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Center for Excellence in Rural Safety
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EDUCATION

1993-1997 Texas A&M University, College Station, TX
Ph.D. - Civil Engineering, December 1997

1988-1989 Cornell University, Ithaca, NY
M.E. - Civil Engineering-Transportation, May 1989

1985-1988 University of Wisconsin-Madison, Madison, WI
B.S. - Civil and Environmental Engineering, May 1988

ACADEMIC-RELATED EXPERIENCE

January 2008 to
to Present Research Associate/Manager, University of Minnesota
Center of Excellence in Rural Safety
Minneapolis, MN

Assisting with and/or managing research work that focuses on the primary objective and focus areas of the Center for Excellence in Rural Safety. These focus areas include the rural roadway safety impacts of human behavior, emergency response, technologies, and policy. Specifically involved with an investigation into the status and quantification of policy-based safety measures included in State Highway Safety Plans. Also continue to direct the Deer-Vehicle Crash Information and Research Center pooled fund effort. Dr. Knapp is a Research Scholar at the Center for Transportation Studies.

August 2006 to
December 2007 Associate Research Scientist, Texas Transportation Institute
College Station, TX

Researcher involved with project evaluating driver understanding, recognition, and consideration of pavement marking/signing delineation combinations. Project includes video simulation surveys, test site driver analysis, and case study location data collection. Speed and lane placement impacts of delineation combinations will be studied. Also participating in project focused on the design and durability of pavement marking on roadway seal coats, and expertise is being applied to projects evaluating variable speed limit sign usage in work zones and creating guidelines for the proper selection of temporary pavement marking. Currently listed as a potential trainer for several Federal Highway Administration training

courses, assisting with the Federal Highway Administration Intersection Focus States Initiative, and also completing intersection safety audits and training as a consultant.

Recently completed work as a safety expert for National Cooperative Highway Research Program (NCHRP) Project 25-27: Evaluation of the Use and Effectiveness of Wildlife Crossings. NCHRP 25-27 tasks have applied currently acceptable safety data analysis methods to the evaluation of potential wildlife crossing sites and their safety impacts. Project team will create a wildlife crossing planning, installation, maintenance, and monitoring decision tool. Also acting as the Director of the Deer-Vehicle Crash Information Clearinghouse (DVCIC) and Deer-Vehicle Crash Information and Research (DVCIR) Center. The DVCIR Center is a pooled fund effort that will continue and expand upon the activities completed by the DVCIC during the last five years. The DVCIR Center project is currently funded by more than \$300,000 from eight states, Federal Highway Administration, and two Texas organizations. These states include Iowa, Minnesota, Wisconsin, Ohio, Maryland, New Hampshire, New York, and Connecticut. The lead agency for the DVCIR Center is the Federal Highway Administration Office of Natural and Human Environment. The DVCIR Center will continue the efforts of the DVCIC but also begin to fund research related to the reduction of deer-vehicle crash countermeasures. Have been published and invited to present on this subject in Canada, Japan, and throughout the United States (including at a Congressional Caucus briefing). Presented a paper (to be published) and participated on two panels related to this subject at the 2007 Transportation Research Board annual meeting. Also currently a member of the steering committee for two national animal-vehicle collision studies.

Jan. 2001 to
July 2006

Assistant Professor/Program Director, University of Wisconsin-Madison
Director, Deer-Vehicle Crash Information Clearinghouse
Engineering Professional Development Department
Civil and Environmental Engineering Department
Affiliate Faculty
Institute of Environmental Studies
Transportation Policy and Management Program
Madison, WI

Involved with numerous transportation safety, design, and operation efforts (35 percent of this appointment). Principal investigator and Director of a \$500,000 multi-year, multi-agency, and multi-state project for Wisconsin Department of Transportation called the Deer-Vehicle Crash Information Clearinghouse (www.deercrash.com). Clearinghouse completed projects related to deer crossing signs and crashes, county-level crash prediction models, data collection and management summaries, countermeasures toolbox (the most extensive document of its type), a ten-year multi-state data trend analysis, and a strategic agenda for deer-vehicle crash reduction.

The Clearinghouse also offers the only annual symposium on the deer-vehicle crash subject. In 2005, there were 10 sponsors for this annual meeting and more than 65 people attended. Successfully pursued approximately \$310,000 in funding from multiple states to create a pooled fund effort (described previously) to continue and expand the work of the Clearinghouse. Also initiated creation of large interdisciplinary team that successfully competed for NCHRP Project 25-27 (also described previously). Principal investigator for approximately \$74,400 of this \$569,000 NCHRP project led by Utah State University.

Also acted as principal investigator for a systematic intersection and run-off-the-road crash summary and analysis project for Wisconsin. This \$193,000 project was completed with researchers from Marquette University and included the first statewide evaluation of these crash types. Tools to apply the results of this project were also developed as a separate activity (\$50,000). Acted as a principal researcher for the University of Wisconsin Traffic Operations and Safety Lab. Also continued to evaluate and investigate the safety and operational impacts of four- to three-lane cross section conversions. Acted as thesis advisor and supported five graduate students. Also involved and supported one or two undergraduate students each year with these projects.

Selected to be part of an expert team from the United States and the report author (\$11,000) for a Federal Highway Administration international scan tour on the management and organization of highway safety programs in four European countries. The scan tour results, available at www.international.fhwa.dot.gov, have been used by the Federal Highway Administration, but also have been useful to all levels of government designing highway safety programs and policies.

