. 1, Chicago, IL, 1996.
- Machemehl, Randy B. and Tsai-Yun Liao, "Fuel Consumption Based on Optimal Traffic Signal Timing," *Transportation Research Forum*, Vol. 36, No. 1, Chicago, IL, 1996.
- Liao, Tsai-Yun and Randy B. Machemehl, "Fuel Consumption Based Optimal Traffic Signal Timing," *Journal of the Transportation Research Forum*, Vol. 36, No. 1, 1996.
- Lee, Chungwon, Christopher Oswald, Randy B. Machemehl, Mark Euritt, and Rob Harrison, "A Survey Approach for the Acceptability of Highway Tolling and Congestion Pricing in Texas," *Journal of the Transportation Research Forum*, Vol. 36, No. 1, pp. 43-58, 1996.
- Kou, Cheng-Chen and Randy B. Machemehl, "Probabilistic Speed Estimation Measurements Errors Through Video Images." *ASCE Journal of Transportation Engineering*, Vol. 123, No. 2, pp. 136-141, March/April, 1997.
- Kou, Cheng-Chen and Randy B. Machemehl, "Modeling Vehicle Acceleration-Deceleration Behavior During Merge Maneuvers." *Canadian Journal of Civil Engineering*, 1997.
- Garrow, Michael and Randy B. Machemehl, "Development and Evaluation of Transit Signal Priority Strategies," *Journal of Public Transportation*, Center for Urban Transportation Research, July 1998.
- Liao, Tsai-Yun and Randy B. Machemehl, "Development of An Aggregate Fuel Consumption Model for Signalized Intersections," *Transportation Research Record No. 1641*, Transportation Research Board, Washington, DC, 1998.
- Lee, Chungwon and Randy B. Machemehl, "Local and Iterative Searches for the Combined Signal Control and Assignment Problem: Implementation and Numerical Examples," *Transportation Research Record No. 1683*, Transportation Research Board, pp. 102-109, Washington, DC, 1999.
- Hunter, Michael and Randy B. Machemehl, "Operational Evaluation of Freeway Ramp Design," *Transportation Research Record No. 1751*, Transportation Research Board, pp. 90-100, January 2001.
- Kockelman, K., R. Machemehl, A. Overman, M. Madi, J. Sesker, J. Peterman, and S. Handy, "Frontage Road: An Assessment of Legal Issues, Design Decisions, Costs, Operations and Land-Development Differences," *ASCE Journal of Transportation Engineering*, March 2003.
- Wang, F. and R. Machemehl, "Current Status and Variability of In-Service Truck Tire Pressures in Texas," *Transportation Research Record No. 1853*, pp. 157-164, Transportation Research Board, Washington, D.C., 2003.
- Wang, F., Z. Zhang, and R. Machemehl, "Decision-Making Problem for Managing Pavement Maintenance and Rehabilitation Projects," *Transportation Research Record No. 1853*, pp. 21-28, Transportation Research Board, Washington, D.C., January 2004.
- Prozzi, J., R. Machemehl, R. Baker, T.H. DeFries, R.D. Matthews, and D. Lewis, "The Texas Diesel Fuels Project, Part 3: Cost-Effectiveness Analyses for An Emulsified Diesel Fuel for Highway Construction Vehicle Fleets," *Journal of Fuels and Lubricants*, 112(4), pp. 86-98, July 2005.
- Fan, Wei and R. Machemehl, "Optimal Transit Route Network Design Problem with Variable Transit Demand: A Genetic Algorithm Approach," American Society of Civil Engineers, *Journal of Transportation Engineering*, Vol. 132, p 40, January 2006.
- Fan, Wei and R. Machemehl, "Using a Simulated Annealing Algorithm to Solve the Transit Route Network Design Problem," American Society of Civil Engineers, *Journal of Transportation Engineering*, Vol. 132, p 122, February 2006.
- Lownes, N.E. and R. Machemehl, "Sensitivity of Simulated Capacity to VISSIM Driver Behavior Parameter Modification," *Transportation Research Record, No. 1988*, Transportation Research Board, Washington, D.C., 2006, pp.102-110.
- Feng Wang and R. Machemehl, "Mechanistic-Empirical Study of Effects of Truck Tire Pressure on Pavement," *Transportation Research Record, No. 1947*, Transportation Research Board, Washington, D.C., 2006, pp.136-145.



- Fan, Wei and R. Machemehl, "A Multi-Stage Montecarlo Sampling Based Stochastic Programming Model for The Dynamic Vehicle Allocation Problem," *Advances in Transportation Studies, An International Journal*, University Roma Tre, Rome, Italy, July 2007.
- Hair, Ashley and Randy Machemehl, "Impact of Rising Fuel Prices on U.S. Transit Ridership," *Transportation Research Record: Journal of The Transportation Research Board, No. 1992*, Transportation Research Board of the National Academies, Washington, D.C., 2007, pp. 11-19.
- Fan, Wei, R. Machemehl and N. Lownes, "Carsharing: A Dynamic Vehicle Allocation Decision Making Problem," *Journal of Transportation Research Board, No. 2063*, National Research Council, Washington D.C., January 2008.
- Fan, Wei and R. Machemehl, "A Tabu Search Based Heuristic Method for the Transit Route Network Design Problem," Computer Aided Scheduling of Public Transport Book by Springer Series, Lecture Notes in Economics and Mathematical Systems, January 2008.
- Fan, Wei, N.E. Lownes, and R. Machemehl, R.B., "Some Computational Insights on the Optimal Bus Transit Route Network Design Problem," Special Transit Issue of the *Journal of the Transportation Research Forum*, Fargo, ND, October 2008.
- Cheu, Ruey, H. Liu, R. Machemehl, and L.D. Galicia, "Bus Rapid Transit Features and Deployment Phases for U.S. Cities," *Journal of Public Transportation*, Tampa, FL, Spring 2009.
- Fan, Wei and R. Machemehl, "Do Transit Users Just Wait for Buses or Wait with Strategies?" *Transportation Research Record, No. 2111*, Transportation Research Board, Washington, D.C., 2009, pp. 169-176.
- Wang, Feng, R. Machemehl, and E. Popova, "Towards Monte Carlo Simulation Based Mechanistic-Empirical Prediction of Asphalt Pavement Performance." ASCE, *Journal of Transportation Engineering*, July 2010
- Duthie, J., J. Brady, A. Mills, and R. Machemehl, "Effects of On-Street Bicycle Facility Configuration on Bicyclist and Motorist Behavior," *Transportation Research Record, No. 2190*, Transportation Research Board, Washington, D.C., pp. 37-44, 2010.
- Haire, A. R. and R. Machemehl, "Regional and Modal Variability in Effects of Gasoline Prices on U.S. Transit Ridership," *Transportation Research Record, No. 2144*, Transportation Research Board, Washington, D.C., pp. 20-27, 2010.
- Brady, John, Jeff Loskorn, Alison Mills, Jennifer Duthie, and Randy Machemehl, "Effects of Shared Lane Markings on Bicyclist and Motorist Behavior." *Journal of Transportation of the Institute of Transportation Engineers*, No. 1108, ITE, pp. 33-38, 2011.
- Fan, W., R. Machemehl, and K. Kortum, "Equipment Replacement Optimization: Solution Methodology, Statistical Data Analysis, and Cost Forecasting," *Transportation Research Record Number 2220*, Transportation Research Board, Washington, DC, pp. 88-98, August 2011.
- Dawson III, Eugene H., Hongchao Liu, Hao Xu, Ruey Long Cheu, and Randy B. Machemehl, "Feasibility of Converting Two-Way Left-Turn Lane into Bus Rapid Transit Lane," *Transportation Research Record: Journal of The Transportation Research Board, No. 2218*, Transportation Research Board of the National Academies, Washington, D.C., pp. 39-47, 2011.
- Wei (David) Fan and Randy B. Machemehl. "Bi-Level Optimization Model for Public Transportation Network Redesign Problem: Accounting for Equity Issues." *Transportation Research Record*, No. 2263, Transportation Research Board, Washington, D.C., pp. 151-162, 2011.
- Mills, Alison, Jennifer Duthie, and Randy B. Machemehl. "Entry-Lane Capacity Analysis of Roundabouts in Texas Using VISSIM, SIDRA, and the Highway Capacity Manual." *Transportation Research Record*, Transportation Research Board, Washington, D.C., 2012.
- Fan, Wei, Randy B. Machemehl, and Mason Gemar. "Optimization of Equipment Replacement: Dynamic Programming-Based Optimization." *Transportation Research Record No. 2292*, Journal of the Transportation Research Board, Washington, D.C., pp. 160-170, 2012.
- Fan, Wei (David) and Randy B. Machemehl. "Some Computational Insights on the Optimal Bus Transit Route Network Design Problem," *Journal of the Transportation Research Forum*, Vol. 47, Issue 3, 2012.
- Fan, Wei (David), Randy B. Machemehl, and Mason D. Gemar. "Optimization of Equipment Replacement." *Transportation Research Record: Journal of the Transportation Research Board*, Volume 2292, Issue 1, Pages 160-170, 2013.

- Loskorn, Jeff, Alison Mills, John Brady, Jennifer Duthie, and Randy Machemehl. "Effects of Bicycle Boxes on Bicyclist and Motorist Behavior at Intersections in Austin, Texas," *ASCE Journal of Transportation Engineering*, October 2013.
- Fan, W., Gemar, M., and Machemehl, R., "Equipment Replacement Decision Making: Challenges and Opportunities," *Journal of the Transportation Research Forum*, Volume 52, No. 3, pp. 79-90, 2013.
- Fan, Wei, Mason Gemar, Randy Machemehl. "A Stochastic Dynamic Programming Approach for the Equipment Replacement Optimization under Uncertainty" *Journal of Transportation Systems Engineering and Information Technology*, Volume 14, Issue 3, pp. 76-84, Elsevier, 2014.
- Gemar, Mason, Jack Bringardner, Stephen Boyles, and Randy Machemehl, "Subnetwork Analysis for Dynamic Traffic Assignment Models: A Strategy for Estimating Demand at Subnetwork Boundaries." *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 24466, Issue 1, pp. 153-161, December 2014.
- Yu, Yao, Randy Machemehl, and Chi Xie. "Demand-Responsive Transit Circulator Service Network Design." *Transportation Research Part E: Logistics and Transportation*, Vol. 76, pp. 160-175, 2015.
- Selman, Kelly, Nabeel Khwaja, Randy Machemehl, Moggan Motamed, and Clair Lavaye, "An Evaluation of a Development Program for Transportation Engineers." Submitted for publication in *Transportation Research Board*, Paper #16-4075, July 2015.

### Refereed Conference Proceedings

- Machemehl, Randy B., Clyde E. Lee, and C. Michael Walton, "Acquiring Traffic Data By In-Motion Weighing," *Proceedings, American Society of Civil Engineers Transportation Engineering Journal*, No. 11716, pp. 681-689, November 1975.
- Machemehl, Randy B. and C. Michael Walton, "Multi-Disciplinary Transportation Programs," *Proceedings, Conference on Civil Engineering Education*, Vol. I, American Society of Civil Engineers, April 1979.
- Machemehl, Randy B. and J. Gaynor, "A User Evaluation of Bikeways in Austin, TX," *Proceedings, The International Conference on the Planning, Design, and Implementation of Bicycle, Pedestrian, and Moped Facilities*, Metropolitan Association of Urban Designers and Environmental Planners, San Diego, CA, July 1979.
- Machemehl, Randy B. and C. Michael Walton, "Continuous Two-Way Left-Turn Median Lanes: An Effective TSM Option," *Compendium of Technical Papers 1979, Institute of Transportation Engineers*, Washington, DC, September 1979.
- Machemehl, Randy B. and Thomas W. Kennedy, "The Asphaltene Settling Test: A Basic Evaluation of Test Procedures," *Proceedings, The Association of Asphalt Paving Technologists*, August 1980.
- Machemehl, Randy B. and H.J. Lin, "Guidelines for Implementation of Left Turn Lanes and Signal Phases," *Compendium of Technical Papers, 53rd Annual Institute of Transportation Engineers Meeting*, Washington, DC, August 1982.
- Machemehl, Randy B., "Simulation for At-Grade Intersections and Interchanges," VII Panamerican Congress on Traffic and Transportation Engineering, Caracas, Venezuela, September 1992.
- Machemehl, Randy B., "An Evaluation of A Simple Computer-Aided Instruction System for Undergraduate Civil Engineering," *Proceedings, The Second Regional Conference on University Teaching at the University of New Mexico*, Las Cruces, NM, January 9-10, 1986.
- Machemehl, Randy B., "A Computer-Aided Instructor System for Undergraduate Civil Engineering," *Proceedings, ASEE Annual Conference*, June 1986.
- Machemehl, Randy B., "Animated Screen Graphics for Intersection Traffic Simulation," *Proceedings at the IBM Information Systems (ACIS) University Conference*, pp. 452-462, Boston, MA, June 27 - July 1, 1987.
- Machemehl, Randy B. and Clyde E. Lee, "TEXAS Model for Intersection Traffic: A User-Friendly Microcomputer Version with Animated Graphics Screen Display," *Proceedings, The 69th Annual*

- Kansas Transportation Engineering Conference*, Kansas State University, Manhattan, KS, March 25-26, 1987.
- Machemehl, R.B. and Clyde E. Lee, "Animated Screen Graphics of Intersection Traffic Simulation," *Proceedings, The IBM ACIS University Conference*, pp. 452-462, Boston, MA, June 27 - July 1, 1987.
- Machemehl, Randy B., "The TEXAS Traffic Simulation Package: A Multipurpose Transportation Engineering Tool," *Proceedings, Microcomputers in Civil Engineering*, American Society of Civil Engineers, November 1989.
- Machemehl, Randy B., "The TEXAS Traffic Simulation Package: A Multipurpose Transportation Engineering Tool," *Proceedings, The 7th National Conference on Microcomputers in Civil Engineering*, American Society of Civil Engineers, Orlando, FL, November 1989.
- Machemehl, Randy B. and S. Modur, "Criteria for the Selection of a Left-Turn Median Design," *1989 Compendium of Technical Papers*, Institute of Transportation Engineers, pp. 41-45, Washington, DC, 1989.
- Machemehl, Randy B., "A Simulation Based Analysis and Design Procedure for Auxiliary Lanes at Urban Intersections," *1990 Compendium of Technical Papers*, San Diego, CA, Institute of Transportation Engineers, 1990.
- Machemehl, Randy B., "Simulation for At-Grade Intersections and Interchanges," VII Panamerican Congress on Traffic and Transportation Engineering, Caracas, Venezuela, September 1992.
- Otis, Stephanie, Randy B. Machemehl, and Hani S. Mahmassani, "Predicting Pedestrian Volumes Based Upon Land Use: A Methodology," *A Compendium of Papers of the Fifth National Conference on Transportation Planning Methods Applications*, Vol. 1, Seattle, WA, April 1995.
- Kou, Cheng-Chen and Randy B. Machemehl, "Probabilistic Measurement Error in Vehicle Speed Estimation through Video Images." *Proceedings of the Canadian Society for Civil Engineering 1st Transportation Specialty Conference*, Vol. 11a, pp. 291-302, Edmonton, Alberta, Canada, May 29- June 1, 1996.
- Kou, Cheng-Chen and Randy B. Machemehl, "Modeling Vehicle Acceleration-Deceleration Behavior During Merge Maneuvers." *Proceedings of Canadian Society for Civil Engineering 1st Transportation Specialty Conference*, Vol. 11a, pp. 267-279, Edmonton, Alberta, Canada, May 29- June 1, 1996.
- Machemehl, Randy B. and Stephanie Otis, "Predicting Pedestrian Safety at Suburban Signalized Intersections," *Institute of Transportation Engineers 1996 Compendium of Technical Papers*, September 1996.
- Machemehl, Randy B. and Tsai-Yun Liao, "Optimal Traffic Signal Strategy for Fuel Consumption and Emissions Control at Signalized Intersections," *Proceedings of the 24th PTRC Conference*, United Kingdom, September 1996.
- Lee, Chungwon and Randy B. Machemehl, "Multiobjective Optimization of Equilibrium Network Signal Setting and Pricing," *Proceedings of the 38th Transportation Research Forum Annual Meeting*, Vol. 2, pp. 408-423, San Antonio, TX, October 1996.
- Kou, Cheng-Chen and Randy B. Machemehl, "Super Street Long Term Improvement Schemes and Capacity Analysis: A Case Study." *Proceedings of the 38th Transportation Research Forum*. Vol. 2, pp. 395-407, San Antonio, TX, October 1996.
- Kou, Cheng-Chen and Randy B. Machemehl, "Probabilistic Aspect of Data Quality in Speed Estimation Through Video Images Technique." *Proceedings of the 9th Conference on the Scientific Use of Statistical Software*. Heidelberg, Germany, March 1997.
- Lee, Chungwon and Randy B. Machemehl, "Global, Local and Interactive Searches to the Equilibrium Network Traffic Signal Setting Problem," *Proceedings of the 39th Transportation Research Forum*, Montreal, Canada, October 16-18 1997.
- Lee, Chungwon and Randy B. Machemehl, "Combining Route Choice and Signal Control: Algorithms, Numerical Result and ITS Implication to Advanced Traffic Management Systems," *Proceedings of the 5th World Congress on Intelligent Transport Systems*, Seoul, Korea, October 1998.
- Lee, Chungwon and Randy B. Machemehl, "Multiobjective Investigation of Network Marginal Pricing and Equilibrium Network Signal Setting," *Proceedings of the International Conference on Transportation Into the Next Millennium*, Singapore, September 1998.