Created, offered, and/or taught in more than 40 professional development training courses (9 to 12 per year) throughout the United States as part of the Engineering Professional Development (EPD) Department faculty (65 percent of this appointment). EPD is a completely self-supported College of Engineering department and faculty are required to develop effective and successful outreach/extension courses to generate revenue. Transportation courses offered were focused on the Highway Capacity Manual, signal design and operation, urban street design, traffic fundamentals, neighborhood traffic, roundabouts, parking lots and access, intersection safety and operations, two-lane rural roadway design, bicycle/pedestrian facilities, traffic impact analysis, and the application of signal evaluation software. The average evaluation score for these courses was 4.3 out of 5.0 and they had an average attendance of 34. Also provided a highway safety course seven times each year for the Wisconsin Local Technical Assistance Program (LTAP). Approximately 3,000 transportation professionals were trained in these EPD and LTAP courses, and more than \$535,000 in net revenues were acquired. In addition, developed and offered contract

courses for the Wisconsin (\$15,000) and Minnesota (\$15,900) Departments of Transportation, Federal Highway Administration, and the Institute of Transportation Engineers with the National Highway Institute (\$9,100).

Teaching within an effective extension/outreach course requires the proper selection of subjects, an acceptable use of application examples, and a background that practicing professionals believe is credible. These characteristics, among others, also improve the effectiveness of undergraduate and graduate course teaching. Dr. Knapp received high evaluation ratings for his EPD teaching (individual course evaluation scores and number of hours taught available upon request) and as an undergraduate/graduate educator (see next job position description).

Aug. 1998 to
Dec. 2000

Assistant Professor, Iowa State University
Civil, Construction, and Environmental Engineering
Manager, Traffic Engineering and Traffic Safety Programs, Center for
Transportation Research and Education

Ames, IA

Taught undergraduate/graduate traffic engineering and operations course (Fall 1998 and 1999), and assisting with senior capstone class (Spring/Fall 1999) and long distance web-based University of Iowa undergraduate winter maintenance class (Fall 1999). Taught undergraduate/graduate advanced highway design and transportation safety courses (Spring 2000), and undergraduate introductory highway design (Fall 2000). Also assisted with introductory transportation and advanced highway design courses (Spring 1999), and supervised/developed an independent study for one student in the use and application of traffic simulation models (Spring 1999). Received average student evaluation scores between 3.9 and 4.5 in these courses.

Principal investigator for research projects related to the mobility and safety aspects of winter storm events (\$106,000), the construction of a traffic engineering and safety informational series (\$45,000) [teamed with a University of Iowa faculty member], and the conversion of four-lane undivided roadways to three-lane cross sections (\$49,000). Also principal investigator of project constructing Iowa traffic control and pavement marking handbook for cities and counties (\$58,000) and self-funded winter weather speed choice study (approx. \$11,000). Co-principal investigator of a self-funded project on remote sensing applications in transportation (approx. \$12,000), effectiveness of roadway safety improvements (\$50,000), and a systematic approach to the identification of high crash locations (\$126,000). Also co-principal investigator on project evaluating the effectiveness of temporary speed humps in small cities (approx. \$50,000). These projects support at least six graduate and four undergraduate students.

Major professor or co-major professor for four Masters students, and committee member for three Masters student and two Doctorate students. Supported three undergraduate student workers. Also advised Institute of Transportation Engineers student group, and have helped with Chi Epsilon student group. Presented American Society of Civil Engineers ExCEED Teaching approach to department faculty, and authored paper on approach at American Society of Engineering Education annual meeting. Served on Civil Engineering Curriculum Committee (Spring/Fall 2000). Asked to join ASCE ExCEED committee near end of time period at ISU.

Spring 1998 Adjunct Faculty/Instructor, Lawrence Technological University
Southfield, MI

Taught an undergraduate highway engineering course. Constructed lectures and created exams, homework, and project assignments. Class subject material included transportation history, legislation, and administration; introduction to transportation planning; traffic flow fundamentals; roadway design criteria and controls; roadway/intersection/interchange design; roadside safety design; project evaluation; and high-occupancy vehicle facility design.

1994 to Oct. 1997 Graduate Research Assistant, Texas Transportation Institute
Graduate Teaching Assistant, Texas A&M University
College Station, TX

Collected, analyzed, and evaluated transportation control measure (TCM) data nationwide. TCMs are transportation improvements required in certain air quality non-attainment areas of the United States. Produced two comprehensive research reports on the federally mandated use, evaluation, and monitoring of TCMs. Involved with the completion of bus roadway section of a High-Occupancy Vehicle (HOV) Systems Manual.

Assisted in the instruction of graduate-level street and highway geometric design class and transportation planning computer lab (TRANPLAN emphasis). Helped in the preparation and development of class projects in rural highway, urban arterial, and freeway design. Prepared, reviewed, and graded homework assignments, exams, and class project reports. Taught (full-time) three weeks of graduate-level geometric design class, and several individual classes in introductory transportation, geometric design, transportation planning, and introductory statistics.

Completed dissertation research on the temporal variations of daily traffic flow profiles on urban access-controlled roadways.

Spring 1989 Graduate Teaching Assistant, Cornell University
Ithaca, NY

Assisted in the instruction and organization of an undergraduate introductory transportation class. Helped teacher critically evaluate relevance and difficulty of intended homework assignment questions, and graded homework assignments and projects. Graded and proctored exams.

INDUSTRIAL EXPERIENCE/CONSULTING

Nov. 1997
to Aug. 1998

Transportation Engineer, CH2M HILL, Inc.
Detroit, MI

Assisted with the completion of functional specifications for the Policy Review Module (PRM) of the Interactive Highway Safety Design Model (IHSDM) for the Federal Highway Administration. The PRM is a pioneering attempt to extract and precisely describe the quantifiable portions of the transportation policy used by the majority of the United States. Functional specifications will be used for the fast-track computerization of the criteria described. Unquantifiable policy criteria that require engineering judgment will be addressed with an expert system application. Provided direction and assistance with the construction of this system.

Also acted as project engineer for the Blue Water Bridge operational study in Port Huron, MI. Issues at this international crossing included vehicular weaving, safety, and the capacity of the bridge, toll facilities, and inspection stations. Improvements considered included additional bridge and approach capacity, operational and locational changes, enhanced geometric design, and intelligent transportation system (ITS) measures.

1990 to 1993

Transportation Engineer, CH2M Hill, Inc.
Chicago, IL

Specialized in traffic engineering and transportation planning projects. Project engineer for a design feasibility study of several alternative highway alignments from Chicago to Peoria, IL, and the locational and planning elements of several U.S. 18 bypass and interchange alternatives in Mason City, IA. The latter project required the preparation of an interchange justification report for approval by the Federal Highway Administration. Also acted as a project engineer in a study of an I-74 redesign in Peoria, IL. Distributed design year traffic within the I-74 study area, designed horizontal and vertical interchange alignment functional plans, and organized an origin-destination survey to investigate the feasibility of a new Illinois River crossing. Managed budget, staff time, and schedule for two Strategic Regional Arterial (SRA) studies in suburban Chicago, IL. Developed plans and project reports for these corridors that included recommendations for improvements in geometry, signal operation, public transit, and access

control. Also evaluated the impacts and feasibility of a bus turnaround at the Linden Street train station in Wilmette, IL, analyzed the expected operation of five State Trunk Highway 80/U.S. 14 roadway alternatives through the commercial business district of Richland Center, WI, and assisted in the production of new signing plans for I-96 in Detroit, MI and State Highway M-46 from Saginaw to Port Sanilac, MI.

Attended an introductory course on the operation and use of the Quick Response System travel forecasting tool. Also attended internal informational session on the use of the TModel transportation simulation planning and analysis software package. Organized internal informational sessions and presented information on the following subjects: level of service analysis of all-way-stop-controlled intersections, the impact of the Intermodal Surface Transportation Efficiency Act on roadway construction or rehabilitation in urban areas, the four-step travel demand forecasting process, and the use of spreadsheet software to improve project management, budgeting, and scheduling. Also prepared several project proposals and presented information at numerous public meetings and hearings.

1989 to 1990

Transportation Engineer, McDonough & Scully, Inc.
Natick, MA

Completed numerous traffic impact and access planning studies for the following land uses: a proposed 150,000-square-foot retail center, a ski resort expansion, a miniature golf course, and several residential subdivisions. Collected, analyzed, and evaluated traffic volume and accident data, and the geometrics and traffic control of the specific site impact area. Used *Highway Capacity Manual* software extensively. Produced study reports and presented conclusions to client and/or at public meetings.

Organized data collection, analyzed existing and expected parking conditions, and assisted in the production of a comprehensive parking system plan for Salem State College in Salem, MA. Also drew parking lot layouts for suggested structure locations, and helped evaluate parking and enforcement procedures.

Participated in an access study for the Worcester, MA commercial business district, a design feasibility study of several bypass routes and an interchange with I-190 in Holden, MA, and an investigation of the expansion and redesign alternatives for an I-91 interchange in Holyoke, MA.

CURRENT RESEARCH PROJECTS

Research Manager and Associate. Center for Excellence in Rural Safety. Project; Investigation of Policy-Based Statewide Safety Measure Quantification. Federal Highway Administration. Present to 2010.

Principal Investigator (Working on update of contracts for Administration of Center \$90,000 and \$40,000). Deer-Vehicle Crash Information and Research Center Pooled Fund (Currently eight states and Federal Highway Administration have committed a total of \$320,000+). Federal Highway Administration. March 2007 to March 2009.

COMPLETE RESEARCH PROJECTS

Researcher. Improved Temporary Traffic Control Guidelines for Urban Freeway Interchanges (\$291,500). Texas Department of Transportation. September 2005 to August 2007.

Principal Investigator (Continuation Contract Pending). NCHRP 25-27: Evaluation of the Use and Effectiveness of Wildlife Crossings (Approx. \$25,000 remaining of \$74,400 subcontract). Utah State University. Total project budget: \$569,000. Project schedule: June 2004 to May 2007.

Principal Investigator. Deer-Vehicle Collision (DVC) Information Clearinghouse Initiation Project (\$500,000). Wisconsin Department of Transportation. Several graduate and undergraduate students supported.

Volunteer Expert Advisor. Handbook on Livability Impacts of Four-Lane Undivided to Three-Lane Roadway Conversions. Principal Investigator: Jennifer Rosales. Internal competition for funding at Parsons Brinkerhoff, New York, NY.

Researcher. Intersection Safety Countermeasures Plan and Pilot Development. (Knapp portion: Approx. \$50,000 of \$168,000). Wisconsin Department of Transportation. One graduate student supported.

Principal Investigator. Traffic Crash Analysis Support (\$5,100), Wisconsin Department of Transportation. One graduate student supported.

Principal Investigator. Systematic Evaluation of Intersection and Run-off-the Road Crash Locations (\$188,043). Wisconsin Department of Transportation. Subcontracted with Marquette University (\$86,000) for run-off-the-road analysis. Two graduate students supported.

Principal Investigator. Support to bring International President of the Institute of Transportation Engineers to UW-Madison (\$1,700). Women in Science and Engineering Leadership Institute.