- Ahn, Gye-Heong and Randy B. Machemehl, "Methodology for Traffic Signal Timing in Oversaturated One-Way Arterial Networks," *Proceedings of the 26th Annual CSCE Conference*, Halifax, Nova Scotia, Canada, June 1998.
- Liao, Tsai-Yun and Randy B. Machemehl, "Aggregate Fuel Consumption Model at Signalized Intersections," *Proceedings of the 26th Annual CSCE Conference*, Halifax, Nova Scotia, Canada, June 1998.
- Liao, Tsai-Yun and Randy B. Machemehl, "Urban Network Vehicle Speed, Acceleration, and Fuel Consumption Profile Models," *Proceedings of the 26th Annual CSCE Conference*, Halifax, Nova Scotia, Canada, June 1998.
- Otis, Stephanie C. and Randy B. Machemehl, "Assessment Analysis of Pedestrian Signalization in Suburban Areas," *Proceedings of the 26th Annual CSCE Conference*, Halifax, Nova Scotia, Canada, June 1998.
- Otis, Stephanie C. and Randy B. Machemehl, "Planning for Pedestrian Signalization Based on Land Use," *Proceedings of the ASCE Conference on Transportation, Land Use, and Air Quality*, Portland, OR, May 1998.
- Lee, Chungwon and Randy B. Machemehl, "Combining Traffic Signal Control and Traffic Assignment: Comparison of Global, Local, and Iterative Search Algorithms," *1999 CSCE Annual Conference Proceedings*, Regina, Saskatchewan, Canada, June 1999.
- Lee, Chungwon and Randy B. Machemehl, "Genetic Algorithm, Local, and Iterative Searches for Combining Traffic Assignment and Signal Control Networks," *Proceedings of the 1998 International Conference on Traffic and Transportation Studies*, Beijing, China, September 1998.
- Hunter, Michael and Randy B. Machemehl, "An Operational Evaluation of Freeway Ramps," *2000 CSCE Annual Conference Proceedings*, London, Ontario, Canada, June 2000.
- Wang, Feng, Randy B. Machemehl, Robert F. Inman, and Zhanmin Zhang, "Synthesis Study of Current Truck Configuration Used in Texas," *Proceedings of the Clemson University 2001 Conference for the Domestic & International Tire Industry-Suppliers-Allied Industries*, Hilton Head, SC, March 2001.
- Wang, F. and Randy B. Machemehl, "A Survey Study of Current Pavement-related Truck Characteristics in Texas," *Proceedings of the 81<sup>st</sup> Transportation Research Board Meeting*, Washington, DC, January 2002.
- Tsyganov, A. and Randy B. Machemehl, "Impacts of Freeway Accidents on Traffic Operations," *Proceedings of the 30<sup>th</sup> Annual Canadian Society of Civil Engineering (CSCE) Conference*, Montreal, Canada, June 2002.
- Fan, W. and Randy B. Machemehl, "Characterizing Bus Transit Passenger Waiting Times," *Proceedings of the 30<sup>th</sup> Annual Canadian Society of Civil Engineering (CSCE) Conference*, Montreal, Canada, June 2002.
- Wang, F. and Randy B. Machemehl, "A Survey Study of Current Pavement-Related Truck Characteristics in Texas," *Proceedings of the 30<sup>th</sup> Annual Canadian Society of Civil Engineering (CSCE) Conference*, Montreal, Canada, June 2002.
- Wang, F. and Randy B. Machemehl, "Study of Truck Tire Pressure in Texas," *Proceedings of the ASCE 7<sup>th</sup> Applications of Advanced Technology in Transportation (AATT) Conference*, Cambridge, MA, August 5-7 2002.
- Kockelman, K., R.B. Machemehl, A. Overman, J. Sesker, M. Madi, J. Peterman, and S. Handy, "Frontage Roads: An Assessment of Legal Issues, Design Decisions, Costs, Operations and Land-Development Differences," *5<sup>th</sup> National Conference on Access Management Meeting Compendium*, Austin, TX, June 23-26, 2002.
- Wang, F. and R. Machemehl, "Decision Making Problem for Managing Pavement Maintenance and Rehabilitation Projects," *Proceedings of the 82nd Transportation Research Board Meeting*, Washington, DC, January 2003.
- Wang, F. and R. Machemehl, "A Survey Study of Texas Truck Tire Pressures," *Proceedings of the 82nd Transportation Research Board Meeting*, Washington, DC, January 2003.
- Tsyganov, A. and R. Machemehl, "Samples of Driver Behavior and Reactions during Different Levels of Information Loading," *Proceedings of the 31st Annual Conference – Canadian Society of Civil Engineering*, Moncton, New Brunswick, Canada, June 2003.

- Machemehl, Randy B. and Wei Fan, "Optimal Bus Transit Route Network Design Problem: Algorithms, Implementations and Numerical Results," *Proceedings of the INFORMS 2003 Annual Meeting*, Atlanta, GA, October 2003.
- Machemehl, Randy B. and Michael Hunter, "Development of a Flexible, Open Architecture, Transportation Simulation," *Proceedings of the Winter Simulation Conference*, New Orleans, LA, December 2003.
- Machemehl, Randy B. and Feng Wang, "Analytical Verification of Effects of Tire Pressure on Pavement with Data from Washington State Department of Transportation," *Proceedings of the 83<sup>rd</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2004.
- Machemehl, Randy B., Alexei Tsyganov, and Katherine Liapi, "Urban Arterial Work Zone Traffic Control Concepts," *Proceedings of the Second Gulf Conference on Roads, Abu Dhabi, United Arab Emirates*, March 2004.
- Machemehl, Randy B. and Alexei Tsyganov, "Measuring Driver Responses to the Driving Environment," *Proceedings of the Second Gulf Conference on Roads, Abu Dhabi, United Arab Emirates*, March 2004.
- Machemehl, Randy B. and Wei Fan, "A Multi-stage Monte Carlo Sampling Based Stochastic Programming Model for the Dynamic Vehicle Allocation Problem," *Proceedings of the Annual 2004 Transportation Research Forum*, Evanston, IL, March 2004.
- Machemehl, Randy B. and Feng Wang, "Understanding the Tire-Pavement Interaction Process," *Proceedings of the Clemson University – The Tire Industry Conference*, Hilton Head, S.C., March 2004.
- Prozzi, J., T. DeFries, R. Machemehl, R. Matthews, R. Baker, and D. Lewis, "The Texas Diesel Fuels Project, Part 3: Coast-Effectiveness Analyses for an Emulsified Diesel Fuel for Highway Construction Vehicle Fleets," *Proceedings of the 2004 SAE World Congress*, Detroit, MI, March 2004.
- Machemehl, Randy B. and Michael Hunter, "Initial Development Object-Oriented, Open Architecture Transportation Simulation," *Proceedings of the Jordan International Conference on Sustainable Development of Transportation Systems*, Amman, Jordan, April 2004.
- Machemehl, Randy B. and Michael Hunter, "Initial Development of an Object-oriented, Open Architecture, Transportation Simulation," *Proceedings of the 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Saskatoon, Saskatchewan, Canada, June 2004.
- Machemehl, Randy B., Alexei Tsyganov, and Katherine Liapi, "Evaluation of Traffic Control Improvement Solutions for Urban Work Zones," *Proceedings of the 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Saskatoon, Saskatchewan, Canada, June 2004.
- Machemehl, Randy B. and Alexei Tsyganov, "Assessing Safety During Highway Design," *Proceedings of the 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Saskatoon, Saskatchewan, Canada, June 2004.
- Machemehl, Randy B. and Feng Wang, "Analytical Study of the Effects of Tire Pressure on Flexible Pavement," *Proceedings of the 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Saskatoon, Saskatchewan, Canada, June 2004.
- Machemehl, Randy B. and Wei Fan, "A Genetic Algorithm Approach for the Transit Route Network," *Proceedings of the 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Saskatoon, Saskatchewan, Canada, June 2004.
- Machemehl, Randy B. and Wei Fan, "A Tabu Search Based Heuristic Method for the Transit Route Network Design Problem," *Proceedings of the 2004 Conference on Computer-Aided Scheduling of Public Transport (CASPT)*, San Diego, CA, August 2004.
- Wang, F., R. Machemehl, and J. Prozzi, "Analytical Study of Effects of Truck Tire Pressure on Pavements Using Measured Tire-Pavement Contact Stress Data," *Proceedings of the 84<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2005.
- Tsyganov, A. and R. Machemehl, "Analysis of Accident Statistics on Arterial Street Work Zones," *Proceedings of the 84<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2005.

- Tsyganov, A. and R. Machemehl, "Quantitative Description of Informational Dimensions of Urban Freeways," *Proceedings of the 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Toronto, Ontario, Canada, June 2005.
- Tsyganov, A. and R. Machemehl, "An Examination of the Relationship Between Accidents and Urban Freeways Information Load," *Proceedings of the 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Toronto, Ontario, Canada, June 2005.
- Tsyganov, A. and R. Machemehl, "Investigation of Driver Behavior and Reactions in Traffic Operation and Safety Research," *Proceedings of the 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Toronto, Ontario, Canada, June 2005.
- Qatan, A., A. Tsyganov, and R. Machemehl, "An Examination of the Relationship Between Accident and Urban Freeways Information Load," *Proceedings of the 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Toronto, Ontario, Canada, June 2005.
- Wang, F. and R. Machemehl, "Analysis of Effects of Truck Tire Pressure on Flexible Pavements," *Proceedings of the 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Toronto, Ontario, Canada, June 2005.
- Fan, Wei and R. Machemehl, "Hybrid Tabu Search Strategies for Urban Transit Networks," *Proceedings of the 2005 INFORMS Annual Meeting*, San Francisco, CA, November 2005.
- Tsyganov, A., A. Qatan, and R. Machemehl, "Analysis of Accident Statistics on Urban Arterial Street Work Zones," *Proceedings of the 12th World Congress on Intelligent Transport Systems*, San Francisco, CA, November 2005.
- Wang, F. and R. Machemehl, "Mechanistic-Empirical Study of Effects of Truck Tire Pressure on Pavements Using Measured Tire-Pavement Contact Stress Data," *Proceedings of the 85<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2006.
- Wang, F. and R. Machemehl, "Development of Quick Solutions for Prediction of Critical Asphalt Pavement Responses due to Measured Tire-Pavement Contact Stresses," *Proceedings of the 85<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2006.
- Lownes, N.E. and R. Machemehl, "VISSIM: A Multi-Parameter Sensitivity Analysis," *Proceedings of the 2006 Winter Simulation Conference*, Monterey, CA, December 2006.
- Haire, Ashley R. and R. Machemehl, "The Impact of Rising Fuel Prices on US Transit Ridership," *Proceedings of the 86<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2007.
- Machemehl, Randy B., "Travel Demand Management: Partial Solution for Urban Traffic Congestion," *Proceedings of the 3rd Jordan International Transportation Conference*, Amman, Jordan, March 2007.
- Suliman, Mohd and R. Machemehl, "Characterization of Jordan Mass Transit System Using Speed History," *Proceedings of the 3rd Jordan International Transportation Conference*, Amman, Jordan, March 2007.
- Haire, Ashley R. and R. Machemehl, "The Impact of Rising Fuel Prices on US Transit Ridership," *Proceedings of the 8<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Yellowknife, Northwest Territories, Canada, June 2007.
- Hlavacek, Ian, M. Vitek, J. Carrizales, and R. Machemehl, "Considerations for Choosing HOT Lane Delineation Techniques," *Proceedings of the 8<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Yellowknife, Northwest Territories, Canada, June 2007.
- Lownes, N.E. and R. Machemehl, "Commuter Rail Circulator Route Network Design and Its Implications for Transit Accessibility," *Proceedings of the 87<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2008.
- Fan, Wei, N. E. Lownes, and R. Machemehl, "Carsharing: Dynamic Vehicle Allocation Decision-Making Problem," *Proceedings of the 87<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2008.
- Fan, Wei, and R. Machemehl, "A Tabu Search Based Heuristic Method for the Transit Route Network Design Problem," *Proceedings of the 87<sup>th</sup> Annual Transportation Research Board Meeting*, Washington, D.C., January 2008.
- Suliman, Mohd and Randy Machemehl, "A Quantitative Characterization of Mass Transit in Jordan,

- Proceedings of the Transportation Research Forum*, March 2008.
- Haire, Ashley and Randy Machemehl, "Incorporation of Fuel Price Impacts Into Short-Term Transit Ridership Forecasts," *Proceedings of the 10<sup>th</sup> International Conference on Application of Advanced Technologies in Transportation*, Athens, Greece, May 2008.
- Torrance, Kristen, Ian Hallett, and Randy Machemehl, "Operational Impacts of Bicycling Adjacent to On-Street Parking," *Proceedings of the 9<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering*, Quebec, Canada, June 2008.
- Machemehl, R., "Travel Demand Management: Partial Solution for Urban Traffic Congestion," *Proceedings of the 8th International Congress on Advances in Civil Engineering*, Cypress, Greece, September 2008
- Fan, W. and R.B. Machemehl, "Do Transit Users Just Wait or Wait with Strategies for the Bus? Some Numerical Results You Should See as a Transit Planner." *Transportation Research Board 88<sup>th</sup> Annual Meeting Compendium of Papers DVD*, National Research Council, Washington D.C., January 2009
- Tsyganov, A.R., R.B. Machemehl, and Nicholas Warrenchuk, "Driver Performance and Safety Effects of Edge Lines on Rural Two-Lane Highways." *Transportation Research Board 88<sup>th</sup> Annual Meeting Compendium of Papers DVD*, National Research Council, Washington D.C., January 2009
- Tsyganov, A.R., and R.B. Machemehl, "Driver Responses at Different Information Loads on Urban Freeways." *Transportation Research Board 88<sup>th</sup> Annual Meeting Compendium of Papers DVD*, National Research Council, Washington D.C., January 2009
- Haire, A. and R. Machemehl, "Operational Cost Efficiency of Bus versus Heavy Rail: A Temporal and Regional Analysis," *Proceedings of the 50<sup>th</sup> Annual Transportation Research Forum*, Portland, OR, March 2009.
- Haire, A. and R. Machemehl, "Variations in the Relationship between Fuel Price and Bus Ridership among U.S. Transit Systems," *Proceedings of the 2009 Annual Conference of the Canadian Society for Civil Engineering*, St. John's, NL, May 2009.
- Fan, W. and R. Machemehl, "A Bi-Level Formulation for the Optimal Transit Network Design Problem," *EURO XXIII Conference Proceedings*, Bonn, Germany, July 2009.
- Haire, A. and R. Machemehl, "Operational Cost Efficiency of Bus versus Heavy Rail: A Temporal and Regional Analysis," *Proceedings of the 50<sup>th</sup> Annual Transportation Research Forum*, Portland, OR, March 2010.
- Pappas, E. and R. Machemehl, "Predicting Incremental Transit Patronage for Bus-On-Shoulder Systems," *Proceedings of the 2010 Annual Conference of the Canadian Society for Civil Engineering*, Winnipeg, Manitoba, Canada, June 2010.
- Duthie, J., J. Brady, A. Mills, J. Loskorn, and R. Machemehl, "Effects of Shared Lane Markings on Bicyclist and Motorist Behavior Along Multi-Lane Facilities," *Proceedings of the 2010 Annual Conference of the Canadian Society for Civil Engineering*, Winnipeg, Manitoba, Canada, June 2010.
- Liu, H., T. Dawson, K. Cheu, and R. Machemehl, "Assessing Feasibility of Converting Two-Way Left-Turn Lane into Bus Rapid Transit Lane," *Proceedings of the 90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.
- Fan, W. and R. Machemehl, "Bilevel Optimization Model for Public Transportation Network Redesign Problem: Accounting for Equity Issues" *Proceedings of the 90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.
- Fan, W., R. Machemehl, and K. Kortum, "Equipment Replacement Optimization, Part 1: Solution Methodology, Statistical Data Analysis, and Cost Forecasting," *Proceedings of the 90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.
- Brady, J., J. Loskorn, A. Mills, J. Duthie, and R. Machemehl, "Operational and Safety Implications of Three Experimental Bicycle Safety Devices in Austin, Texas," *Proceedings of the 90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.
- Loskorn, J., A. Mills, J. Brady, J. Duthie, and R. Machemehl, "Effects of Bicycle Boxes on Bicyclist and Motorist Behavior at Intersections in Austin, Texas," *Proceedings of the 90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011.

- Mills, Alison, Jennifer Duthie, and Randy B. Machemehl, "Entry Lane Capacity Analysis of Roundabouts in Texas Using VISSIM, SIDRA, and the Highway Capacity Manual." *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Machemehl, Randy B. and Mason Gemar, "Equipment Replacement Optimization, Part II: Dynamic Programming-Based Optimization," *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Machemehl, Randy B., Mason Gemar, and Leonard Brown, "Stochastic Dynamic Programming Approach for Equipment Replacement Optimization with Probabilistic Vehicle Utilization," *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Motamed, Moggan, Randy Machemehl, Shervin Babaei, and Ahmad A. Tavakoly, "Comparison of Regression and Artificial Neural Network Models of Bus Dwell and Passenger Activity Times (Case Study: Tehran)," *Proceedings of the 9<sup>th</sup> International Transportation Specialty Conference of the Canadian Society of Civil Engineers*, Edmonton, Alberta, Canada, June 2012.
- Fan, Wei, Randy B. Machemehl, Mason Gemar, and Leonard Brown. "Stochastic Dynamic Programming Approach for Equipment Replacement Optimization with Probabilistic Vehicle Utilization." *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2012.
- Fan, Wei, Randy B. Machemehl, and Mason Gemar. "Equipment Replacement Optimization, Part II. Dynamic Programming-Based Optimization." *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2012.
- Wang, Li, Sami Kolahdoozan, Dan Seedah, Fernanda Leite, and Randy B. Machemehl. "Enhanced Worker Safety in Very Short Duration Work Zone Operations: State of Practice and Recommendations." *Proceedings of the 91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2012.
- Yu, Yao and Randy Machemehl, "Real Time Circulator Route Design Based on Destinations of Commuter Rail Passengers Using an Adaptive Tabu Search Algorithm," *Proceedings of the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2013.
- Wang, Li, Sami Kolahdoozan, Dan Seedah, Fernanda Leite, and Randy Machemehl, "Risk Management Process for Very-Short-Duration Work Zone Operations," *Proceedings of the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2013.
- Fan, Wei (David), Mason Gemar, and Randy Machemehl, "Equipment Replacement Decision Making: Challenges and Opportunities," *Proceedings of the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2013.
- Melson, Christopher, Stephen Boyles, and Randy Machemehl, "Modeling the Traffic Impacts of Transit Facilities Using Dynamic Traffic Assignment," *Proceedings of the 92<sup>nd</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2013.
- Motamed, Moggan and Randy Machemehl, "Traveler Path Choice During Freeway Closure," *Proceedings of the 54<sup>th</sup> Annual Transportation Research Forum*, Annapolis, MD, 2013.
- Motamed, Moggan and Randy Machemehl, "Route Switching Behavior Among Austin Commuters," *Proceedings of the 2013 General Conference of the Canadian Society of Civil Engineers*, Montreal, Canada, June 2013.
- Machemehl, Randy, Kara Kockelman, Donna Chen, Bridget Bienkowski, Lisa Smith, and Zhanmin Zhang, "A Methodology for Implementing Demand Management Concepts in Urban Areas," *Proceedings of the 2013 General Conference of the Canadian Society of Civil Engineers*, Montreal, Canada, June 2013.
- Motamed, Moggan. "Fuel Conservation Through Freeway Work Zone Traffic Diversion Planning." *Proceedings of the 2nd ASCE T&DI Green Streets, Highways and Development Conference*, November 2013.
- Bringardner, Jack, Mason Gemar, Stephen Boyles, and Randy Machemehl, "Establishing the Variation of Dynamic Traffic Assignment Results Using Subnetwork Origin-Destination Matrices," *Proceedings of the 93<sup>rd</sup> Annual Meeting of the Transportation Research Record*, Washington, D.C., 2014.