Principal Investigator. Traffic Volume and Heavy Vehicle Impacts on Four-Lane to Three-Lane Conversions (Approx. \$16,000). Start-up Funds. One graduate student supported.

Report Facilitator. Managing and Organizing Comprehensive Highway Safety (\$11,000). International Technology Scanning Tour. American Association of State Transportation Officials and Federal Highway Administration. NCHRP Project 20-36.

Co-Principal Investigator. Effectiveness of Temporary Speed Humps (\$50,000). Iowa Department of Transportation. One graduate student supported.

Co-Principal Investigator. Systematic Identification of High Crash Location (\$126,000). Iowa Highway Research Board, Iowa Department of Transportation. One graduate student supported.

Principal Investigator. The Safety and Operational Impacts of Winter Storm Events in the Freeway Environment (\$106,000). Iowa Highway Research Board, Iowa Department of Transportation. One graduate student supported.

Principal Investigator. Guidelines for the Conversion of Four-Lane Undivided Roadways to Three-Lane Two-Way Left-Turn Lane Facilities – Phase 1 (\$49,000). Iowa Department of Transportation. One graduate student supported.

Principal Investigator. Traffic Safety and Engineering Informational Series (\$45,000). Iowa Department of Transportation. Two undergraduate students supported.

Co-Principal Investigator. Iowa Traffic Control and Pavement Marking Handbook (\$58,000). Iowa Highway Research Board, Iowa Department of Transportation. One undergraduate student supported.

Principal Investigator. Vehicle Type and Winter Weather Speed Choice (approx. \$11,000). Self-funded. One graduate student supported.

Co-Principal Investigator. Remote Sensing Applications in Transportation (approx. \$12,000). Self-funded. One graduate student supported.

Co-Principal Investigator. Effectiveness of Roadway Safety Improvements (\$50,000). Iowa Department of Transportation. One graduate or undergraduate student supported.

COMPLETE OUTREACH CONTRACT COURSES

Principal Contractor. Offered *Traffic Impacts of Land Development* course to Minnesota Department of Transportation on May 17-18, 2005 (\$15,900). Overall Evaluation Grade - 4.1/5.0.

Subcontractor. Develop and pilot an *Advanced Intersection Design* training course (\$15,000). Wisconsin Department of Transportation. More than 86 percent of the evaluations rated the presentation and training as good or better.

Subcontractor. Develop and pilot a *Designing and Operating Intersections for Safety* training course (\$9,100). Institute of Transportation Engineers contract with Federal Highway Administration (Currently part of National Highway Institute curriculum).

Principal Contractor. Develop and hold a one-day course, *Getting Started with Traffic Calming*. Offered for the Federal Highway Administration as part of Context Sensitive Design Conference on September 5, 2001 in Missoula, MT.

PUBLICATIONS

Peer-Reviewed:

K.K. Knapp, P. Carlson, and A. Pike. Pavement Marking Materials and Application Techniques on Large Aggregate Seal Coats. In the *2008 Transportation Research Board Annual Meeting Compendium*. Transportation Research Board, National Research Council, Washington, D.C., 2008.

K.K. Knapp, A. Witte, and C. Kienert. Crash or Carcass Data: A Critical Definition and Evaluation Choice. Accepted for publication in the *Transportation Research Record*. Transportation Research Board, National Research Council, Washington, D.C., 2007.

K.K. Knapp and X. Yin. Safety Data and Deer Crossing Sign Installation. *ITE Journal on the Web*. Institute of Transportation Engineers, Washington, D.C., May 2006.

K.K. Knapp. Crash Reduction Factors for Deer-Vehicle Crash Countermeasures: State-of-the-Knowledge and Suggested Safety Research Needs. In the *Transportation Research Record 1908*. Transportation Research Board, National Research Council, Washington, D.C., 2005.

K.K. Knapp. Improving Local Roadway Safety with Lessons from Europe. In *Public Works Management & Policy*. Volume 10, Number 1, Sage Publications, Thousand Oaks, CA, 2005.

J.A. Rosales and K.K. Knapp. Livability Impacts of Geometric Design Cross-Section Changes from Road Diets. In the *3rd International Symposium on Highway Geometric Design Compendium*. Transportation Research Board, National Research Council, Washington, D.C., Held in Chicago, Illinois, June/July 2005.

K.K. Knapp. Roadway Design Decisions and Animal-Vehicle Collisions. In the *3rd International Symposium on Highway Geometric Design Compendium*. Transportation Research Board, National Research Council, Washington, D.C., Held in Chicago, Illinois, June/July 2005.

K.K. Knapp, A.J. Khattak, and T. Oakasa. Development of a Countywide Deer-Vehicle Crash Frequency Model. In the *2005 Transportation Research Board Annual Meeting Compendium*. Transportation Research Board, National Research Council, Washington, D.C., January 2005.

K.K. Knapp. Defining and Solving the Deer-Vehicle Crash Problem: The Results and Implications of a Regional Data Collection and Management Survey. In the *2005 Transportation Research Board Annual Meeting Compendium*. Transportation Research Board, National Research Council, Washington, D.C., January 2005.

K.K. Knapp and X. Yin. Deer-Vehicle Crash Patterns and Proposed Warning Sign Installation Guidelines. In the *2004 Transportation Research Board Annual Meeting Compendium*. Transportation Research Board, National Research Council, Washington, D.C., 2004.

K.K. Knapp, D. Walker, and E. Wilson. Challenges and Strategies for Local Road Safety Training and Technology Transfer. In the *Transportation Research Board 1819*, Transportation Research Board, National Research Council, Washington, D.C., 2003.

S.L. Hallmark, K.K. Knapp, and C.D. Grant. Evaluating Speed Differences between Cars, LDTs, and Vans for Emissions Modeling. Accepted for publication in the *Journal of Transportation Engineering*, American Society of Civil Engineers, 2003.

E.D. Padget, K.K. Knapp, and G.B. Thomas. Investigation of Winter Weather Sport Utility Vehicle, Pick-Up Truck, and Passenger Car Speed Variability. In the *Transportation Research Record 1779*. Transportation Research Board, National Research Council, Washington, D.C., 2001.

A.J. Khattak and K.K. Knapp. Interstate Highway Crash Injuries During Winter Snow and Non-Snow Events. In the *Transportation Research Record 1746*. Transportation Research Board, National Research Council, Washington, D.C., 2001. Note: This paper received the 2001 Young

Researcher Award from the Transportation Research Board Committee on Safety Data Analysis and Evaluation (A3B05).

K.K. Knapp and L.D. Smithson. The Use of Mobile Video Data Collection Equipment to Investigate Winter Weather Vehicle Speeds. In the *Transportation Research Record 1745*. Transportation Research Board, National Research Council, Washington, D.C., 2001.

A.J. Khattak and K.K. Knapp. Snow Event Effects on Interstate Highway Crashes. *Journal of Cold Regions Engineering*, Volume 15, Number 4, American Society of Civil Engineers, Reston, VA, December 2001.

S.L. Hallmark, K.K. Knapp, and E.D. Padget. Estimating Vehicle Activity Variability Between Sub-Classes of Light-Duty Vehicles and their Implications for Fleet Mix Estimates on Emissions. In the proceedings for the *Air & Waste Management Association 94th Annual Conference and Exhibition*. To be held in Orlando, FL, June, 2001.

K.K. Knapp. Learning to Teach Engineers: The Applicability and Compatibility of One Approach. In the *1999 American Society for Engineering Education Annual Conference Proceedings*. American Society for Engineering Education, Washington, D.C., Held in St. Louis, MO, June 2000.

K.K. Knapp and T.M. Welch. The Three-Lane Cross Section: A Mitigation Measure for Urban Four-Lane Undivided Roadways. In the *2nd International Symposium on Highway Geometric Design Compendium*. Held in Mainz, Germany, June 2000.

K.K. Knapp and L.D. Smithson. Winter Storm Event Volume Impact Analysis Using Multiple Source Archived Monitoring Data. In *Transportation Research Record 1700*. Transportation Research Board, National Research Council, Washington, D.C., 2000, pp. 10-16.

A.J. Khattak, K.K. Knapp, K. L. Giese, and L.D. Smithson. Safety Implications of Snowstorms on Interstate Highways. In the *2000 Transportation Research Board Annual Meeting Compendium*. National Research Council, Transportation Research Board, Washington, D.C., January 2000.

K.K. Knapp. Literature Review of Highway-Railroad Grade Crossing Sight Distance Assumptions. *ITE Journal*. Institute of Transportation Engineers, Washington, D.C., November 1999.
Institute of Transportation Engineers Technical Council Committee 5P-5A. *Capacities of Triple Left-Turn Lanes*. Institute of Transportation Engineers, Washington, D.C., April 1995.

*Non-Peer or
Abstract-Only
Reviewed:*

K.K. Knapp. Four-Lane to Three-Lane Conversion Case Study: State Highway Through a Small Town. In the *2007 Institute of Transportation Engineers Annual Meeting*, Institute of Transportation Engineers, Washington, D.C., Held in Pittsburgh, PA, August 2007.

K.K. Knapp. Four-Lane to Three-Lane Conversions: Update and Case Study. Presented at the *3rd Urban Street Symposium*, Transportation Research Board, National Research Council, Washington, D.C., Held in Seattle, WA, June 2007.

K.Knapp. Summary of Strategic Agenda for Deer-Vehicle Crash Reduction: Data Collection, Research, Funding, Partnerships, and Technology Transfer. Presented at the *International Conference on Ecology and Transportation*, Federal Highway Administration, Center for Transportation and the Environment, North Carolina State, Raleigh, NC, Held in Little Rock, AR, May 2007.

C. Kienert and K.K. Knapp. Older Driver Crash Experience at High-Speed Intersections. In the *2006 Institute of Transportation Engineers Annual Meeting Compendium*, Held in Milwaukee, WI. Institute of Transportation Engineers, Washington, D.C., August 2006.

J. Campbell and K.K. Knapp. Geometric Categories as Intersection Safety Evaluation Tools. In the *Proceedings for the Mid-Continent Transportation Research Symposium*, Center for Transportation Research and Education, Iowa State University, Ames, IA, August 2005.

J. Campbell and K.K. Knapp. Alternative Crash Severity Measures and the Implications on Intersection Ranking Results. In the *Proceedings for the Mid-Continent Transportation Research Symposium*, Center for Transportation Research and Education, Iowa State University, Ames, IA, August 2005.

K.K. Knapp. Local Components of Successful Safety Programs in Europe. In the *2005 Institute of Transportation Engineers Annual Meeting Compendium*, Held in Melbourne, Australia. Institute of Transportation Engineers, Washington, D.C., August 2005.

K.K. Knapp. National Implications of Regional Deer-Vehicle Crash Data Collection, Management, and Trends. In the *Proceedings of the International Conference on Ecology and Transportation*, Federal Highway Administration, Center for Transportation and the Environment, North Carolina State University, Raleigh, NC, Held in San Diego, CA, August 29-September 2, 2005.