- Bringardner, J., Gemar, M., Ruiz-Juri, N., Boyles, S., and Machemehl, R. "Subnetwork Analysis for Dynamic Traffic Assignment Models: Impacts of Subnetwork Size and Stochastic Model Components." DTA2014 Conference.
- Gemar, M., Bringardner, J., Boyles, S., and Machemehl, R. "A Subnetwork Analysis for Dynamic Traffic Assignment Models: Strategy for Estimating Demand at Subnetwork Boundaries," *Proceedings of the 93<sup>rd</sup> Annual Meeting of the Transportation Research Board*, Washington, D.C., 2014.
- Yu, Y., and Machemehl, R. "Real Time Optimization of Passenger Collection for Commuter Rail Systems." Transportation Specialty Conference at the Annual Meeting of the Canadian Society of Civil Engineers, July 2014.
- Khan, Mubassira, Randy Machemehl, and Zhanmin Zhang. "The Impact of Land-Use Variables on Free-floating Carsharing Vehicle Rental Choice and Parking Duration." *Presented at the 2014 Workshops on Big Data and Urban Informatics at the University of Illinois, Chicago*. July 2014.
- Khan, Mubassira and Randy Machemehl. "A Truck Trip Generation Model for Williamson County, Texas: Survey Analysis." *Proceedings of the 94<sup>th</sup> Annual Meeting of the Transportation Research Board*, January 2015.
- Motamed, Moggan and Randy Machemehl. "Detecting Peak-Hour Freeway Incidents Using Machine Learning." *Proceedings of the 94<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, D.C.*, January 2015.
- Khan, Mubassira and Randy Machemehl, "A Truck Trip Generation Model for Williamson County, Texas: Survey Analysis," *Proceedings of the 2015 Meeting of the Canadian Society of Civil Engineers*, Regina, Saskatchewan, Canada, May 2015.
- Motamed, Moggan and Randy Machemehl, "Effects of Traffic State on Freeway Incident Duration," *Proceedings of the 2015 Meeting of the Canadian Society of Civil Engineers*, Regina, Saskatchewan, Canada, May 2015.
- Motamed, Moggan and Randy Machemehl. "Generalized Real-Time Freeway Incident Detection Model." *Proceedings of Euro Working Group in Transportation*, Delft, Netherlands, July 2015.

## Technical Reports

- Machemehl, Randy B. and Clyde E. Lee, "Speed-Zoning to Reduce Dynamic Loads on the Port Isabel Causeway," Center for Highway Research, UT Austin, March 1974.
- Machemehl, Randy B. and Clyde E. Lee, "Dynamic Traffic Loading of Pavements," Research Report No. 160-1F, Center for Highway Research, UT Austin, December 1974.
- "Colorado Springs Transit Development Program," Wilbur Smith and Associates, Houston, Texas, 1975.
- "Houston-Galveston Regional Transit Development Program," Wilbur Smith and Associates, Houston, Texas, 1975.
- "Galveston Transit Development Program," Wilbur Smith and Associates, Houston, Texas, 1975.
- Machemehl, Randy B., Clyde E. Lee, and Walton, C. Michael, "Truck Weight Surveys By In-Motion Weighing," Research Report No. 181-1F, Center for Highway Research, UT Austin, September 1975.
- Machemehl, Randy B., Clyde E. Lee, "Dynamic Vehicular Loading of the Hubbard Creek Reservoir Bridge, 1975," Center for Highway Research, Texas Highway Department, UT Austin, 1975.
- "Stevens Point Transit Development Program," Wilbur Smith and Associates, Houston, TX, 1976.
- "USA.A. Access Implementation Study," Wilbur Smith and Associates, Houston, TX, 1976.
- "Beaumont Transit Improvement Program," Wilbur Smith and Associates, Houston, TX, 1976.
- "Manitowoc - Two Rivers Transit Development Program," Wilbur Smith and Associates, Houston, TX, 1976.
- "Corpus Christi Transit Development Program," Wilbur Smith and Associates, Houston, TX, 1976.
- "Janesville Transit Development Program," Wilbur Smith and Associates, Houston, TX, 1976.
- "Pasadena Traffic Safety Study," Wilbur Smith and Associates, Houston, TX, 1976.
- "Transit Implementation Document - Garland Texas," Wilbur Smith and Associates, Houston, TX, 1977.
- "Laredo Transit Improvement Program," Wilbur Smith and Associates, Houston, TX, 1977.
- "Fort Hood Traffic Safety Study," Wilbur Smith and Associates, Houston, TX, 1977.

- "El Paso Short Range Transit Study," Wilbur Smith and Associates, Houston, TX, 1977.
- "Traffic Access and Parking Study, Gulfgate Shopping Center," Wilbur Smith and Associates, Houston, TX, 1977.
- Machemehl, Randy B., Clyde E. Lee, Y.C. Hu, and T.L. Wu, "Roughness at the Pavement-Bridge Interface," Center for Highway Research, Research Report 213-1F, UT Austin, 1979.
- Machemehl, R.B., D. Eaton, et al., "Location Techniques for Emergency Medical Service Vehicles," Volumes I-IV, Policy Report No. 34, Lyndon B. Johnson School for Public Affairs, UT Austin, 1979.
- Machemehl, Randy B., Clyde E. Lee, and H.J. Lin, "Texas Traffic Data Acquisition Program," Research Report No. 245-1F, Center for Transportation Research, UT Austin, February 1980.
- Machemehl, Randy B. and Clyde E. Lee, "Operation of the Dynamic Arterial Responsive Traffic System (DARTS)," Research Report No. 243-1F, Center for Transportation Research, UT Austin, August 1981.
- Zaniewski, J. P., B.C. Butler, G. Cunningham, G.E. Elkins, M.S. Paggi, and Randy B. Machemehl, "Vehicle Operating Costs, Fuel Consumption, and Pavement Type and Condition Factors," Interim report prepared for the Federal Highway Administration, FHWA/PL/82, Texas Research Development Foundation, Austin, TX, April 1982.
- Machemehl, Randy B. and H.J. Lin, "Guidelines for Left Turn Treatments at Signalized Intersections," Research Report No. 258-1, Center for Transportation Research, UT Austin, August 1982.
- Lee, F. P., Clyde E. Lee, Randy B. Machemehl, and Charles R. Copeland, Jr., "Simulation of Vehicle Emissions at Intersections," Research Report No. 250-1, Center for Transportation Research, UT Austin, 1982.
- Machemehl, Randy B., C.S. Wu, and Clyde E. Lee, "Detector Configuration and Location at Signalized Intersections," Research Report No. 259-1F, Center for Transportation Research, UT Austin, March 1983.
- Machemehl, Randy B. and Clyde E. Lee, "Adding Signals to Coordinated Signal Systems," Research Report No. 260-1F, Center for Transportation Research, UT Austin, August 1983.
- Machemehl, Randy B. and A.M. Mechler, "A Comparative Analysis of Left-Turn Phase Sequencing," Research Report No. 258-2, Center for Transportation Research, UT Austin, November 1983.
- Machemehl, Randy B. and A.M. Mechler, "Procedural Guide for Left-Turn Analysis," Research Report No. 258-3F, Center for Transportation Research, UT Austin, November 1983.
- Machemehl, Randy B., H.J. Lin, Clyde E. Lee, and Robert Herman, "Guidelines for Use of Left-Turn Lanes and Signal Phases," Research Report No. 258-1, Center for Transportation Research, UT Austin, January 1984.
- Machemehl, Randy B. and F.P. Lee, "Prediction of Vehicular Emissions at Intersections," Research Report No. 250-1F, Center for Transportation Research, UT Austin, January 1984.
- McGennis, Robert B., Thomas W. Kennedy, and Randy B. Machemehl, "Stripping and Moisture Damage in Asphalt Mixtures," Research Report No. 253-1, Center for Transportation Research, UT Austin, September 1984.
- Lee, Clyde E., B. Izadmehr, and Randy B. Machemehl, "Demonstration of Weigh-in-Motion Systems for Data Collection and Enforcement," Research Report No. 557-1F, Center for Transportation Research, UT Austin, December 1985.
- "The Arboretum," Trammel Crow, Austin, TX, 1986.
- "Golden Triangle," Trammel Crow, Austin, TX, 1986.
- "Brodie Oaks Traffic Access Study," Trammel Crow, Austin, TX, 1986.
- Machemehl, Randy B., R.J. MacIntyre, Hani S. Mahmassani, and C. Michael Walton, "Rural Public Transportation Demand: Characteristics and Estimation Methodology," Research Report No. 1080-1F, Center for Transportation Research, UT Austin, March 1986.
- Machemehl, Randy B., A.M. Mechler, and Clyde E. Lee, "The Design of an Automated Traffic Counting System with Turning Movement Flow Analysis," Research Report No. 309-1F, Center for Transportation Research, UT Austin, November 1986.
- Lee, Clyde E., Randy B. Machemehl, Robert F. Inman, Charles R. Copeland, Jr., and William M. Sanders, "User-Friendly Texas Model - Guide to Data Entry," Research Report No. 361-1F, Center for Transportation Research, UT Austin, 1986.

- Govind, S., D.A. Faria, Randy B. Machemehl, and C. Michael Walton, "Analysis and Forecast of Truck Traffic Loads and the Relative Damage to Pavement Systems as a Function of Axle Configurations," Research Report No. 378-1F, Center for Transportation Research, UT Austin, November 1987.
- Lee, Clyde E., Randy B. Machemehl, and William M. Sanders, "Texas Model Version 3.0: Diamond Interchange," Research Report No. 443-1F, Center for Transportation Research, UT Austin, January 1989.
- Marcus, C. T., Randy B. Machemehl, and Clyde E. Lee, "Auxiliary Turning Lanes at Urban Intersections," Research Report No. 1111-1F, Center for Transportation Research, UT Austin, January 1990.
- Modur, S., Randy B. Machemehl, and Clyde E. Lee, "Criteria for the Selection of a Left-Turn Median Design," Research Report No. 1138-1F, Center for Transportation Research, UT Austin, January 1991.
- Kruger, T. J., Clyde E. Lee, Randy B. Machemehl, and William V. Ward, "Design Guidelines and Other Considerations for Strategic Arterial Streets," Research Report No. 1107-4, Center for Transportation Research, UT Austin, January 1991.
- Machemehl, Randy B. and M. Acampora, "TEXAS Model Validation for Left-Turn Phasing Alternatives," Research Report No. 1906-1F, Center for Transportation Research, UT Austin, August 1991.
- Rioux, Thomas W., Robert F. Inman, Charles Berry, Clyde E. Lee, and Randy B. Machemehl, "Interactive Graphics Intersection Design Systems: First Stage Development," Research Report No. 1139-1F, Center for Transportation Research, UT Austin, August 1991.
- Machemehl, Randy B., William V. Ward, T. Kruger, and Clyde E. Lee, "The Role of the Arterial Street in Urban Mobility," Report No. 1107-2F, Center for Transportation Research, UT Austin, August 1991.
- Machemehl, Randy B. and J. Karachepone, "Automotive Diagnostic Technology," Research Report No. 986-1F, Center for Transportation Research, UT Austin, November 1991. "TEXAS Model Version 3.0 Documentation" 1991
- Rioux, Thomas W., Robert F. Inman, Randy B. Machemehl, and Clyde E. Lee, "TEXAS Model for Intersection Traffic: Additional Features," Research Report No. 1258-1F, Center for Transportation Research, UT Austin, January 1993.
- Dedeitch, B. P., Randy B. Machemehl, M.A. Euritt, Rob Harrison, and C.M. Walton, "Reliability of Toll Road Revenue Forecasts for Selected Toll Roads in the United States," Research Report No. 1281-2, Center for Transportation Research, UT Austin 1993.
- Machemehl, R.B. "TEXAS Model for Intersection Traffic Version 3.0 Documentation." November 1993
- Palonarchy, S., Hani S. Mahmassani, and Randy B. Machemehl, "Models of Pedestrian Crossing Behavior at Signalized Intersections," Research Report No. 1296-1, Center for Transportation Research, UT Austin, January 1994.
- Otis, S.C., Hani S. Mahmassani, Randy B. Machemehl, and S. Palamarchy, "Pedestrian Signals, Warrants and Effectiveness," Research Report No. 1296-2F, Center for Transportation Research, UT Austin, May 1994.
- Rioux, Thomas W., Robert F. Inman, Randy B. Machemehl, and Clyde E. Lee, "Interactive Graphics Intersection Design User's Manual," Research Report No. 1308-1F, Center for Transportation Research, UT Austin, December 1994.
- Dowds, Jacqueline and Randy B. Machemehl, "A Computer Based Methodology for Optimizing Transit System Station Spacing," Research Report No. 721915-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, December 1994.
- Jones, Rebecca W. and Randy B. Machemehl, "User-Based Location Criteria for Transit Terminal Frequency," Research Report No. 721915-2, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, December 1994.
- Euritt, Mark A., Randy B. Machemehl, Rob Harrison, and J.E. Jarrett, "An Overview of Highway Privatization," Research Report No. 1281-1, Center for Transportation Research, UT Austin, 1994.

- Jarrett, J. E., Mark A. Euritt, Randy B. Machemehl, and Rob Harrison, "Strategic and Implementation Issues in Texas Public-Private Transportation Projects," Research Report No. 1281-3F, Center for Transportation Research, UT Austin, 1994
- Westerfield, Heidi, A.V. Gallego, J. Jarrett, Randy B. Machemehl, and Rob Harrison, "A Model for Estimating the Value of Property Access Rights," Research Report No. 1325-1F, Center for Transportation Research, UT Austin, 1995.
- Oswald, Christopher, Chungwon Lee, Mark A. Euritt, Randy B. Machemehl, Robert Herman, and C. Michael Walton, "Texas Public Opinion Regarding Toll Roads," Research Report No. 1322-1, Center for Transportation Research, UT Austin, March 1995.
- Machemehl, Randy B., Clyde E. Lee, Randy Durrenberger, Michael Hunter, and A. Naqvi, "Montana Avenue Feasibility Study," Center for Transportation Research, Research Report No. 1942-1F, UT Austin, March 1995.
- Acampora, Marc and Randy B. Machemehl, "Congress Avenue Regional Arterial Study: Collector-Distributor Lanes," Research Report SWUTC/95/60019-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, 1995.
- Venable, Diane L., Randy B. Machemehl, and Mark A. Euritt, "Electronic Toll Collection Systems," Research Report No. 1322-2, Center for Transportation Research, UT Austin, May 1995.
- Efstathiadis, S. and Randy B. Machemehl, "Congress Avenue Regional Study: Variability of Departure Headways," Research Report SWUTC/95/60019-2, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, June 1995.
- Lang, L. and Randy B. Machemehl, "Congress Avenue Regional Arterial Study: Grade Separations," Research Report SWUTC/95/60019-3, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, June 1995.
- Kou, Cheng-Chen and Machemehl, Randy B., "Congress Avenue Regional Arterial Study: Long-Term Improvement Schemes and Capacity Analysis," Research Report SWUTC/95/60019-4, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin June 1995.
- Liao, Tsai-Yun and Randy B. Machemehl, "Energy Conservation Through Enhanced Traffic Signal Responsiveness," Research Report SWUTC/95/60063, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, June 1995.
- Liao, Tsai-Yun and Randy B. Machemehl, "Prediction of Mobile Source Emissions and Fuel Consumption Using the TEXAS Model," Research Report SWUTC/95/60032, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, June 1995.
- Euritt, Mark A., Rob Harrison, Randy B. Machemehl, and Clyde E. Lee, "An Evaluation of the Status, Effectiveness, and the Future of Toll Roads in Texas: Remaining Issues and Executive Summary," Research Report No. 1322-3F, Center for Transportation Research, UT Austin, October 1995.
- Hunter, Michael and Randy B. Machemehl, "Re-Evaluation of Ramp Design Speed Criteria: Review of Practice and Data Collection." Research Report 1732-1, Center for Transportation Research, UT Austin, April 1997.
- Garrow, Michael and Randy B. Machemehl, "Development and Evaluation of Transit Signal Priority Strategies," Research Report SWUTC/97/472840-00068-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 1997.
- Belfield, Sam and Randy B. Machemehl, "A Study of US 183 Traffic Service in Cedar Park," Interim Research Report, Center for Transportation Research, UT Austin, January 1998.
- Mahmassani, Hani S., Didier M. Valdes, Randy B. Machemehl, John Tassoulas, and James C. Williams, "Integrated Arterial and Freeway Operation Control Strategies for ITS Advanced Traffic Management Systems," Research Report 0-1468-1F, Center for Transportation Research, UT Austin, January 1998.
- Rioux, Thomas W., Robert F. Inman, Randy B. Machemehl, and Clyde E. Lee, "Interactive Graphics Intersection Design System (IGIDS)," Research Reports 1291-1, 1291-2, and 1291-S, Center for Transportation Research, UT Austin, January 1998.
- Liao, Tsai-Yun and Randy B. Machemehl, "Fuel Consumption Estimation and Optimal Traffic Signal

- Timing,” Research Report SWUTC/98/467508-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 1998.
- Taylor, Beth and Randy B. Machemehl, “Development and Evaluation of Light Rail Transit Signal Priority Strategies,” Research Report SWUTC/98/472840-00072-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 1998.
- Ahn, Gye-Heong and Randy B. Machemehl, “Methodology for Traffic Signal Timing in Oversaturated Arterial Networks,” Research Report SWUTC/98/465510-1, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, October 1998.
- Belfield, Sam and Randy B. Machemehl, "A Study of US 183 Traffic Service in Cedar Park," Project Report for US DOT, Federal Highway Administration, Center for Transportation Research, UT Austin, December 1998.
- Otis, Stephanie C. and Randy B. Machemehl, "An Analysis of Pedestrian Signalization in Suburban Areas," Research Report SWUTC/99/472840-00065, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 1999.
- Salek, Mir-Davood and Randy B. Machemehl, "Characterizing Bus Transit Passenger Wait Times," Research Report SWUTC/99/167503, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 1999.
- Hunter, Michael, Randy B. Machemehl, and Alexei Tsyganov, "Re-Evaluation of Ramp Design Speed Criteria," Research Report No. 1732-2F, Center for Transportation Research, UT Austin, March 2000.
- Lee, Chungwon and Randy B. Machemehl, "Combined Traffic Signal Control and Traffic Assignment: Algorithms, Implementation and Numerical Results," Research Report SWUTC/00/472840-00074, Southwest Region University Transportation Center, Center for Transportation Research, UT Austin, August 2000.
- Kockelman, Kara, Aaron Overman, Marwan Madi, Jenny Peterman, Randy B. Machemehl, and Susan Handy, “Investigation of the Impact of Frontage Roads as an Element of Controlled Access Facilities,” Research Report No. 1873-1, Center for Transportation Research, UT Austin, August 2000.
- Wang, Feng, Robert F. Inman, Randy B. Machemehl, Zhanmin Zhang, and C. Michael Walton, “Study of Current Truck Configurations,” Research Report No. 1862-1, Center for Transportation Research, UT Austin, December 2000.
- O’Shea, Jillyn K., Randy B. Machemehl, and Thomas W. Rioux, “Design Guidelines for Provision of Median Access on Principal Arterials,” Research Report No. 1846-1, Center for Transportation Research, UT Austin, December 2000.
- Machemehl, Randy B., Thomas W. Rioux, Alexei Tsyganov, and Pieter Poolman, “Freeway Operational Flexibility Concepts,” Research Report No. 1844-1, Center for Transportation Research, UT Austin, March 2001.
- Middleton, Dan, Rob Harrison, and Randy B. Machemehl, “A Review of Texas Department of Public Safety Truck Regulation Enforcement Activities,” Texas Transportation Institute Research Report, College Station, Texas, May 2001.
- Kockelman, Kara, Marwan Madi, Jacob Sesker, Randy B. Machemehl, and Susan Handy, “Frontage Roads in Texas: Legal Issues, Operational Issues, and Land Use Distinctions,” Research Report No. 1873-S1, Center for Transportation Research, UT Austin, October 2001.
- Rioux, Thomas W, Robert F. Inman, and Randy B. Machemehl, “Interactive Graphics Intersection Design System (IGIDS) Enhancements,” Research Report 5-1291-01-2, Center for Transportation Research, UT Austin, October 2001.
- Kockelman, K., Randy B. Machemehl, A. Overman, M. Madi, J. Sesker, J. Peterman, and S. Handy, “Frontage Roads in Texas: A Comprehensive Assessment,” Research Report No. 1873-2, Center for Transportation Research, UT Austin, October 2001.
- Lee, Chungwon and Randy B. Machemehl, “Combined Traffic Signal Control and Traffic Assignment: Algorithms, Implementation and Numerical Results,” Southwest Region University Transportation Center, SWUTC/02/ 472840-00074-1, Center for Transportation Research, UT Austin, February 2002.
- Karoonsoontawong, A., Z. Zhang, and R. Machemehl, “Cost-Effectiveness Analysis of Enhancing the

- Pavement-Related Information Systems at the Texas Department of Transportation,” Research Report No. 4186-2, Center for Transportation Research, UT Austin, December 2002.
- Persad, K., D. Mazumder, R. Machemehl, R. Harrison, and D. Luskin, “Key Issues in Assessing the Feasibility of Trans Texas Corridor Right-of-Way Royalty Payments,” Research Report No. 4808-P1, Center for Transportation Research, UT Austin, December 2002.
- Baker, R., T. DeFries, D.K. Ezekoye, M. Hall, S. Kishan, R. Machemehl, R. Matthews, J. Prozzi, and H. Wheat, “TxDOT Emulsified Diesel,” Research Report No. 0-4576-3, Center for Transportation Research, UT Austin, May 2003.
- Persad, K., S. Bansal, D. Mazumder, and R. Machemehl, “Financial Analysis of Alternative Trans Texas Corridor Right-of-Way Deferred Payment Options,” TxDOT Research Report No. 4808-P4, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, September 2003.
- Zhang, Z. and R. Machemehl, “Pavement-Related Databases in Texas,” Research Report No. 0-4186-3, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, April 2004.
- Zhang, Z., R. Machemehl, and I. Ahson, “Application of the Analytic Hierarchy Process for Prioritization of Pavement Data Collection for the TxDOT PMIS,” Research Report No. 0-4186-8, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, April 2004.
- Zhang, Z., R. Machemehl, R. Smith, and I. Ahson, “Definition of the ‘Cradle-to-Grave’ Pavement Management Process,” Research Report No. 0-4186-P1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, May 2004.
- Fan, W. and R. Machemehl, “Optimal Transit Route Network Design Problem: Algorithms, Implementations, and Numerical Results,” Research Report No. SWUTC/04/167244-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, May 2004.
- Zhang, Z., R. Machemehl, I. Ahson, and A. Karoonsoontawong, “A Summary of the USER Requirements,” Research Report No. 0-4186-6, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, May 2004.
- Hunter, M. and R. Machemehl, “Development and Validation of a Flexible, Open Architecture, Transportation Simulation with an Adaptive Control Implementation,” Research Report No. SWUTC/03/167823, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, June 2004.
- Zhang, Z., R. Machemehl, and S. Amin, “A Summary of Other Research Efforts at TxDOT that are Related to This Research,” Research Report No. 0-4186-4, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, June 2004.
- Zhang, Z., R. Machemehl, and M. Shenoda, “A Practical Approach to Traffic Data Provision for Pavement Management,” Research Report No. 0-4186-5, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, June 2004.
- Zhang, Z., R. Machemehl, A. Karoonsoontawong, S. Amin, and S. Sinha, “Network-Level Budget Planning Using Large-Scale Optimization,” Research Report No. 0-4186-7, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, June 2004.
- Persad, K., S. Bansal, D. Mazumder, M. Bomba, and R. Machemehl, “Trans Texas Corridor Right-of-Way Royalty Payment Feasibility,” TxDOT Research Report No. 4808-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, September 2004.
- Zhang, Z., R. Machemehl, and R. Smith, “A Work Plan for the Enhancement of the TxDOT PMIS,” Research Report No. 0-4186-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, October 2004.
- Karoonsoontawong, A., Z. Zhang, and R. Machemehl, “Cost-Effectiveness Analysis of Enhancing the Pavement-Related Information Systems at the Texas Department of Transportation,” Research Report No. 0-4186-2, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, October 2004.
- Lee, Chungwon and R. Machemehl, “Combined Traffic Signal Control and Traffic Assignment: Algorithms, Implementation and Numerical Results,” SWUTC Research Report No. 472840-

- 00074-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, March 2005.
- Matthews, R., R. Baker, T. DeFries, DK Ezekoye, M. Hall, S. Kishan, R. Machemehl, J. Prozzi, and H. Wheat "Emulsified Diesel Emission Testing: Performance Evaluation and Operational Assessment," TxDOT Research Report No. 0-4576-4, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, April 2005.
- Harrison, R., N. Lownes, and R. Machemehl, "Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District," TxDOT Research Report IAC 00-0027, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, May 2005.
- Tsyganov, A., R. Machemehl, A. Qatan, N. Warrenchuk, "Driver Responses to Urban Freeway Information Loads," TxDOT Research Report No. 0-4621-2, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, September 2005.
- Tsyganov, A., R. Machemehl, N. Warrenchuk, "Safety Impact of Edge Lines on Rural Two-Lane Highways," TxDOT Research Report No. 0-5090-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, September 2005.
- Zhang, Z. and R.B. Machemehl, "A Comprehensive Plan for Pavement-Related Databases and PMIS Functionality Enhancements," Research Report 0-4186-3, Center for Transportation Research, The University of Texas at Austin, Austin, TX, June 2006.
- Shenoda, M. and R. Machemehl, "Development of a Phase-by-Phase, Arrival-Based, Delay-Optimized Adaptive Traffic Signal Control Methodology with Metaheuristic Search," Research Report No. SWUTC/03/167863-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, October 2006.
- Hallett, I., D. Luskin, and R. Machemehl, "Evaluation of On-Street Bicycle Facilities Added to Existing Roadways," Research Report 0-5157-1, Center for Transportation Research, The University of Texas at Austin, Austin, TX, August 2006.
- Machemehl, R., "Procedures for Applying MUTCD Warrants and Installing Speed Zones," University of Texas at Austin, Center for Transportation Research, July 2007.
- Machemehl, R., "Recommended Improvements to the Triangle Development and Surrounding Areas to Encourage and Enhance Non-Automobile Travel," University of Texas at Austin, Center for Transportation Research, July 2007.
- Hlavacek, Ian and Randy Machemehl, "Best Practices: Separation Devices Between Toll Lanes and Free Lanes" University of Texas at Austin, Center for Transportation Research, 2007.
- Chan, P., Z. Zhang, and R. Machemehl, "A Pilot Program for Sidewalk Maintenance," University of Texas at Austin, Center for Transportation Research, July 2007.
- Lownes, N. and R. Machemehl, "The Commuter Rail Circulator Network Design Problem: Formulation, Solution Methods, and Applications," University of Texas at Austin, August 2007, (473700-00077-1).
- Machemehl, Randy, R.L. Kelvin Cheu, and Hongchao Liu, "Guidelines for Incorporating a Bus Rapid Transit Scenario," TxDOT Project Number 0-5668, University of Texas at Austin, Center for Transportation Research.
- Haire, Ashley and Randy Machemehl, "A Methodology for Incorporating Fuel Price Impacts into Short-term Transit Ridership Forecasts," Research Report 169203-1, Southwest University Transportation Center, Center for Transportation Research, Austin, TX, August 2009.
- Torrance, Kristen, Ashley Haire and Randy Machemehl, "Vehicle and Driver Scheduling for Public Transit," Research Report 476660-00063-1, Southwest University Transportation Center, Center for Transportation Research, Austin, TX, August 2009.
- Yu, Yao and Randy Machemehl, "Examining the Role of Trip Length in Commuter Decisions to Use Public Transportation" Research Report 476660-00074-1, Southwest University Transportation Center, Center for Transportation Research, Austin, TX, July 2010.
- Pappas, Eleni and Randy Machemehl, "Predicting the Incremental Effects on Transit Ridership Due to Bus-On-Shoulder Operations," Research Report 476660-00073-1, Southwest University Transportation Center, Center for Transportation Research, Austin, TX, August 2010.
- Persad, Kali R, Randy Machemehl, Phil Nash, Theodore Cleveland, Cynthia Weatherby, and William Stockton. "Proposed TxDOT Strategic Research Program – Second Year Report," Research

- Report 0-6661-2, Center for Transportation Research, The University of Texas at Austin, August 2011.
- Mills, Alison, Jen Duthie, Randy Machemehl, Travis Waller, "Texas Roundabout Guidelines," Research Report 0-6414-P1, Center for Transportation Research, The University of Texas at Austin, August 2011.
- Mills, Alison, Jen Duthie, Randy Machemehl, Erin Ferguson, Travis Waller, and Dazhi Sun, "Texas Roundabout Guidelines: Final Report," Research Report 0-6414-1, Center for Transportation Research, The University of Texas at Austin, 2011.
- Kortum, Katherine and Randy Machemehl, "Free-floating Carsharing Systems: Innovations in Membership Prediction, Mode Share, and Vehicle Allocation Optimization Methodologies," Southwest Region University Transportation Center (SWUTC), Report No. SWUTC/11/476660-00079, Center for Transportation Research, The University of Texas at Austin, August 2012.
- Yu, Yao and Randy Machemehl, "Using Real Time Traveler Demand Data to Optimize Commuter Rail Feeder Systems," Southwest Region University Transportation Center (SWUTC), Report No. SWUTC/11/476660-00078, Center for Transportation Research, The University of Texas at Austin, August 2012.
- Wang, Li, Sami Kolahdoozan, Dan Seedah, Fernanda Leite, and Randy Machemehl, "State of Practice for Workers in Very Short Duration Work Zone Operations – Final Report," Research Report 0-6640-R1, Center for Transportation Research, The University of Texas at Austin, October 2012.
- Randy Machemehl, Kara Kockelman, Donna Chen, Bridget Bienkowski, Lisa Smith, and Zhanmin Zhang, "Travel Demand Management Guidebook," Research Report 6-0702-P2, Center for Transportation Research, The University of Texas at Austin, November 2012.
- Bringardner, Jack, Mason Gemar, and Randy Machemehl, "Development of an Interactive GIS Based Work Zone Traffic Control Tool," Southwest Region University Transportation Center (SWUTC) Report No. SWUTC/12/476660-00069, Center for Transportation Research, The University of Texas at Austin, August 2013.
- Gemar, Mason, Randy Machemehl, and Wei Fan, "Forecasting Future Purchase Costs, Down Time Costs, and Operations and Maintenance Costs," Research Report 0-6693-P1, The University of Texas at Austin, August 2013.
- Fournier, Christopher, Michael Kurker, Qun Zhao, Shadi Hakimi, Yi Qui, Shoupeng Tang, Ruoyu Liu, Natalia Ruiz Juri, Jennifer Duthie, and Randy Machemehl, "Reduction of Motorist' Delay and Crash Potential Upstream of Highway Work Zones," Research Report 0-6704-R1, Center for Transportation Research, The University of Texas at Austin, August 2013.
- Gemar, Mason D., Jack W. Bringardner, and Randy B. Machemehl. "Evaluating Removal of IH345 Using Subnetwork Analysis with Dynamic Traffic Assignment." Report for the Dallas District of the Texas Department of Transportation. Center for Transportation Research, the University of Texas at Austin, September 2013.
- Motamed, Moggan and Randy Machemehl. "Real Time Freeway Incident Detection." Report# FHWA/SWUTC/14/600451-00083-1, Southwest University Transportation Center, April 2014.
- Yu, Yao, Randy Machemehl and Shadi Hakimi. "Real-time Optimization of Passenger Collection for Commuter Rail Systems." Report #FHWA/SWUTC/14/600451-00082-1. Southwest University Transportation Center, September 2014, pp. 43.
- Murshed, M. Neaz, Siamak Ardekani, and Randy Machemehl. "Utilization Of Freeway Shoulders During Peak Travel Periods: Selection Of Pilot Corridors And Pre-Implementation Data Collection." Report for the North Central Texas Council of Governments. Center for Transportation Research, the University of Texas at Austin, April 2015.
- Machemehl, Randy. "Bus on Shoulders White Paper." Report for Capital Metropolitan Transportation Authority. Center for Transportation Research, the University of Texas at Austin, January 2015.
- Zuehlke, Jennifer, Fanta Kaba, Kelsey McElduff, Lisa Smith Ho, and Randy Machemehl. "Peak Period Bus Use of Freeway Shoulders. Report for Capital Metropolitan Transportation Authority. Center for Transportation Research, the University of Texas at Austin, June 2015.
- Machemehl, Randy. "Bus on Shoulders White Paper." Report for Capital Metropolitan Transportation Authority. Center for Transportation Research, the University of Texas at Austin, January 2015.
- Zuehlke, Jennifer, Carolina Baumanis, and Randy Machemehl. "No Trucks Left Lane." Report for the



- TxDOT Austin District. Center for Transportation Research, the University of Texas at Austin, August 2015.
- Machemehl, Randy. "Priorities for Overheight Vehicle Driver System Installation." Report for the TxDOT Austin District. Center for Transportation Research, the University of Texas at Austin, August 2015.
- Machemehl, Randy. "A GIS System for Tracking and Warning Regarding Excessive Pavement Wear Due to Hydraulic Fracturing. Report for the TxDOT Austin District. Center for Transportation Research, the University of Texas at Austin, August 2015.

#### **ORAL PRESENTATIONS:**

- Machemehl, Randy B., "Public Transportation System Planning in Small Urban Areas," The Graduate Transportation Seminar, Department of Civil Engineering, University of Texas at Austin, September 1977.
- Machemehl, Randy B., "Demand and Supply Options," Workshop on Human Services Transportation Planning and Management, Austin, TX, November 1977
- Machemehl, Randy B., "Problem Identification in Traffic Safety," Short Course for Texas Traffic Safety Coordinators, sponsored by the Council for Advanced Transportation Studies, December 1977
- Machemehl, Randy B., "Evaluation of Traffic Safety Counter Measures," Short Course for Texas Traffic Safety Coordinators, sponsored by the Council for Advanced Transportation Studies, March 1978
- Machemehl, Randy B., "Highway Speeds versus Fuel Consumption," Summer 1978 Meeting of the Institute of Transportation Engineers, Corpus Christi, Texas, July 1978
- Machemehl, Randy B., "Transportation Engineering Education: The Last Twenty Years," Fall 1978 Meeting of the Texas Section of the Institute of Transportation Engineers, Austin, TX, 1978
- Machemehl, Randy B., "A Cross Sectional Analysis of Transit Walking Distances," Fall 1978 Meeting of the Texas Section of the American Society of Civil Engineers, Austin, TX.
- Machemehl, Randy B., "Urban Transportation: A View of the State-of-the-Art," Summer 1983 Workshop of the Texas Industrial Arts Teachers, Texas Education Agency, Austin, TX, August 1983
- Machemehl, Randy B., "Automated Turning Movement Counting," State Department of Highways and Public Transportation Area I Meeting, Marshall, TX, September 1983
- Machemehl, Randy B., "A Comparative Analysis of Left-Turn Phase Sequencing," Transportation Research Board, National Academy of Sciences, January 1984
- Machemehl, Randy B., "A Review of Significant Transportation Research Conducted at U.T. Austin," Winter 1984 Meeting of the Texas Section, Institute of Transportation Engineers, South Padre Island, TX, January 1984
- Machemehl, Randy B., "Left-Turn Analysis Procedures," 58th Annual Highway and Transportation Short Course, College Station, TX, October 1984
- Machemehl, Randy B., "Review of Traffic Counting Research at The University of Texas," Area I Research Committee of the State Department of Highways and Public Transportation, October 1984
- Machemehl, Randy B., "Weighing Trucks on Axle-Load and Weigh-in-Motion Scales, Transportation Research Board, National Academy of Sciences, Washington, DC, January 13-16, 1985
- Machemehl, Randy B., "An Evaluation of a Simple Computer-Aided Instruction System for Undergraduate Civil Engineering," Regional Conference on University Teaching at the University of New Mexico, Las Cruces, NM, January 9-10, 1986
- Machemehl, Randy B., "Evaluation of Truck Sizes, Weights and Tire Pressures," State Department of Highways and Public Transportation Area III Research Meeting, Brownsville, TX, February 19-20, 1986
- Machemehl, Randy B., "A Computer-Aided Instructor System for Undergraduate Civil Engineering," ASEE Annual Conference, June 1986
- Machemehl, Randy B., "An Evaluation of Left-Turn Procedures," Institute of Transportation Engineers (ITE) 56th Annual Meeting, Session No. 16, Indianapolis, IN, September 7-10, 1986