K.K. Knapp. Results of Recent Deer-Vehicle Crash Information Clearinghouse Activities. In the *Proceedings of the International Conference on Ecology and Transportation*, Federal Highway Administration, Center for Transportation and the Environment, North Carolina State, Raleigh, NC, Held in Lake Placid, NY, August 24-29, 2003.

K.K. Knapp, K.L. Giese, and W. Lee. Urban Four-Lane Undivided to Three-Lane Roadway Conversion Guidelines. Published in the *Proceeding for the Mid-Continent Transportation Research Symposium*, Center for Transportation Research and Education, Iowa State University, Ames, IA, Held August 21-22, 2003.

K.K. Knapp, T. Oakasa, and X. Yi. Deer-Vehicle Crash Countermeasures Effectiveness Research Review. Published in the *Proceeding for the Mid-Continent Transportation Research Symposium*, Center for Transportation Research and Education, Iowa State University, Ames, IA, Held August 21-22, 2003.

K.K. Knapp, K.L. Giese, and W. Lee. Urban Minor Arterial Four-Lane Undivided to Three-Lane Conversion Feasibility: An Update. Published in the *Proceedings for the 2nd Urban Street Symposium*, Transportation Research Board, National Research Council, Washington, D.C., Held in Anaheim, CA, July 28-30, 2003. Note: This paper was chosen as one of four best at conference.

K.K. Knapp. Development of a Deer-Vehicle Crash Countermeasure Toolbox. In the *2002 Institute of Transportation Engineers Annual Meeting Compendium*, Annual Meeting held in Philadelphia, PA. Institute of Transportation Engineers, Washington, D.C., August 2002.

D. Smith, K.K. Knapp, and S.L. Hallmark. Speed Impacts of Temporary Speed Humps in Small Iowa Cities. In the *2002 Institute of Transportation Engineers Annual Meeting Compendium*, Annual Meeting held in Philadelphia, PA. Institute of Transportation Engineers, Washington, D.C., August 2002.

K. Giese and K.K. Knapp. CORSIM Sensitivity Analysis of Four to Three-Lane Cross Section Conversion Operational Impacts. In the *2001 Institute of Transportation Engineers Annual Meeting Compendium*, Annual Meeting held in Chicago, IL. Institute of Transportation Engineers, Washington, D.C., August 2001.

J. Stribiak and K.K. Knapp. Comparison of Four Methods to Locate Red Light Enforcement Cameras. Abstract accepted for presentation at the 2001 Institute of Transportation Engineers Annual Meeting in Chicago, IL, August 2001. Paper and presentation not done by primary author.

K.K. Knapp, T.M. Welch, and J.A. Witmer. Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section: Factors to Consider. In the *1999 Institute of Transportation Engineers Annual Meeting Compendium*. Annual meeting held in Las Vegas, NV. Institute of Transportation Engineers, Washington, D.C., August 1999. Note: This paper won outstanding paper of the year from the Traffic Engineers Council.

K.K. Knapp. Investigation of Volume, Safety, and Vehicle Speeds During Winter Storm Events. In the *Proceedings of the Ninth Maintenance Management Conference*. National Research Council, Transportation Research Board, Washington, D.C., Held in Juneau, AK, July 2000, Conference Proceedings 23, 2001.

K.K. Knapp and L.D. Smithson. The Use of Multiple Data Sources to Evaluate the Volume and Safety Impacts of Winter Storm Events. In the *2000 Institute of Transportation Engineers Annual Meeting Compendium*. Annual meeting held in Nashville, TN. Institute of Transportation Engineers, Washington, D.C., August 2000.

K.K. Knapp, J.W. Stoner, and T.M. Welch. Statewide Traffic Engineering and Safety Informational Series Survey: The Results. In the *Proceeding of the Mid-Continent Transportation Symposium 2000*. Midwest Transportation Consortium, Iowa State University, Ames, IA, May 2000.

K.K. Knapp, L.D. Smithson, and A.J. Khattak. The Mobility and Safety Impacts of Winter Storm Events in a Freeway Environment. In the *Proceeding of the Mid-Continent Transportation Symposium 2000*. Midwest Transportation Consortium, Iowa State University, Ames, IA, May 2000.

K.K. Knapp, T.M. Welch, and J. Stoner. Statewide Traffic Engineering and Safety Informational Series Survey: The Results. In the *Proceeding of the Mid-Continent Transportation Symposium 2000*. Midwest Transportation Consortium, Iowa State University, Ames, IA, May 2000.

K.K. Knapp, J. Stoner, and T.M. Welch. Local Technical Assistance Through a Statewide Traffic Engineering and Safety Informational Series. In the *2000 Institute of Transportation Engineers International Conference on Transportation Operations: Moving Into the 21st Century Proceedings*. Institute of Transportation Engineers, Washington, D.C., Held in Irvine, CA, April 2000.

D.W. Harwood, J.E. Hummer, and K.K. Knapp. Operational and Safety Effects of Highway Geometrics at the Turn of the Millennium and Beyond. In *Transportation in the New Millennium*. Transportation Research Board, National Research Council, Washington, D.C. 2000.

K.K. Knapp, T.M. Welch, and J.A. Witmer. Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section: Factors to Consider. In the *1999 Institute of Transportation Engineers Annual Meeting Compendium*. Annual meeting held in Las Vegas, NV. Institute of Transportation Engineers, Washington, D.C., August 1999.

K.K. Knapp. Safety Review of Arterial High-Occupancy Vehicle (HOV) Facilities. In the *1998 Institute of Transportation Engineers Annual Meeting Compendium*. Annual meeting held in Toronto, Ontario, Canada. Institute of Transportation Engineers, Washington, D.C., August 1998.

K.K. Knapp. Safety-Related Characteristics of Arterial High-Occupancy Vehicle (HOV) Roadway and Lane Treatments. In the *Graduate Student Papers on Advanced Traffic Management Systems*. Report No. SWUTC/95/72194-4. Texas A&M University, College Station, TX, August 1995, pp. G-1 to G-39.

*Chapter/Book
Reviews:*

Reviewed and suggested improvements to a series of chapters of the Institute of Transportation Engineers *Freeway and Interchange Geometric Design Handbook*. Listed as a reviewer in final publication.

Invited Papers:

K.K. Knapp. Defining the Deer-Vehicle Crash Problem in the United States: National Estimates and Regional Data Collection. To be included in the *Proceedings of Wild Animals and Traffic Accidents: Monitoring, Analysis, and Prevention Techniques*. Part of the 9th International Mammalogical Congress. The Science Council of Japan and the Mammalogical Society of Japan. Sapporo, Hokkaido, Japan. July 31 to August 5, 2005 in Sapporo, Japan.

K.K. Knapp. The Status of Safety-Based Deer-Vehicle Crash Countermeasure Research in the United States. To be included in the *Proceedings of Wild Animals and Traffic Accidents: Monitoring, Analysis, and Prevention Techniques*. Part of the 9th International Mammalogical Congress. The Science Council of Japan and the Mammalogical Society of Japan. Sapporo, Hokkaido, Japan. July 31 to August 5, 2005 in Sapporo, Japan.

White Paper: K. K. Knapp. *Briefing Paper on Key Issues and Potential Action Items for a National Agenda to Improve Intersection Safety*. Invited white paper written by Professor Knapp for the Transportation Research Board Committee A3A08 – Operational Effects of Geometrics. Paper distributed at the Conference to Set a National Agenda on Intersection

Safety, Held in September 2001, Milwaukee, WI. Located at www.ite.org/library/IntersectionSafety/index.asp.

K.K. Knapp. Traffic Calming Basics. Requested article from American Society of Civil Engineers for *Civil Engineering* magazine. American Society of Civil Engineers, Washington, D.C., January 2000.

Project Reports:

K.K. Knapp and A. Witte. *Strategic Agenda for Reducing Deer-Vehicle Crashes*. Report completed as part of the Deer-Vehicle Crash Information Clearinghouse Initiation project. SPR Project Number 0092-01-11. Report Number DVCIC-04. Midwest Regional University Transportation Center, Madison, WI, July 2006.

J. Bissonette, P. Cramer, N. Newhouse, K.K. Knapp, B. Persaud, I. Brakop, C. Lyons, et al. *Evaluation of the Use and Effectiveness of Wildlife Crossings –Second Interim Report*. Recently completed report as part of NCHRP 25-27: Evaluation of the Use and Effectiveness of Wildlife Crossings. National Cooperative Highway Research Program, Transportation Research Board, National Academy of Sciences, Washington, D.C., June 2006.

K.K. Knapp, C. Kienert, and A. Witte. *Statewide and Upper Midwest Summary of Deer-Vehicle Crash and Related Data from 1993 to 2003*. Report completed as part of the Deer-Vehicle Crash Information Clearinghouse Initiation project. SPR Project Number 0092-01-11. Report Number DVCIC-03. Midwest Regional University Transportation Center, Madison, WI, December 2005.

K.K. Knapp, J. Campbell, and C. Kienert. *Intersection Crash Summary Statistics for Wisconsin – Final Report*. Wisconsin Department of Transportation, Madison, WI, June 2005.

K.K. Knapp, J. Campbell, and C. Kienert. *Intersection Geometry and Crash Characteristics – Intersection-Related Crash Data: 2001 to 2003* (Companion Report to “*Intersection Crash Summary Statistics for Wisconsin*”). Wisconsin Department of Transportation, Madison, WI, June 2005.

K.K. Knapp and J. Campbell. *Intersection Crash Summary Statistics for Wisconsin – Preliminary Final Report*. Wisconsin Department of Transportation, Madison, WI, December 2004.

J. Bissonette, P. Cramer, N. Newhouse, K.K. Knapp, B. Persaud, I. Brakop, C. Lyons, et al. *Evaluation of the Use and Effectiveness of Wildlife Crossings –First Interim Report*. Completed report as part of NCHRP 25-27: Evaluation of the Use and Effectiveness of Wildlife Crossings. National

Cooperative Highway Research Program, Transportation Research Board, National Academy of Sciences, Washington, D.C., December 2004.

K. K. Knapp, X. Yi, T. Oakasa, W. Thimm, E. Hudson, and C. Rathmann. *Deer-Vehicle Crash Countermeasure Toolbox: A Decision and Choice Resource*. Completed as part of the Deer-Vehicle Crash Information Clearinghouse Initiation project. SPR Project Number 0092-01-11. Report Number DVCIC-02. Midwest Regional University Transportation Center, Madison, WI, June 2004.

K. K. Knapp, W. Thimm, and C. Rathmann. *Regional Survey of Deer Population, Vehicle Travel, and Deer-Vehicle Crash Information Collection and Management*. Completed as part of the Deer-Vehicle Crash Information Clearinghouse Initiation project. SPR Project Number 0092-01-11. Report Number DVCIC-01. Midwest Regional University Transportation Center, Madison, WI, April 2004.

K.K. Knapp (Report Writer). *Managing and Organizing Comprehensive Highway Safety in Europe*. United States Department of Transportation, Federal Highway Administration, International Technology Exchange Program, Washington, D.C. Available at www.international.fhwa.dot.gov, April 2003.