- Machemehl, Randy B., "A Diamond Interchange Traffic Simulation Model," State Department of Highways and Public Transportation Area I Research Meeting, Beaumont, TX, October 1-2, 1986
- Machemehl, Randy B., "The TEXAS Model for Intersection Traffic -- A User-Friendly Microcomputer Version with Animated Graphics Screen Display," (with C.E. Lee) 66th Annual Transportation Research Board Meeting, Washington, DC, January 11-15, 1987
- Machemehl, Randy B., "Animated Graphics for Traffic Simulation," State Department of Highways and Public Transportation Area I Research Meeting, Dallas, TX, February 11-12, 1987
- Machemehl, Randy B., "TEXAS Model for Intersection Traffic: A User-Friendly Microcomputer Version with Animated Graphics Screen Display," (with C.E. Lee) 69th Annual Kansas Transportation Engineering Conference, Kansas State University, Manhattan, KS, March 25-26, 1987
- Machemehl, Randy B., "The Role of Technical Programs in Texas Section Activities," 57th Annual ITE Meeting, New York, NY, August 15-19, 1987
- Machemehl, Randy B., "The Needs for Changes in Student Chapter Activities," ASCE Annual Workshop, Fort Worth, TX, February 2, 1988
- Machemehl, Randy B., "Designing Microcomputer Software for Traffic Engineering," TexITE Winter 1988 Meeting, February 4-6, 1988
- Machemehl, Randy B., "Using Auxiliary Lanes in At-Grade Intersections," State Department of Highways and Public Transportation Area I Research Meeting, Lubbock, TX, April 12, 1988
- Machemehl, Randy B., "ASCE Student Chapters and Professional Activities," 1988 ASCE Spring Convention, Nashville, TN, May 6-10, 1988
- Machemehl, Randy B., "Computer Aided Design for Traffic Engineering," TexITE Annual Meeting, Fort Worth, TX, June 16-18, 1988
- Machemehl, Randy B., "Use of Auxiliary Lanes at Highway Intersections," State Department of Highways and Public Transportation Area I Research Meeting, Houston, TX, August 1988
- Machemehl, Randy B., "Technical Activities in the Texas Section," 58th International Meeting of the Institute of Transportation Engineers, Vancouver, British Columbia, Canada, September, 1988
- Machemehl, Randy B., "Design of an Interactive Graphics System for Intersection Design," State Department of Highways and Public Transportation Area III Research Meeting, Brownwood, TX, October 1988
- Machemehl, Randy B., "Transportation Facility Design: A Review of Research Efforts," 1989 Center for Transportation Research Symposium, Austin, TX, July 1989
- Machemehl, Randy B., "Criteria for the Selection of a Left-Turn Median Design," 59th Annual Meeting of the Institute of Transportation Engineers, San Diego, CA, September 1989
- Machemehl, Randy B., "User Interface for Design of an Interactive Graphics System for Intersection Design," State Department of Highways and Public Transportation Area III Research Meeting, Amarillo, TX, October 1989
- Machemehl, Randy B., "The TEXAS Traffic Simulation Package; a Multi-Purpose Transportation Engineering Tool," 7th National Conference on Microcomputers in Civil Engineering, Orlando, FL, November 1989
- Machemehl, Randy B., "Comparative Evaluation of Median Designs for Arterial Streets," State Department of Highways and Public Transportation Area III Research Meeting, Arlington, TX, February 1990
- Machemehl, Randy B., "Design Guide for Use of Auxiliary Lanes at Highway Intersections," State Department of Highways and Public Transportation Area III Research Meeting, Arlington, TX, February 1990
- Machemehl, Randy B., Panel Moderator, "Alternative East-West Travel Corridors for Austin," American Society of Civil Engineers, Texas Section, Austin Branch, June 19, 1990
- Machemehl, Randy B., Speaker, Texas Future Problem Solving Program 1990 Summer Coaching Conference, Austin, TX, August 13, 1990
- Machemehl, Randy B., "Guidelines for Regional Arterial Streets," First Seminar on Traffic and Highways, Monterrey, Mexico, December 1990
- Machemehl, Randy B., "Simulation of Diamond Interchange Traffic Operations," 70th Annual Meeting, Transportation Research Board, Washington, DC, January 1991

- Machemehl, Randy B., "Design and Operation of Superstreets," Institute of Transportation Engineers, Texas Section, Winter Meeting, Lubbock, TX, January 31 - February 1, 1991
- Machemehl, Randy B., "Simulation of Diamond Interchange Traffic Operations," State Department of Highways and Public Transportation Area III Research Meeting, Kerrville, TX, February 26, 1991
- Machemehl, Randy B., "Advanced Technology and Ground Transport," Annual Review of the Southwest Region University Transportation Center by the US Department of Transportation, Austin, TX, May 13-15, 1991
- Machemehl, Randy B., "Geometric Design," Center for Transportation Research Symposium, UT Austin, July 8, 1991
- Machemehl, Randy B., "Super Streets and Pedestrians," Presentation to Advanced Institute Summer Interns, Southwest Region University Transportation Center, UT Austin, July 1992
- Machemehl, Randy B., "Traffic Management and Engineering," Center for Transportation Research Symposium, UT Austin, July 1992
- Machemehl, Randy B. and Kou, Cheng-Chen, "Modeling Vehicle Acceleration-Deceleration Behavior During Merge Maneuvers," 1996 Annual Conference of the Canadian Society for Civil Engineering, Edmonton, Alberta, Canada, May 1996
- Machemehl, Randy B. and Kou, Cheng-Chen, "The Probabilistic Aspect of Measurement Errors in Estimating Speed Through Video Image Technique," 1996 Annual Conference of the Canadian Society for Civil Engineering, Edmonton, Alberta, Canada, May 1996
- Machemehl, Randy B., "Overview of the UTC Research and Advanced Institute Program at UT Austin," Annual Review of the Southwest Region University Transportation Center by the US Department of Transportation, College Station, TX, July 1996
- Machemehl, Randy B., "Superstreets and Urban Traffic Congestion" Presentation to Advanced Institute Summer Interns, Southwest Region University Transportation Center, UT Austin, June 1996
- Machemehl, Randy B. and Kou, Cheng-Chen, "Super Street Long Term Improvement Schemes and Capacity Analysis: A Case Study." 38th Annual Meeting of the Transportation Research Forum, San Antonio, TX, October 1996
- Machemehl, Randy B. and Lee, Chungwon, "Multiobjective Optimization of Equilibrium Network Signal Setting and Pricing." 38th Annual Meeting of the Transportation Research Forum, San Antonio, TX, October 1996
- Machemehl, Randy B. and Otis, Stephanie, "Predicting Pedestrian Safety at Suburban Signalized Intersections." 66th ITE Annual Meeting, Institute of Transportation Engineers, Minneapolis, MN, September 1996
- Machemehl, Randy B., "Civil Engineering as a Field of Study and A Profession." Presentation to GE102, Introduction to Engineering Course, College of Engineering, UT Austin, October 1996
- Machemehl, Randy B., "Diamond Interchange Incident Management Program." Presentation to Pat Irwin, Transportation Operations Director, Texas Department of Transportation, San Antonio, College of Engineering, UT Austin, October 1996
- Machemehl, Randy B., "Overview of UTC Research at the University of Texas." Annual Review of the Southwest Region University Transportation Center by the US Department of Transportation, College Station, TX, November 1996
- Machemehl, Randy B., "Overview of UTC Research and Advanced Institute at the University of Texas." Annual Review of the Southwest Region University Transportation Center by the US Department of Transportation, College Station, TX, April 1997
- Machemehl, Randy B., "Ramp Design Speed." Presentation to Advanced Institute Summer Interns, Southwest Region University Transportation Center, UT Austin, June 1997
- Machemehl, Randy B. and Chungwon Lee, "Global, Local and Interactive Searches to the Equilibrium Network Traffic Signal Setting Problem." Presentation at the 39th Transportation Research Forum, Montreal, Canada, October 1997
- Machemehl, Randy B., "Overview of UTC Research at The University of Texas." Presentation to the US Department of Transportation, UTC Review Committee, College Station, TX, April 1998

- Machemehl, Randy B. and Stephanie Otis, "Planning for Pedestrian Signalization Based on Land Use." Presentation at the ASCE Conference on Transportation, Land Use, and Air Quality, Portland, OR, May 1998
- Machemehl, Randy B. and Gye-Heong Ahn, "Methodology for Traffic Signal Timing in Oversaturated One-Way Arterial Networks." Presentation at the 26th Annual CSCE Conference, Halifax, Nova Scotia, Canada, June 1998
- Machemehl, Randy B. and Tsai-Yun Liao, "Aggregate Fuel Consumption Model at Signalized Intersections." Presentation at the 26th Annual CSCE Conference, Halifax, Nova Scotia, Canada, June 1998
- Machemehl, Randy B. and Tsai-Yun Liao, "Urban Network Vehicle Speed, Acceleration, and Fuel Consumption Profile Models." Presentation at the 26th Annual CSCE Conference, Halifax, Nova Scotia, Canada, June 1998
- Machemehl, Randy B. and Stephanie Otis, "Assessment Analysis of Pedestrian Signalization in Suburban Areas." Presentation at the 26th Annual CSCE Conference, Halifax, Nova Scotia, Canada, June 1998
- Machemehl, Randy B. and Chungwon Lee, "Genetic Algorithm, Local, and Iterative Searches for Combining Traffic Assignment and Signal Control Networks." Presentation at the 1998 International Conference on Traffic and Transportation Studies, Beijing, China, July 1998
- Machemehl, Randy B., "Development and Evaluation of Transit Signal Priority Strategies." Presentation to Advanced Institute Summer Interns of the Southwest Region University Transportation Center at UT Austin, July 1998
- Machemehl, Randy B. and Tsai-Yun Liao, "Development of An Aggregate Fuel Consumption Model for Signalized Intersections." Presentation at the 77th Annual Transportation Research Board Meeting, Washington, DC, January 1998
- Machemehl, Randy B. and Michael Garrow, "Development and Evaluation of Transit Signal Priority Strategies." Presentation at the 77th Annual Transportation Research Board Meeting, Washington, DC, January 1998
- Machemehl, Randy B., "Superstreets," Chinese Transportation Engineers Meeting, Austin, TX, September 1998
- Machemehl, Randy B. and Chungwon Lee, "Genetic Algorithm, Local, and Iterative Searches for Combining Traffic Assignment and Signal Control Networks," *Proceedings of the 1998 International Conference on Traffic and Transportation Studies*, Beijing, China, September 1998
- Machemehl, Randy B. and Michael Hunter, "Development of an Adaptive Control Strategy for One-Way Arterial Operation," 78th Annual Transportation Research Board Meeting, Washington, DC, January 1999
- Machemehl, Randy B. and Chungwon Lee, "Combining Traffic Signal Control and Traffic Assignment: Comparison of Global, Local, and Iterative Search Algorithms," 1999 CSCE Annual Conference, Regina, Saskatchewan, Canada, June 1999
- Machemehl, Randy B., "Design Speed Criteria," TxDOT RMC Meeting, San Antonio, TX, June 1999
- Machemehl, Randy B., "Freeway Congestion Management," to Advanced Institute summer interns, UT Austin, July 1999
- Machemehl, Randy B., "Austin Traffic Congestion," LAMP (Learning Activities for Mature People), UT Austin, Continuing Education, Thompson Conference Center, January 2000
- Machemehl, Randy B., "A Solution for Urban Traffic Congestion," Lakeway Town and Gown Society, Lakeway, TX, May 2000
- Machemehl, Randy B., "Synthesis Study of Current Truck Configurations Used in Texas," Texas Department of Transportation RMC 1 Meeting, Houston, TX, June 2000
- Machemehl, Randy B., "Development of Design Guidelines for the Provision of Median Access on Principal Arterials," Texas Department of Transportation RMC 3 Meeting, Houston, TX, June 2000
- Machemehl, Randy B. and Michael Hunter, "An Operational Evaluation of Freeway Ramps," Presentation at the 2000 Canadian Society of Civil Engineer's Annual Conference, London, Ontario, Canada, June 2000

Machemehl, Randy B., "How Can We Solve Urban Traffic Congestion Problems," Presentation for the Advanced Institute Summer Intern Program, UT Austin, July 2000

Machemehl, Randy B., "Access Control through Geometric Design," Annual Transportation Conference, Texas A&M University, College Station, TX, October 2000

Machemehl, Randy B. and Michael Hunter, "An Operational Evaluation of Freeway Ramp Design," Annual Transportation Research Board Meeting, Washington, DC, January 2001

Machemehl, Randy B., "Center for Transportation Research," presentation for Shana Dale, UT Austin, February 2001

Machemehl, Randy B., "Discussion of Solutions to Urban Traffic Problems Including Mass Transit, Toll Roads, and New Technologies," Explore UT, UT Austin, March 2001

Machemehl, Randy B. and Feng Wang, "Synthesis Study of Current Truck Configuration Used in Texas," The Tire Industry Conference, Interaction of Technology and Business, Hilton Head, SC, March 2001

Machemehl, Randy B., "Discussion of Solutions to Urban Traffic Problems Including Mass Transit, Toll Roads, and New Technologies," NexTech Conference, Renaissance Hotel, Austin, TX, July 2001

Machemehl, Randy B., "Discussion of Solutions to Urban Traffic Problems Including Mass Transit, Toll Roads, and New Technologies," Advanced Institute Summer Intern Program, UT Austin, August 2001

Machemehl, Randy B., "Traffic Simulation-Based Analyses of Traffic Control Surrounding the High Five Interchange, TxDOT Dallas District, Dallas, TX, February 2002

Machemehl, Randy B., "Expediting Commercial Border Inspections, TSPE Awards Banquet, Odessa, TX, February 2002

Machemehl, Randy B., "Recent CTR Accomplishments, CTR Advisory Committee Meeting, April 2002

Machemehl, Randy B., "A Career as an Engineer, Bowie High School, Austin, TX, April 2002

Machemehl, Randy B. and Alexei Tsyganov, "Impacts of Freeway Accidents on Traffic Operations," 30<sup>th</sup> Annual Conference – Canadian Society of Civil Engineering, Montreal, Quebec, Canada, June 2002

Machemehl, Randy B. and Wei Fan, "Characterizing Bus Transit Passenger Waiting Times," 30<sup>th</sup> Annual Conference – Canadian Society of Civil Engineering, Montreal, Quebec, Canada, June 2002

Machemehl, Randy B. and Feng Wang, "A Survey Study of Current Pavement-Related Truck Characteristics in Texas," 30<sup>th</sup> Annual Conference – Canadian Society of Civil Engineering, Montreal, Quebec, Canada, June 2002

Machemehl, Randy B., "Investigation of the Impact of Frontage Roads as an Element of Controlled Access Facilities," TxDOT Research Management Committee Meeting, San Antonio, Texas, June 2002

Machemehl, Randy B. and Feng Wang, "Study of Truck Tire Pressure in Texas," ASCE 7<sup>th</sup> AATT Conference, Cambridge, MA, August 2002

Machemehl, Randy B., "Transportation Technology in the 21<sup>st</sup> Century," Texas Transportation Summit, Irving, Texas, August 2002

Machemehl, Randy B., "Evaluation of Purinox as an Admissions Reduction Tool," TxDOT/AGC, Austin, TX, October 2002

Machemehl, Randy B., "Purinox," Research Management Committee Meeting, San Antonio, Texas, November 2002

Machemehl, Randy B., "Survey Study of Texas Truck Tire Pressures," Transportation Research Board 82<sup>nd</sup> Annual Meeting, Washington, DC, January 2003

Machemehl, Randy B., "Decision-Making Problem for Managing Pavement Maintenance and Rehabilitation Projects," Transportation Research Board 82<sup>nd</sup> Annual Meeting, Washington, DC, January 2003

Machemehl, Randy B., "Future Research Opportunities in Transportation," Sophomore Engineering Honors Seminar, Austin, TX, March 2003

Machemehl, Randy B., "Strategic Plan for Faculty Recruiting," Budget Council Meeting, Department of Civil Engineering, Austin, TX, May 2003

Machemehl, Randy B., "Development of a Flexible, Open Architecture, Transportation Simulation Platform," SWUTC Executive Committee Meeting, College Station, Texas, May 2003

- Machemehl, Randy B., "Samples of Driver Behavior and Reactions during Different Levels of Information Loading," 31st Annual Conference – Canadian Society of Civil Engineering, Moncton, New Brunswick, Canada, June 2003
- Machemehl, Randy B., "0-4808 Trans Texas Corridor ROW Royalty Payment Feasibility," Research Management Committee Meeting, San Antonio, Texas, June 2003
- Machemehl, Randy B., "The TxDOT Emulsified Diesel Fuel Project: 0-4576," Houston Meeting, Houston, Texas, June 2003
- Machemehl, Randy B., "Optimal Bus Transit Route Network Design Problem: Algorithms, Implementations and Numerical Results," TRB Representative's CTR visit, June 2003
- Machemehl, Randy B., "Optimal Bus Transit Route Network Design Problem: Algorithms, Implementations and Numerical Results," TexITE Meeting, Dallas, TX, June 2003
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2003/Advanced Institute Summer Symposium Series, UT Austin, July 2003
- Machemehl, Randy B. and Wei Fan, "Optimal Bus Transit Route Network Design Problem: Algorithms, Implementations and Numerical Results," INFORMS 2003 Annual Meeting, Atlanta, GA, October 2003
- Machemehl, Randy B. and Michael Hunter, "Development of a Flexible, Open Architecture, Transportation Simulation," Winter Simulation Conference, New Orleans, LA, December 2003
- Machemehl, Randy B., Thomas Rioux, and Robert F. Inman, "Enhancements to IGIDS to Import Data from GOPAK Designs, Interface with PASSER II-90, Update the HCM Chapter 9 Procedures, and Update the Training Materials," TxDOT PSR No. 5-1291-S, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, October 2003
- Machemehl, Randy B., Alexei Tsyganov, Katherine Liapi, and D. Mohan, "Traffic Control Improvements for Urban Arterial Work Zones," TxDOT Research Report No. 0-4266-2, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, October 2003
- Persad, K., S. Bansal, D. Mazumder, M. Bomba, and R. Machemehl, "Trans Texas Corridor Right-of-Way Royalty Payment Feasibility," TxDOT Research Report No. 4808-PSR, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, November 2003
- Machemehl, Randy B. and Alexei Tsyganov, "Improving Urban Intersection and Arterial Traffic Control Plans," Texas Department of Transportation, Regional Management Committee Meeting, Austin, TX, November 2003
- Kockelman, Kara, W. C. Bouldin, S. Hakimi, and R. Machemehl, "Freeway Design Decisions for Revised Frontage Road Policy: Final Project Report," TxDOT Research Report No. 5-1873-01-1, Center for Transportation Research, The University of Texas at Austin, Austin, Texas, January 2004
- Machemehl, Randy B. and Feng Wang, "Analytical Verification of Effects of Tire Pressure on Pavement with Data from Washington State Department of Transportation," 83<sup>rd</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2004
- Machemehl, Randy B., Alexei Tsyganov, and Katherine Liapi, "Urban Arterial Work Zone Traffic Control Concepts," Second Gulf Conference on Roads, Abu Dhabi, United Arab Emirates, March 2004
- Machemehl, Randy B. and Alexei Tsyganov, "Measuring Driver Responses to the Driving Environment," Second Gulf Conference on Roads, Abu Dhabi, United Arab Emirates, March 2004
- Machemehl, Randy B. and Wei Fan, "A Multi-stage Monte Carlo Sampling Based Stochastic Programming Model for the Dynamic Vehicle Allocation Problem," Annual 2004 Transportation Research Forum, Evanston, IL, March 2004
- Machemehl, Randy B. and Feng Wang, "Understanding the Tire-Pavement Interaction Process," Clemson University – The Tire Industry Conference, Hilton Head, S.C., March 2004
- Prozzi, Jolanda, Timothy DeFries, Randy Machemehl, Ron Matthews, Rick Baker, and Don Lewis "The Texas Diesel Fuels Project, Part 3: Coast-Effectiveness Analyses for an Emulsified Diesel Fuel for Highway Construction Vehicle Fleets," 2004 SAE World Congress, Detroit, MI, March 2004
- Machemehl, Randy B., "Urban Traffic Congestion: Can A Solution Be Devised?" Keynote Address, Jordan International Conference on Sustainable Development of Transportation Systems, Amman, Jordan, April 2004

- Machemehl, Randy B., "Comparative Evaluation of Microsimulation Models," Pre-Conference Workshop, Jordan International Conference on Sustainable Development of Transportation Systems, Amman, Jordan, April 2004
- Machemehl, Randy B., "CORSIM: A Brief Introduction," Pre-Conference Workshop, Jordan International Conference on Sustainable Development of Transportation Systems, Amman, Jordan, April 2004
- Machemehl, Randy B. and Michael Hunter, "Initial Development Object-Oriented, Open Architecture Transportation Simulation," Jordan International Conference on Sustainable Development of Transportation Systems, Amman, Jordan, April 2004
- Machemehl, Randy B. and Michael Hunter, "Initial Development of an Object-Oriented, Open Architecture, Transportation Simulation," 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Saskatoon, Saskatchewan, Canada, June 2004
- Machemehl, Randy B., Alexei Tsyganov, and Katherine Liapi, "Evaluation of Traffic Control Improvement Solutions for Urban Work Zones," 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Saskatoon, Saskatchewan, Canada, June 2004
- Machemehl, Randy B. and Alexei Tsyganov, "Assessing Safety During Highway Design," 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Saskatoon, Saskatchewan, Canada, June 2004
- Machemehl, Randy B. and Feng Wang, "Analytical Study of the Effects of Tire Pressure on Flexible Pavement," 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Saskatoon, Saskatchewan, Canada, June 2004
- Machemehl, Randy B. and Wei Fan, "A Genetic Algorithm Approach for the Transit Route Network," 5<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Saskatoon, Saskatchewan, Canada, June 2004
- Machemehl, Randy B., "Urban Traffic Control Methodologies," Seoul Development Institute, Seoul, Korea, June 2004
- Machemehl, Randy B., "Urban Congestion Mitigation Techniques," Kyung Hee University, Seoul, Korea, June 2004
- Machemehl, Randy B., "Sample of Current Research Projects, USIT 2003/Advanced Institute Summer Symposium Series, UT Austin, July 2004
- Machemehl, Randy B. and Wei Fan, "A Tabu Search Based Heuristic Method for the Transit Route Network Design Problem," 2004 Conference on Computer-Aided Scheduling of Public Transport (CASPT), San Diego, CA, August 2004
- Machemehl, Randy B., "Center for Transportation Research and the Civil Engineering Transportation Program," New Student Orientation, Center for Transportation Research, Austin, TX, August 2004
- Machemehl, Randy B., "Improving Urban Intersection and Arterial Traffic Control Plans," Alexei Tsyganov and Randy Machemehl, Texas Department of Transportation, Regional Management Committee Meeting, Austin, TX, November 2004
- Machemehl, Randy B., "Emulsified Diesel Emission Testing, Performance Evaluation and Operational Assessment," Rick Baker, Tim DeFries, DK Ezekoye, Sandeep Kishan, Randy Machemehl, Ron Matthews, Jolanda Prozzi, and Harovel Wheat, Texas Department of Transportation, Regional Management Committee Meeting, Austin, TX, November 2004
- Machemehl, Randy B., "Analytical Study of Effects of Truck Tire Pressure on Pavements Using Measured Tire-Pavement Contact Stress Data," Feng Wang, Randy Machemehl, and Jorge Prozzi, 84<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2005
- Machemehl, Randy B., "Quantitative Description of Informational Dimensions of Urban Freeways," Alexei Tsyganov and Randy Machemehl, 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Toronto, Ontario, Canada, June 2005
- Machemehl, Randy B., "An Examination of the Relationship Between Accidents and Urban Freeways Information Load," Qatan, Ahmed, Alexei Tsyganov and Randy Machemehl, 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Toronto, Ontario, Canada, June 2005

- Machemehl, Randy B., "Investigation of Driver Behavior and Reactions in Traffic Operation and Safety Research," Alexei Tsyganov and Randy Machemehl, 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Toronto, Ontario, Canada, June 2005
- Machemehl, Randy B., "Analysis of Effects of Truck Tire Pressure on Flexible Pavements," Feng Wang and Randy Machemehl, 6<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Toronto, Ontario, Canada, June 2005
- Machemehl, Randy B., "UT Pavements and Materials Academic Program," with Ben Streetman and Mary Beth Maddox, Presentation to Texas Asphalt Paving Association, July 2005
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2005/Advanced Institute Summer Symposium Series, UT Austin, July 2005
- Machemehl, Randy B., "Future Directions of TxDOT Research," Department of Civil, Architectural, Environmental Engineering, Faculty Advance, July 2005
- Machemehl, Randy B., "Center for Transportation Research and the Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, Austin, TX, August 2005
- Machemehl, Randy B., "An Introduction to Transportation Engineering," CE 301, Department of Civil, Architectural and Environmental Engineering, UT Austin, September 2005
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," Chinese Delegation Visit to the Center for Transportation Research, UT Austin September 2005
- Machemehl, Randy B., "Analysis of Accident Statistics on Urban Arterial Street Work Zones," 12<sup>th</sup> World Congress on Intelligent Transport Systems, San Francisco, CA, November 2005
- Machemehl, Randy B., "Hybrid Tabu Search Strategies for Urban Transit Networks," 2005 INFORMS Annual Meeting, San Francisco, CA, November 2005
- Machemehl, Randy B., "Mechanistic-Empirical Study of Effects of Truck Tire Pressure on Pavements Using Measured Tire-Pavement Contact Stress Data," 85<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2006
- Machemehl, Randy B., "Development of Quick Solutions for Prediction of Critical Asphalt Pavement Responses due to Measured Tire-Pavement Contact Stresses" 85<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2006
- Machemehl, Randy B., "An Introduction to Transportation Engineering," CE 301, Department of Civil, Architectural, and Environmental Engineering, UT Austin, March 2006.
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2006/Advanced Institute Summer Symposium Series, UT Austin, July 2006
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2006
- Machemehl, Randy B., "Best Practices for Separation Devices Between Toll Lanes and Non-Toll Lanes," TxDOT RMC Meeting, Arlington, Texas, November 2006
- Machemehl, Randy B., "VISSIM: A Multi-Parameter Sensitivity Analysis," with Nicholas Lownes, 2006 Winter Simulation Conference, Monterey, CA, December 2006
- Machemehl, Randy B., "The Impact of Rising Fuel Prices on US Transit Ridership," with Ashley R. Haire, 86<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2007
- Machemehl, Randy B., "Travel Demand Management: Partial Solution for Urban Traffic Congestion," 3<sup>rd</sup> Jordan International Transportation Conference, Amman, Jordan, March 2007
- Machemehl, Randy B., "Urban Congestion: Demand Management Based Solutions," Keynote Speech, 3<sup>rd</sup> Jordan International Transportation Conference, Amman, Jordan, March 2007
- Machemehl, Randy B., "The Impact of Rising Fuel Prices on US Transit Ridership," with Ashley R. Haire, 8<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Yellowknife, Northwest Territories, Canada, June 2007
- Machemehl, Randy B., "Considerations for Choosing HOT Lane Delineation Techniques," 8<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Yellowknife, Northwest Territories, Canada, June 2007



- Machemehl, Randy B., "Procedures for Applying MUTCD Warrants and Installing Speed Zones," City of Austin, Austin City Manger's Meeting, July 2007
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2007/Advanced Institute Summer Symposium Series, UT Austin, July 2007
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2007
- Machemehl, Randy B., "Travel Demand Management: Partial Solution for Urban Traffic Congestion," Texas Tech University, Lubbock, Texas, October 2007
- Machemehl, Randy B., "Operational and Safety Impacts for Bicyclists Using Roadways with On-Street Parking," TxDOT RMC Meeting, San Antonio, Texas, November 2007
- Machemehl, Randy B., "CTR & the SWUTC Program," Research and Innovative Technology Administration (RITA) Representative Visit and Meeting, Southwest Region Transportation Center, College Station, Texas, December 2007
- Machemehl, Randy B., "The Commuter Rail Circulator Network Design Problem: Formulation, Solution Methods, and Applications," Research and Innovative Technology Administration (RITA) Representative Visit and Meeting, Southwest Region Transportation Center, College Station, Texas, December 2007
- Machemehl, Randy B., "Peer Review of MUTCD Applications," Austin City Council, Austin, Texas, December 2007
- Machemehl, Randy B., "Carsharing: Dynamic Vehicle Allocation Decision-Making Problem," with Wei Fan and Nicholas E. Lownes, 87<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2008
- Machemehl, Randy B., "Commuter Rail Circulator Route Network Design and Its Implications for Transit Accessibility," with Nicholas E. Lownes, 87<sup>th</sup> Annual Transportation Research Board Meeting, Washington, D.C., January 2008
- Machemehl, Randy B., "CTR & the SWUTC Program," SWUTC Site Visit, Southwest Region Transportation Center, College Station, Texas, March 2008
- Machemehl, Randy B., "A Quantitative Characterization of Mass Transit in Jordan, Transportation Research Forum," March 2008
- Machemehl, Randy B., "Incorporation of Fuel Price Impacts into Short-Term Transit Ridership Forecasts," with Ashley R. Haire, 10<sup>th</sup> International Conference on Applications of Advanced Technologies in Transportation (AATT 2008), Athens, Greece, May 2008
- Machemehl, Randy B., "Bicycle Street Facilities," Capital Area Bicycle and Pedestrian Summit, University of Texas, Austin, Texas, May 2008
- Machemehl, Randy B., "Operational Impacts of Bicycling Adjacent to On-Street Parking," with Kristen Torrance and Ian Hallett, 9<sup>th</sup> Transportation Specialty Conference of the Canadian Society for Civil Engineering, Quebec, Canada, June 2008
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2008/Advanced Institute Summer Symposium Series, UT Austin, July 2008
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2008
- Machemehl, Randy B., "Travel Demand Management: Partial Solution for Urban Traffic Congestion," 8th International Congress on Advances in Civil Engineering Conference, Cypress, Greece, September 2008
- Machemehl, Randy B., "On-Street Bicycle Operations," City Bicycle Forum, November 2008
- Machemehl, Randy B., "Operational Cost Efficiency of Bus versus Heavy Rail: A Temporal and Regional Analysis," with Ashley R. Haire, Transportation Research Forum, Portland, OR, March 2009
- Machemehl, Randy B., "UT/SWUTC Research Program" SWUTC Executive Committee Meeting, Center for Transportation Research, April 2009

- Machemehl, Randy B., "Variations in the Relationship between Fuel Price and Bus Ridership among U.S. Transit Systems," with Ashley R. Haire, Canadian Society of Civil Engineering Annual Conference, St. John's, Newfoundland, Canada, May 2009
- Machemehl, Randy B., "Mitigating Congestion through Research," Korean-American Scientists and Engineers Association (KSEA), Intelligent Transportation and Environmental System (ITES) Symposium, Raleigh, NC, July 2009
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2009/Advanced Institute Summer Symposium Series, UT Austin, July 2009
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2009
- Machemehl, Randy B., "Introduction to Civil Engineering," Guest Lecturer, CE301, November 2009
- Machemehl, Randy B., "Transportation Engineering," CE 301 Guest Lecture, November 2009
- Machemehl, Randy B., "Bicycles on Urban Streets: An Observational Study," 22<sup>nd</sup> Rhode Island Transportation Engineering Forum, Providence, RI, November 2009
- Machemehl, Randy B., "Introduction to Civil Engineering," Guest Lecturer, CE301, February 2010
- Machemehl, Randy B., "Operational Cost Efficiency of Bus versus Heavy Rail: A Temporal and Regional Analysis," 50<sup>th</sup> Annual Transportation Research Forum, Portland, OR, March 2010
- Machemehl, Randy B., "Car2Go" presentation with Katherine Kortum, Damlier Corp, March 2010
- Machemehl, Randy B., "Bus-On-Shoulder Systems" presentation, with Eleni Pappas, Capital Metro, April 2010
- Machemehl, Randy B., "Predicting Incremental Transit Patronage for Bus-On-Shoulder Systems," 2010 Annual Conference of the Canadian Society for Civil Engineering, Winnipeg, Manitoba, Canada, June 2010
- Machemehl, Randy B., "Effects of Shared Lane Markings on Bicyclist and Motorist Behavior Along Multi-Lane Facilities," 2010 Annual Conference of the Canadian Society for Civil Engineering, Winnipeg, Manitoba, Canada, June 2010
- Machemehl, Randy B., "Sample of Current Research Projects," USIT 2010/Advanced Institute Summer Symposium Series, UT Austin, July 2010
- Machemehl, Randy B., "Alternative Funding Scenarios and Effects on Transportation System Condition and User Costs," Board of Directors, Associated General Contractors of Texas, Austin, Texas, July 2010
- Machemehl, Randy B., "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2010
- Machemehl, Randy B., "Field Evaluation of On-Street Bicycle Facility Control Devices," Annual Korean-American Scientific and Engineering Conference, Seattle, WA, August 2010.
- Machemehl, Randy B. "Results of New Bicycle Control Device Testing," Downtown Austin Alliance, December 2010
- Machemehl, Randy B. "Transportation Engineering," CE 301 Guest Lecturer, September 2010, January 2011
- Machemehl, Randy B. "Assessing Feasibility of Converting Two-Way Left-Turn Lane into Bus Rapid Transit Lane," 90<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2011
- Machemehl, Randy B. "Bilevel Optimization Model for Public Transportation Network Redesign Problem: Accounting for Equity Issues" 90<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2011
- Machemehl, Randy B. "Equipment Replacement Optimization, Part 1: Solution Methodology, Statistical Data Analysis, and Cost Forecasting," 90<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2011
- Machemehl, Randy B. "Operational and Safety Implications of Three Experimental Bicycle Safety Devices in Austin, Texas," 90<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 2011

- Machemehl, Randy B. "Effects of Bicycle Boxes on Bicyclist and Motorist Behavior at Intersections in Austin, Texas," *90<sup>th</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2011
- Machemehl, Randy B. "Center for Transportation Research," U.S. DOT, RITA Director, Peter Appel Visit, Center for Transportation Research, Austin, TX, February 2011
- Machemehl, Randy B. "Sample of Current Research Projects," USIT 2011/Advanced Institute Summer Symposium Series, UT Austin, July 2011
- Machemehl, Randy B. "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," New Student Orientation, Center for Transportation Research, UT Austin, August 2011
- Machemehl, Randy B. "Entry Lane Capacity Analysis of Roundabouts in Texas Using VISSIM, SIDRA, and the Highway Capacity Manual," *91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Machemehl, Randy B. "A Stochastic Dynamic Programming Approach for the Equipment Replacement Optimization with Probabilistic Vehicle Utilization." *91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Machemehl, Randy B. and Mason Gemar, "Equipment Replacement Optimization, Part II: Dynamic Programming-Based Optimization," *91<sup>st</sup> Annual Meeting of the Transportation Research Board*, Washington, DC, January 2012.
- Machemehl, Randy B. "Comparison of Regression and Artificial Neural Network Models of Bus Dwell and Passenger Activity Times (Case Study: Tehran)," *Canadian Society of Civil Engineers Transportation Specialty Conference*, Edmonton, Canada, June 2012.
- Machemehl, Randy B. "Bicycles: An Urban Travel Mode?," *USIT 2012/Advanced Institute Summer Symposium Series*, UT Austin, June 2012.
- Machemehl, Randy B. "State of Practice for Workers in Short Duration Work Zone Operations (Workshop)," *TxDOT Project 0-6640*, July 2012.
- Machemehl, Randy B. "Travel Demand Management: Partial Solution for Urban Traffic Congestion," *Oklahoma Transportation Center*, August 2012.
- Machemehl, Randy B. "Center for Transportation Research and the Department of Civil, Architectural, and Environmental Engineering Transportation Program," *New Student Orientation*, Center for Transportation Research, UT Austin, August 2012
- Machemehl, Randy B. "Transportation Engineering," *CE 301 Guest Lecturer*, September 2012.
- Machemehl, Randy B. "Fleet Management Optimization," *TxDOT Project 0-6693*, February 2013.
- Machemehl, Randy B. "Fleet Management Optimization Close-out Presentation," *TxDOT Project 0-6693*, August 2013.
- Machemehl, Randy B. "Progress Report on GIS Based Traffic Control Planning Tool," *Dallas, Texas*, March 2013.
- Machemehl, Randy. "A Methodology for Implementing Demand Management Concepts in Urban Areas," *Proceedings of the 2013 General Conference of the Canadian Society of Civil Engineers*, Montreal, Canada, June 2013.
- Machemehl, Randy. "Bicycles: An Urban Transit Mode?" *USIT 2013/Advanced Institute Summer Symposium Series*, UT Austin, June 2013.
- Machemehl, Randy. "Optimizing Traffic Control for Freeway Workzones (Workshop)," *TxDOT Project 0-6704*, August 2013.
- Machemehl, Randy. "Current Research," *Fall 2013 Research Forum*, Undergraduate Advisory Board, November 2013.
- Gemar, Mason D., Jack W. Bringardner, and Randy B. Machemehl. "Evaluating Removal of IH345 Using Subnetwork Analysis with Dynamic Traffic Assignment." Report for the Dallas District of the Texas Department of Transportation. Center for Transportation Research, the University of Texas at Austin, September 2013.
- Machemehl, Randy, "Traffic Control Planning Tools for TxDOT Construction Projects," Presentation to the staff of the Dallas District of the Texas Department of Transportation (TxDOT), September 2014.

- Machemehl, Randy. "Potential Use of Shoulders to Improve Freeway Capacity in the Fort Worth District," Presentation to the staff of the North Central Texas Council of Governments (NCTCOG) and the staff at that Fort Worth District of the Texas Department of Transportation (TxDOT), September 2014.
- Khan, Mubassira and Randy Machemehl. "An Injury Severity Study of Bicycle-Motor Vehicle Crashes." *Presented at the 93<sup>rd</sup> Annual Meeting of the Transportation Research Board, Washington, D.C., January 2014.*
- Machemehl, Randy. "Is There Any Hope for Austin Traffic?" Alumni Seminar, UT Austin CAEE Department, April 6, 2015.
- Khan, Mubassira and Randy Machemehl. "A Truck Trip Generation Model for Williamson County, Texas: Survey Analysis," *2015 Meeting of the Canadian Society of Civil Engineers, Regina, Saskatchewan, Canada, May 2015.*
- Motamed, Moggan and Randy Machemehl, "Effects of Traffic State on Freeway Incident Duration," *2015 Meeting of the Canadian Society of Civil Engineers, Regina, Saskatchewan, Canada, May 2015.*

### GRANTS AND CONTRACTS:

Machemehl, R.B.	Development of Mathematical Modeling Capabilities for Transportation Planning and Design	Center for Transportation Research	9/1/77-8/31/78
Machemehl, R.B. and Lee, C.E.	Traffic Surveying Program Improvement	Center for Transportation Research	2/1/78-2/28/80
Machemehl, R.B. and Kennedy, T.W.	Moisture Effects on Asphalt Mixtures	Center for Transportation Research	9/1/78-8/31/82
Machemehl, R.B. and Lee, C.E.	Detector Configuration and Location at Signalized Intersections	Center for Transportation Research	9/1/79-8/31/80
Machemehl, R.B. Lee, C.E. and Walton, C.M.	Vehicle Emissions and Fuel Consumption at Intersections	Center for Transportation Research	9/1/78-8/31/82
Machemehl, R.B.	Detector Placement and Its Effect on Isolated Intersection Performance	Bureau of Engineering Research	10/1/78-8/31/79
Machemehl, R.B. Lee, C.E. and Walton, C.M.	Vehicle Emissions at Intersections	Center for Transportation Research	1/79-8/81
Machemehl, R.B.	Enhancement of Materials Characterization Capabilities	Bureau of Engineering Research	7/1/79-8/31/79
Machemehl, R.B. and Lee, C.E.	Warrants for Traffic Signals Within A Coordinated Signal System	Center for Transportation Research	9/1/79-8/31/81

Machemehl, R.B. Lee, C.E. and Herman, R.	Warrants for Left-Turn Lanes and Signal Phases	Center for Transportation Research	2/1/80- 8/31/83
Machemehl, R.B.	Automatic Turning Movement Count System for Signalized Intersections	Center for Transportation Research	9/1/81- 8/31/86
Machemehl, R.B. and Walton, C.M.	Evaluation of Truck Sizes, Weights, and Tire Pressures	Center for Transportation Research	3/3/84- 8/31/87
Machemehl, R.B.	Demand Estimations for Rural Public Transportation in Texas	Center for Transportation Research	9/1/84- 8/31/85
Machemehl, R.B. and Lee, C.E.	TEXAS Diamond – A Microscopic Simulation Model for Diamond Interchanges	Center for Transportation Research	3/19/85- 8/31/87
Machemehl, R.B. and Lee, C.E.	Interactive Graphics Intersection Design System (IGIDS) Concept Design	Center for Transportation Research	9/1/86- 8/31/88
Machemehl, R.B. and Lee, C.E.	Guidelines for Operational Control of Diamond Interchanges	Center for Transportation Research	8/1/86- 8/31/88
Machemehl, R.B. and Lee, C.E.	Capacity Improvements for Urban Intersections	Center for Transportation Research	9/1/86- 8/31/88
Machemehl, R.B. and Lee, C.E.	TEXAS Friendly Model Workshop	Center for Transportation Research	1/1/87- 5/31/87
Machemehl, R.B.	Arterial Analysis Short Course	Center for Transportation Research	2/1/87- 2/28/87
Machemehl, R.B. and Lee, C.E.	Animated Graphics for Intersection Traffic Analysis	Center for Transportation Research	3/31/86- 4/1/87
Machemehl, R.B., Christiansen, Benson, Ward W.V., and Lee C.E.	The Role of Arterial Street System in Urban Mobility	Center for Transportation Research	9/1/87- 8/31/90
Machemehl, R.B.	Medians with Continuous and Intermittent Permitted Left-Turn Movements	Center for Transportation Research	9/1/87- 3/31/89

Machemehl, R.B. and Lee, C.E.	TEXAS Model Workshop	Center for Transportation Research	1/1/88- 8/31/91
Machemehl, R.B. and Lee, C.E.	Interactive Graphics Intersection Design System (IGIDS)	Center for Transportation Research	9/1/90- 8/31/93
Machemehl, R.B.	TEXAS Model Validation for Left-Turn Phasing Alternatives	Center for Transportation Research	2/1/90- 8/31/90
Machemehl, R.B.	Demonstration of Enhanced Arterial Street Traffic Flow, Reduced Fuel Consumption and User Costs Through Application of Super Street Technology	Southwest Region University Transportation Center	7/1/90- 8/31/93
Machemehl, R.B.	Automotive Diagnostic Technology	Center for Transportation Research	5/1/90- 8/31/91
Machemehl, R.B. and Lee, C.E.	TEXAS Model for Intersection Traffic - Additional Features	Center for Transportation Research	9/1/90- 8/31/92
Machemehl, R.B. and Mahmassani, H.	Pedestrian Signals: Warrants and Effectiveness	Center for Transportation Research	9/1/91- 8/31/93
Machemehl, R.B. and Euritt, Mark	Privatization of Fixed Route Bus Service	Capital Metro	9/1/92- 8/31/94
Machemehl, R.B., Harrison, Rob, Euritt, Mark, Walton, C.M., and Jarrett, James	Highway Privatization in Texas	Center for Transportation Research	9/1/92- 8/31/94
Machemehl, R.B.	Energy Conservation Through Advanced Traffic Signal Responsiveness	Southwest Region University Transportation Center	4/1/93- 8/31/94
Machemehl, R.B.	Dynamic User Oriented Location Criteria for Transit Terminal Frequency	Southwest Region University Transportation Center	4/1/93- 8/31/94
Machemehl, R.B., Euritt, Mark, and Harrison, Rob	An Evaluation of the Status, Effectiveness, and Future of Toll Roads in Texas	Center for Transportation Research	9/1/93- 8/31/94
Machemehl, R.B., Harrison, Rob, and Jarrett, James	Value of Access Rights	Center for Transportation Research	9/1/93- 8/31/94

Machemehl, R.B.	Demonstration of Reduced Energy Consumption	Southwest Region University Transportation Center	9/1/93-8/31/94
Machemehl, R.B.	Pedestrian Behavioral Characteristics	Southwest Region University Transportation Center	9/1/93-8/31/94
Machemehl, R.B., Rioux, Thomas, and Lee, C.E.	Interactive Graphics Intersection Design System	Center for Transportation Research	9/1/93-8/31/94
Machemehl, R.B. and Lee, C.E.	Montana Avenue Feasibility Study	Center for Transportation Research	9/1/93-5/31/94
Machemehl, R.B.	Driver-Vehicle Behavior During Acceleration-Deceleration	Southwest Region University Transportation Center	9/1/93-8/31/94
Machemehl, R.B.	Examining Austin Loop 1 Bottlenecks Phase II	Center for Transportation Research	9/1/94-8/31/96
Machemehl, R.B., Mahmassani, H., and Walton, C.M.	IVHS Early Deployment in the Austin Area	Center for Transportation Research	9/1/94-8/31/95
Machemehl, R.B.	Demonstration of Reduced Energy Consumption in Over-Saturated Networks	Southwest Region University Transportation Center	9/1/94-8/31/96
Machemehl, R.B.	Energy Conservation Through Advanced Traffic Signal Responsiveness	Southwest Region University Transportation Center	9/1/94-8/31/95
Machemehl, R.B. Mahmassani, H., and Williams James C.	Integrated Arterial and Freeway Operation Control Strategies for IVHS Advanced Traffic Management Systems	Center for Transportation Research	9/1/94-8/31/97
Machemehl, R.B.	Driver-Vehicle Behavior During Acceleration-Deceleration in Freeway Entrance Ramps	Center for Transportation Research	9/1/94-8/31/96
Machemehl, R.B.	Pedestrian Behavioral Characteristics	Southwest Region University Transportation Center	9/1/94-8/31/96

Machemehl, R.B.	A Methodology for Evaluating Pedestrian Intersection Safety	Southwest Region University Transportation Center	9/1/95-8/31/96
Machemehl, R.B.	Modeling Driver-Vehicle Behavior During Merge Maneuvers	Southwest Region University Transportation Center	9/1/95-8/31/96
Machemehl, R.B.	A Fuel Consumption Model for Optimizing Intersection Traffic Control	Southwest Region University Transportation Center	9/1/95-8/31/96
Machemehl, R.B.	Urban Network Analysis Methods and Applications: Dynamic Assignment and Congestion Pricing	Southwest Region University Transportation Center	9/1/95-8/31/96
Machemehl, R.B.	A Development of Methodology for Analyzing and Prioritizing Grade Separated Intersections	Center for Transportation Research	9/1/95-8/31/96
Machemehl, R.B. and Lee, C.E.	Interactive Graphics Intersection Design System (IGIDS)	Center for Transportation Research	9/1/95-8/31/96
Machemehl, R.B. and Mahmassani, H.S.	Austin IVHS Early Deployment Study	Center for Transportation Research	10/3/95-8/31/96
Machemehl, R.B.	A Fuel Consumption Model for Optimizing Intersection Traffic Control	Southwest Region University Transportation Center	9/1/96-8/31/97
Machemehl, R.B.	Urban Network Analysis Methods and Applications: Dynamic Assignment and Congestion Pricing	Southwest Region University Transportation Center	9/1/96-8/31/97
Machemehl, R.B.	Reevaluation of Ramp Design Speed Criteria	Center for Transportation Research	9/1/96-8/31/97
Machemehl, R.B., Lee, C.E.	Interactive Graphics Intersection Design System (IGIDS)	Center for Transportation Research	9/1/96-8/31/97



Machemehl, R.B.	Improving the Performance of Bus Transit Priority Signal Systems	Southwest Region University Transportation Center	9/1/96-8/31/97
Machemehl, R.B.	Examining Austin Loop 1 Bottlenecks Phase III	Center for Transportation Research	9/1/96-8/31/97
Machemehl, R.B.	Characterizing Bus Transit Passenger Wait Times	Southwest Region University Transportation Center	9/1/97-8/31/98
Machemehl, R.B.	Cedar Park Traffic Study	Center for Transportation Research	9/1/97-12/31/97
Machemehl, R.B.	Examining Austin Loop 1 Bottlenecks, Phase IV	Center for Transportation Research	9/1/97-8/31/98
Machemehl, R.B.	Improving the Performance of Light Rail Transit Priority Signal Systems	Southwest Region University Transportation Center	9/1/97-8/31/98
Machemehl, R.B.	Reevaluation of Ramp Design Speed Criteria	Center for Transportation Research	9/1/97-8/31/98
Machemehl, R.B.	Urban Network Analysis Methods and Applications: Dynamic Assignment and Congestion Pricing	Southwest Region University Transportation Center	9/1/97-8/31/98
Machemehl, R.B.	Adaptive Traffic Signal Control Concepts	Southwest Region University Transportation Center	9/1/98-8/31/99
Machemehl, R.B.	Reevaluation of Ramp Design Speed Criteria	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Urban Network Analysis Methods and Applications: Dynamic Assignment and Congestion Pricing	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Operational Flexibility for Controlled Access Facilities	Center for Transportation Research	9/1/98-8/31/99

Machemehl, R.B.	Development of Design Guidelines for the Provision of Median Access on Principal Arterials	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Examining Austin Loop1 Bottlenecks, Phase V	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Loop 1 and I-35 Bottleneck Improvements	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Characterizing Bus Transit Passenger Wait Times	Southwest Region University Transportation Center	9/1/98-8/31/99
Machemehl, R.B., Walton, C.M., and Zhang, Z.	Synthesis Study of Current Truck Configurations Used in Texas	Center for Transportation Research	9/1/98-8/31/99
Machemehl, R.B.	Operational Flexibility for Controlled Access Facilities	Center for Transportation Research	9/1/99-8/31/00
Machemehl, R.B.	Development of Design Guidelines for the Provision of Median Access on Principal Arterials	Center for Transportation Research	9/1/99-8/31/00
Machemehl, R.B., Walton, C.M., and Zhang, Z.	Synthesis Study of Current Truck Configurations Used in Texas	Center for Transportation Research	9/1/99-8/31/00
Machemehl, R.B.	Accident/Congestion Study	Center for Transportation Research	9/1/99-8/31/00
Machemehl, R.B.	Adaptive Traffic Signal control Development and Evaluation	Southwest Region University Transportation Center	9/1/99-8/31/00
Machemehl, R.B.	Characterizing Bus Transit Passenger Boarding and Deboarding Processes	Southwest Region University Transportation Center	9/1/99-8/31/00
Rioux, T., Walton, C.M., Allen, D.T., and Machemehl, R.B.	Laredo Truck Emissions	Center for Transportation Research	9/1/99-4/30/00

Rioux, T., Kockelman, K.M., Inman, R., and Machemehl, R.B.	Interactive Graphics Intersection Design System (IGIDS)	Center for Transportation Research	9/1/99- 8/31/00
Kockelman, K.M., Machemehl, R.B., and Handy, S.	Investigation of the Impacts of Frontage Roads as an Element of Controlled Access Facilities	Center for Transportation Research	9/1/99- 8/31/00
Machemehl, R.B.	Adaptive Traffic Signal Control Development and Evaluation	Southwest Region University Transportation Center	9/1/00- 8/31/01
Machemehl, R.B.	Characterizing Transit Passenger Access Decisions	Southwest Region University Transportation Center	9/1/00- 8/31/01
Middleton, D., Harrison, R., and Machemehl, R.B.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/00- 8/31/01
Rioux, T. and Machemehl, R.B.	Interactive Graphics Intersection Design System (IGIDS) Enhancements	Center for Transportation Research	9/1/00- 8/31/01
Harrison, R. and Machemehl, R.B.	Commercial Motor Vehicle Long-Term Needs Assessment Study	Center for Transportation Research	9/1/00- 8/31/01
Kockelman, K.M., Handy, S., and Machemehl, R.B.	Investigation of the Impact of Frontage Roads as an Element of Controlled Access Facilities	Center for Transportation Research	9/1/00- 8/31/01
Zhang, Z. and Machemehl, R.B.	Cradle-to-Grave Monitoring of Pavements and PMIS Functionality Enhancement Planning	Center for Transportation Research	9/1/00- 8/31/01
Machemehl, R.B. and Tsyganov, A.	Traffic Control for Complex Work Zones (TxDOT 0-4021)	Center for Transportation Research	9/1/00- 8/31/01
Machemehl, R.B.	Optimizing Transit network Patterns	Southwest Region University Transportation Center	9/1/01- 8/31/02
Machemehl, R.B.	Adaptive Traffic Signal Control Development and Evaluation	Southwest Region University Transportation Center	9/1/01- 8/31/02

Middleton, D., Harrison, R., and Machemehl, R.B.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/01- 8/31/02
Kockelman, K.M. Machemehl, R.B. and Handy, S.	Investigation of the Impacts of Frontage Roads as an Element of Controlled Access Facilities	Center for Transportation Research	9/1/01- 8/31/02
Rioux, T. and Machemehl, R.B.	Evaluation & Enhancement of the TEXAS MODEL for Intersection Traffic's Capabilities for Intersection Collision Avoidance	Center for Transportation Research	9/1/01- 8/31/02
Zhang, Z. and Machemehl, R.B.	Cradle-to-Grave Monitoring of Pavements and PMIS Functionality Enhancement Planning	Center for Transportation Research	9/1/01- 8/31/02
Tsyganov, A., Liapi, K, and Machemehl, R.B.	Improving Urban Intersection and Arterial Traffic Control Plans (TxDOT 0-4266)	Center for Transportation Research	9/1/01- 8/31/02
Machemehl, R.B. and Tsyganov, A.	Traffic Control for Complex Work Zones	Center for Transportation Research	9/1/01- 8/31/02
Middleton, D., Harrison, R., and Machemehl, R.B.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/02- 8/31/03
Machemehl, R.B.	Characterizing Transit Passenger Access Decisions	Southwest Region University Transportation Center	9/1/02- 8/31/03
Machemehl, R.B.	Adaptive Traffic Signal Control Development and Evaluation	Southwest Region University Transportation Center	9/1/02- 8/31/03
Kockelman, K.M. Machemehl, R.B. and Handy, S.	Investigation of the Impacts of Frontage Roads as an Element of Controlled Access Facilities	Center for Transportation Research	9/1/02- 8/31/03
Zhang, Z. and Machemehl, R.B.	Cradle-to-Grave Monitoring of Pavements and PMIS Functionality Enhancement Planning	Center for Transportation Research	9/1/02- 8/31/03
Tsyganov, A., Liapi, K, and Machemehl, R.B.	Improving Urban Intersection and Arterial Traffic Control Plans (TxDOT 0-4266)	Center for Transportation Research	9/1/01- 8/31/02

Persad, K. and Machemehl, R.B	Trans Texas Corridor ROW Royalty Payment Feasibility	Center for Transportation Research	9/1/02-8/31/03
Prozzi, Machemehl, Matthews, Hall, Wheat	Emulsified Diesel Emission Testing, Performance Evaluation and Operational Assessment	Center for Transportation Research	9/1/02-8/31/03
Machemehl, R.B., Tsyganov, Alexei	Optimum Level of Roadside Information to Reduce Driver Stress (TxDOT 0-4621)	Center for Transportation Research	2003-2005
Machemehl, R.B.	Characterizing Transit Passenger Access Decisions	Southwest Region University Transportation Center	9/1/03-8/31/04
Machemehl, R.B.	Adaptive Traffic Signal Control Development and Evaluation	Southwest Region University Transportation Center	9/1/03-8/31/04
Machemehl, R.B.	Adaptive Traffic Signal Control: Advancing the Concept	Southwest Region University Transportation Center	9/1/03-8/31/04
Machemehl, R.B.	Using Random Search, Local Search and Exhaustive Search Methods to Optimize Transit Network Patterns	Southwest Region University Transportation Center	9/1/03-8/31/04
Kockelman, K., Persad, K., Luskin, D., Walton, C.M., and Machemehl, R.B.	The Role of Toll Projects in Enhancing Texas Transportation	Center for Transportation Research	9/1/03-8/31/04
Kockelman, K., Bhat, C., Luskin, D., and Machemehl, R.B.	Public Perceptions of Toll Roads	Center for Transportation Research	9/1/03-8/31/04
Kockelman, K. and Machemehl, R.B.	Investigation of the Impact of Frontage Roads as an Element of Controlled Access Facilities	Center for Transportation Research	9/1/03-8/31/04
Zhang, Z. and Machemehl, R.B.	Cradle-to-Grave Monitoring of Pavements and PMIS Functionality Enhancement Planning	Center for Transportation Research	9/1/03-8/31/04
Machemehl, R.B. and Tsyganov, A.	Improving Urban Intersection and Arterial Traffic Control Plans (TxDOT 0-4266)	Center for Transportation Research	9/1/03-8/31/04

Machemehl, R.B. and Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/03-8/31/04
Machemehl, R.B. and Persad, K.	Trans Texas Corridor ROW Royalty Payment Feasibility	Center for Transportation Research	9/1/03-8/31/04
Prozzi, Machemehl, Matthews, Hall, Wheat	Emulsified Diesel Emission Testing, Performance Evaluation and Operational Assessment	Center for Transportation Research	9/1/03-8/31/04
Zhang, Z., Machemehl, R.B., Harrison, R., and Handy, S.	Austin Triangle Transportation Study	Center for Transportation Research	9/1/03-8/31/04
Machemehl, R.B.	Predicting Truck Tire Pressure Effects Upon Pavement Performance	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R.B.	Using Random Search, Local Search and Exhaustive Search Methods to Optimize Transit Network Patterns	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R.B.	Adaptive Traffic Signal Control Development and Evaluation	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R.B.	Adaptive Traffic Signal Control: Advancing the Concept (\$3,391)	Center for Transportation Research	9/1/04-8/31/05
Kockelman, K., Bhat, C., Luskin, D., Machemehl, R.	Public Perceptions of Toll Roads	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R., Luskin, D., Persad, K.	Operational and Safety Impacts When Retrofitting Bicycle Lanes	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R., Tsyganov, Alexei	Analysis of Edge Line Treatments	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R., Tsyganov, Alexei	Improving Urban Intersection and Arterial Traffic Control Plans (TxDOT 0-4266)	Center for Transportation Research	9/1/04-8/31/05
Machemehl, R., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/04-8/31/05

Zhang, Z., Machemehl, R.B., Harrison, R., and Handy, S.	Austin Triangle Transportation Study	Center for Transportation Research	9/1/04- 8/31/05
Machemehl, R.B.	Predicting the Relationship between Vehicle Tire Pressure and Pavement Distress	Southwest Region University Transportation Center	9/1/05- 8/31/06
Machemehl, R.B.	Adaptive Traffic Signal Control: Advancing the Concept	Southwest Region University Transportation Center	9/1/05- 8/31/06
Machemehl, R.B., Luskin, D., Persad, K.	Operational and Safety Impacts When Retrofitting Bicycle Lanes	Center for Transportation Research	9/1/05- 8/31/06
Machemehl, R.B.	Best Practices for Separation Devices between Toll Lanes and Free Lanes	Center for Transportation Research	9/1/05- 8/31/06
Machemehl, R.B., Tsyganov, A.	Analysis of Edge Line Treatments	Center for Transportation Research	9/1/05- 8/31/06
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/05- 8/31/06
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/05- 8/31/06
Zhang, Z., Machemehl, R.B.	Austin Triangle Transportation Study	Center for Transportation Research	9/1/05- 12/31/05
Machemehl, R.B.	Formulation, Solution Methods, and Applications of the Commuter Rail Circulator Network Design Problem	Southwest Region University Transportation Center	9/1/06- 8/31/07
Machemehl, R.B.	Application of Heuristic solution Methods to the Public Transportation Driver Scheduling Problem	Southwest Region University Transportation Center	9/1/06- 8/31/07
Machemehl, R.B., Hallett, I.	Operational and Safety Impacts for Bicyclists Using Roadways with On-Street Parking	Center for Transportation Research	9/1/06- 8/31/07
Machemehl, R.B. Liu, F., Cheu, K.	Comprehensive Planning and Design Guidelines for Incorporating a Bus Rapid Transit Scenario to the Analysis of Texas Highway Corridors	Center for Transportation Research	9/1/06- 8/31/07

Machemehl, R.B.,	Review of Manual of Uniform Traffic Control Devices and Speed Zoning Procedures (MUTCD)	Center for Transportation Research	12/15/06-5/31/07
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/06-8/31/07
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/06-8/31/07
Machemehl, R.B.	Transit Ridership Forecasting Tool	Southwest Region University Transportation Center	9/1/07-8/31/08
Machemehl, R.B.	Application of Heuristic Solution Methods to the Public Transportation Driver Scheduling Problem	Southwest Region University Transportation Center	9/1/07-8/31/08
Machemehl, R.B. Liu, F., Cheu, K.	Comprehensive Planning and Design Guidelines for Incorporating a Bus Rapid Transit Scenario to the Analysis of Texas Highway Corridors	Center for Transportation Research	9/1/07-8/31/08
Machemehl, R.B.	Peak Period Shoulder Use of Urban Expressways	Center for Transportation Research	6/1/08-12/31/08
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/07-8/31/08
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/07-8/31/08
Machemehl, R.B.	Transit Ridership Forecasting Tool	Southwest Region University Transportation Center	9/1/08-8/31/09
Machemehl, R.B.	Examining the Role of Trip Length in Commuter Decisions to Use Public Transportation	Southwest Region University Transportation Center	9/1/08-8/31/09



Machemehl, R.B.	City of Austin Study of the Implementation of Shared Lane (Sharrows) & Colored Bicycle Lane Markings, Advanced Stop Lines (Bike Boxes), Colored Bicycle Lanes, and Bicyclists “May Use Full Lane” Signs	Center for Transportation Research	2/4/09-5/1/10
Machemehl, R.B.	Peak Period Shoulder Use of Urban Expressways	Center for Transportation Research	9/1/08-8/31/09
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/08-8/31/09
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/08-8/31/09
Machemehl, R.B.	Predicting Incremental Ridership due to Buses on Shoulder Implementation	Southwest Region University Transportation Center	9/1/09-8/31/10
Machemehl, R.B.	Examining the Role of Trip Length in Commuter Decisions to Use Public Transportation	Southwest Region University Transportation Center	9/1/09-8/31/10
Machemehl, R.B.	City of Austin Study of the Implementation of Shared Lane (Sharrows) & Colored Bicycle Lane Markings, Advanced Stop Lines (Bike Boxes), Colored Bicycle Lanes, and Bicyclists “May Use Full Lane” Signs	Center for Transportation Research	2/1/09-8/31/10
Machemehl, R.B.	Peak Period Shoulder Use of Urban Expressways	Center for Transportation Research	9/1/09-8/31/10
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/09-8/31/10
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/09-8/31/10
Machemehl, R.B., Wei Fan, Ron Matthews	Equipment Replacement Optimization	Center for Transportation Research	9/1/09-8/31/10
Waller, S.T., Machemehl, R.B.	Guideline Development for Implementing Roundabouts in Texas	Center for Transportation Research	9/1/09-8/31/10

Machemehl, R.B., Zhang, Z.	Texas Good Roads	Center for Transportation Research	6/1/10- 8/31/10
Machemehl, R.B., Persad, K.	Strategic Research Program	Center for Transportation Research	2/1/10- 8/31/10
Machemehl, R.B.	FY11 Reporting, Publications, and Information Services in Support of Implementation	Center for Transportation Research	9/01/10 - 8/31/11
Machemehl, R.B.	FY11 Reporting, Publication, and Information Services in Support of Research	Center for Transportation Research	9/01/10 - 8/31/11
Machemehl, R.B.	Using Real Time Traveler Demand Data To Optimize Commuter Rail Feeder Systems	Southwest Region University Transportation Center	9/1/10- 8/31/11
Machemehl, R.B., Persad, K.	Strategic Research Program	Center for Transportation Research	9/1/10- 8/31/11
Waller, S.T., Machemehl, R.B.	Guideline Development for Implementing Roundabouts in Texas	Center for Transportation Research	9/1/10- 8/31/11
Machemehl, R.B., Wei Fan, Ron Matthews	Equipment Replacement Optimization	Center for Transportation Research	9/1/10- 8/31/11
Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/10- 8/31/11
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/10- 8/31/11
F. Leite, R. B. Machemehl, D. Seedah	State of the Practice for Workers in Very Short Duration Work Zone Operations	Center for Transportation Research	9/1/10- 8/31/12
Machemehl, R.B., Wei Fan, Ron Matthews	Equipment Replacement/Retention Decision Making	Center for Transportation Research	9/1/11- 8/31/13

Machemehl, R.B., Harrison, R.	Construction Expediting and Work Zone Traffic Control Concepts for Dallas TxDOT District	Center for Transportation Research	9/1/11- 8/31/12
Machemehl, R.B., Persad, K.	Technical Assistance to the Austin District of TxDOT	Center for Transportation Research	9/1/11- 8/31/12
Waller, S.T. and Machemehl, R.B.	Center for Transportation and Electricity Convergence (CTEC)	Center for Transportation Research	9/01/11 – 8/31/12
Machemehl, R.B. and Duthie, J.	Reduction of Motorists’ Delay and Crash Potential Upstream from Highway Work Zones	Center for Transportation Research	9/01/11 – 8/31/13
Machemehl, R.B.	TxDOT TAP Agreement	Center for Transportation Research	9/01/11 – 8/31/13
Machemehl, R.B.	Real Time Optimization of Passenger Collection for Commuter Rail	Southwest Region University Transportation Center	12/1/12- 3/31/14
Machemehl, R.B.	Development of an Interactive GIS Based Work Zone Traffic Control	Southwest Region University Transportation Center	5/01/12 - 8/31/13
Duthie, J. and Machemehl, R.B.	Center for Transportation and Electricity Convergence (CTEC)	Center for Transportation Research	9/01/12 – 8/31/14
Machemehl, R.B.	Preparation of a Revision to the Land Development Code (LDC) Subdivision Regulations and the Transportation Criteria Manual (TCM) for the City of Austin, Texas	Center for Transportation Research	8/15/12 - 9/29/12
Machemehl, R.B.	Improving the Reliability of Automated Freeway Incident Detection Using Multiple Real Time Data Sources	Southwest Region University Transportation Center	12/1/12- 3/31/14
Machemehl, R.B.	Real Time Optimization of Passenger Collection for Commuter Rail Systems	Southwest Region University Transportation Center	12/1/12- 3/31/14
Machemehl, R.B. Persad, K.	TxDOT Administration Research: Task 18 (FY13) Alternative Fuels Analysis	Center for Transportation Research	3/1/13- 6/30/13

Griffin, L. Leite, F. Machemehl, R.B.	Stretch and Flex Program for TxDOT Operations	Center for Transportation Research	5/1/13-3/31/14
Khwaja, Nabeel Machemehl, Randy O'Brien, William Harrison, Robert	A Cooperative Interagency Technical Services Contract FY 2014-16 for the Dallas TxDOT District	Center for Transportation Research	8/22/13 – 8/31/16
Persad, Khali Machemehl, Randy Zhang, Zhanmin Walton, C. Mike	Technical Support for the Austin District of TxDOT, Task 4: Dedicated Truck Lanes and No-truck Lanes	Center for Transportation Research	9/1/13 – 10/31/15
Persad, Khali Machemehl, Randy Zhang, Zhanmin Walton, C. Michael	Technical Support for the Austin District of TxDOT, Task 5: Early Warning Device for Low-Height Bridges	Center for Transportation Research	9/1/13 – 10/31/15
Persad, Khali Machemehl, Randy Zhang, Zhanmin Walton, C. Michael	Technical Support for the Austin District of TxDOT, Task 6: Pavement Deterioration Early Warning System	Center for Transportation Research	9/1/13 – 10/31/15
Walton, C. Michael Machemehl, Randy Ardekani, Siamak, Loftus-Otway Lisa	North Central Texas Council of Governments Contract for University Project – Shoulder Utilization Task	Center for Transportation Research	9/1/13 – 9/31/16
Khawaja, Nabeel Machemehl, Randy	Technical Services for Developing a Three-Dimensional (3-D) and Four-Dimensional (4-D) Visualization Model	Center for Transportation Research	10/31/12 – 12/31/2014
Islam, Rashed Machemehl, Randy Duthie, Jennifer	IH35 Operational Analysis for Williamson County	Center for Transportation Research	10/3/13 – 7/15/18
Machemehl, Randy	Technical Services to the Capital Metropolitan Transportation Authority: Interlocal Cooperation Contract	Center for Transportation Research	11/25/2014–9/30/2016
Machemehl, Randy	Transportation Supporting Energy Development in Tamaulipas, Mexico	Center for Transportation Research	3/1/2015–3/31/2016
Machemehl, Randy AlRukaibi, Duaij	Innovations to Improve Transportation Agency Core Mission Efficiency (Sponsored by the Kuwait Foundation for the Advancement of Sciences)	Center for Transportation Research	Contract Pending

**PH.D. SUPERVISIONS COMPLETED:**

Wu, Ching-Shuenn	1982
Lin, Han-Jei	1982
Lee, Chung-won	1982
Ahn, Gye-Hyeong	1997
Kou, Cheng-Chen	1997
Liao, Tsai-Yun	1997
Otis, Stephanie	1998
Hunter, Michael	2003
Fan, Wei	2004
Gonzalez-Ayala, Salvador	2005
Wang, Feng	2005
Shenoda, Michael	2006
Lownes, Nicholas	2007
Haire, Ashley R.	2009
Kortum, Katherine	2012
Yu, Yao	2012
Gemar, Mason	2013
Bringardner, Jack	2014
Tang, Shoupeng	2014
Bouhou, Nour	2015
Khan, Mubassira	2015
Motamed, Moggan	2016
Torres, Pamela	2016

**M.S. SUPERVISIONS COMPLETED:**

Wu, Hsin-Hsing	1980
Athalye, Pramod	1980
Masog, Thomas B.	1981
McGennis, Robert B.	1981
Odell, Willis Wade	1981
Simeonidis, Charlabos	1982
Hall, David	1985
Mechler, Ann McCaffrey	1985
Denney, Richard	1985
Stuard, Robert	1985
Faria, David Anthony	1987
Collins, Rick	1988
Azam, Sophia	1989
Marcus, Christopher	1989
Lopez, Carlos	1989
Modur, Sanjay	1989
King, Steve	1990
Acampora, Marc	1991
Derr, Ray	1991
Yeh, Shu-Pyng	1991
Jones, Rebecca	1992
Savgur, Srinivas	1992
Dedeitch, Borivoje	1992
Dowds, Jacqueline	1992
Chen, Xiaoguan	1992
Lang, Larry	1992
Efstathiadis, Stilianos	1992

Karachepone, John	1992
Venable, Diane	1993
Westerfield, Heidi	1993
Durrenberger, Randall	1994
Hunter, Michael	1994
Jen, Hen-Yi	1994
Chang, Yi-Ping	1994
Kouroushiaklis, Dinos	1994
Zen, Toni Tung-Yee	1995
Nair, Rohini	1995
Lubarsky, Scott	1996
Seiling, Stacy	1996
Valez-Gallego, Amado	1996
Varada, Sreedhar	1996
Islam, Rashed	1996
Frisbie, Todd	1996
Garrow, Michael	1997
Tassoulas, Ioannis	1997
Taylor, Beth	1998
Gilani, Syed Amer Saeed	1998
Belfield, Sam	1998
Moore, Craig	1998
Salek, Mir-Davood	1999
Fei, Qiyue	1999
Betti, Nicole	1999
Toppen, Alan	2000
O'Shea, Jillyn	2000
Madi, Marwan	2001
Leitner, Sara	2001
Natal-Nieves, Ivonne	2001
Jung, Hyunkyung	2002
Hong, Sung Ryung	2002
Bollich, Eric	2002
Gossen, Rachel	2002
Smith, Karen	2002
Qatan, Ahmed	2003
Fluitt, Travis	2003
Mani, Akshay	2004
Lownes, Nicholas	2005
Vasquez, Lucio	2005
Warrenchuk, Nick	2006
Hlavacek, Ian	2007
Vitek, Michael	2007
Huang, Tian	2007
Suescun, David	2007
Davidson, Michael	2007
Torrance, Kristen	2007
Spurgeon, Eric	2008
Wang, Yue	2008

Gao, Rui	2008
Pruner, Kristopher	2008
Snell, Tara	2009
Seedah, Dan	2009
Kortum, Katherine	2009
Karl, Andrew	2009
Yu, Yao	2010
Pappas, Eleni	2010
Brady, John	2011
Mills, Alison	2011
Goldberg, Brian	2011
Loskorn, Jeff	2011
Motamed, Moggan	2012
Fournier, Christopher	2012
Bringardner, Jack	2012
Mansfield, Charles Taylor	2013
Kurker, Michael Gerald	2013
Ratke, Stephen	2014
Gutekunst, Jake	2014
Alrashidan, Ahmad	2015
McElduff, Kelsey	2015

**PH.D. IN PROGRESS:**

Neaz Murshed  
Amber Chen  
Ahmad Alrashidan

**M.S. IN PROGRESS:**

Alexander VanHout  
Patrick Jordan  
Tianxin Li  
Hao Liu



## **VITA:**

Dr. Randy B. Machemehl is an active and internationally recognized scholar in the Transportation System Engineering field. He has had an active research career, having been principal or co-principal investigator on more than 200 research studies for the U. S. Department of Transportation, Federal Highway Administration, Urban Mass Transportation Administration, The Texas Department of Transportation, and The Texas Governor's Office. Results of Dr. Machemehl's research have been reported in numerous journals and technical publications.

A significant part of Dr. Machemehl's research with automobile traffic flow phenomena has produced new methods that have become current engineering practice. The wide acceptance of his methods of treating traffic flow problems caused by intersecting traffic streams resulted in the unusually wide dissemination of his technical research reports. Several of his research efforts have produced computer software that is receiving very wide use. Two such software products (a traffic simulation package and a traffic analysis package) have, for several years, been distributed internationally by the Federal Highway Administration's public domain software distribution center (McTrans, University of Florida) and by a major private sector computer hardware manufacturer.

Dr. Machemehl has developed a wide range of traffic data acquisition experience over two decades of active engineering practice. He was a staff member of Wilbur Smith and Associates before joining the faculty of UT Austin in 1978 where he currently serves as a Professor of Civil Engineering. He has published over 300 technical reports and papers and has been very active in professional organizations, having served in the American Society of Civil Engineers and The Institute of Transportation Engineers at both the state and national levels.