K.K. Knapp and K. Giese. *Guidelines for the Conversion of Urban Four-Lane Undivided Roadways to Three-Lane Two-Way Left-Turn Lane Facilities*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, June 2001.

S.J. Andrlle, K.K. Knapp, T. McDonald, D. Smith, and R.J. Schechinger. *Iowa Traffic Control Devices and Pavement Markings: A Manual for Cities and Counties and Development of a Traffic Control Devices and Pavement Markings Manual for Iowa's Cities and Counties with a Survey of Common Practices*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, April 2001.

R. Souleyrette, A. Kamyab, Z. Hans, K.K. Knapp, A. Khattak, R. Basavaraju, and B. Storm. *Systematic Identification of High Crash Locations*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, May 2001.

K.K. Knapp and J. Stoner. *Traffic and Safety Informational Series*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, October 2000.

K.K. Knapp, D. Kroeger, and K. Giese. *Mobility and Safety Impacts of Winter Storm Events in a Freeway Environment— Final Report*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, February 2000.

K.K. Knapp, D. Kroeger, and K. Giese. *Mobility and Safety Impacts of Winter Storm Events in a Freeway Environment— Interim Report*. Iowa Department of Transportation and the Center for Transportation Research and Education, Ames, IA, June 1999.

K.K. Knapp (Dissertation). *Temporal Variations in Daily Traffic Flow Profiles of Urban Access-Controlled Roadways*. Texas A&M University, College Station, TX, December 1997.

J.C. Brunk, M.D. Middleton, K.K. Knapp, C.H. Walters, T.J. Lomax, and H.S. Oey. *Planning for Optimal Roadway Operations in the Design Year*. Report No. FHWA/TX-97/1483-1F. Texas Department of Transportation, Austin, TX, November 1996.

K.K. Knapp, K.S. Rao, J.A. Crawford, and R.A. Krammes. *The Evaluation and Monitoring of Transportation Control Measures*. Report No. FHWA/TX-96/1279-10F. Texas Department of Transportation, Austin, TX, September 1995.

K.K. Knapp, K.S. Rao, J.A. Crawford, and R.A. Krammes. *The Use and Evaluation of Transportation Control Measures*. Report No. FHWA/TX-94/1279-6. Texas Department of Transportation, Austin, TX, September 1994.

*Newsletter
Articles:*

K.K. Knapp. ExCEED: A View from the Gallery. *American Society of Civil Engineers – Iowa Newsletter*. Fall 1999.

K.K. Knapp. Off-Street Parking: The Forgotten Link and How Many spaces in a Parking Lot. In the *Technology News* (newsletter published by the Center for Transportation Research and Education), Transportation Technology for Iowa's Local Governments and the Local Technical Assistance Program (LTAP), Ames, Iowa, June/July 1999.

K.K. Knapp. Traffic Calming Concepts and Traffic Calming – Iowa Style. In the *Technology News* (newsletter published by the Center for Transportation Research and Education), Transportation Technology for Iowa's Local Governments and the Local Technical Assistance Program (LTAP), Ames, Iowa, April/March 1999.

K.K. Knapp. Driver Expectancy, Traffic Control, and Roadway Design. In the *Technology News* (newsletter published by the Center for Transportation Research and Education), Transportation Technology for Iowa's Local Governments and the Local Technical Assistance Program (LTAP), Ames, Iowa, December 1998/January 1999.

INVITED SPEAKER EVENTS*International and National:*

Transportation Research Board (National Research Council) Annual Meeting, Washington D.C. *Development and Content of Strategic Agenda for Reducing Deer Vehicle Crashes*. Session 347. Held in January 2007.

Transportation Research Board (National Research Council) Annual Meeting Presenter and Panel Member, Washington D.C. *Deer-Vehicle Crash Research Summary Findings*. Session 507. Held in January 2007.

Transportation Research Board (National Research Council) Annual Meeting, Workshop Washington D.C. *Wildlife Considerations and Roadway Development: Planning to Maintenance*. January 22, 2006.

The 9th International Mammalogical Congress. Sapporo, Hokkaido, Japan. *Defining the Deer-Vehicle Crash Problem in the United States: National Estimates and Regional Data Collection*. July 31 to August 5, 2005.

The 9th International Mammalogical Congress. Sapporo, Hokkaido, Japan. *The Status of Safety-Based Deer-Vehicle Crash Countermeasure Research in the United States*. July 31 to August 5, 2005.

American Association of State Highway Transportation Officials Standing Committee on Environment, Subcommittee on Natural Resources Annual Meeting, Chicago, IL. *Evaluation of the Use and Effectiveness of Wildlife Crossings*. April 2005.

Lifesavers Conference, Charlotte, NC. *Defining and Investigating the Deer-Vehicle Crash Problem*. March 13, 2005.

Congressional Briefing, Rayburn House Office Building, Washington D.C. *Deer-Vehicle Crash Problem and Potential for Reduction*. March 10, 2005.

Transportation Research Board (National Research Council) Annual Meeting, Washington D.C. *Transportation Professionals and Urban Street Design: Changing the Process – Education to Application*. January 2005.

Transportation Association of Canada Annual Meeting, Quebec City, Quebec, Canada. *NCHRP Wildlife Crossing Project Summary and Deer-Vehicle Crash Information and Research Center Proposal*. Presentation to Environment Council on September 18, 2004.

30th International Forum on Traffic Records and Highway Information Systems, Nashville, TN. *Data Concerns Related to Defining and Solving the Deer-Vehicle Crash Problem*. July 25-29, 2004.

Transportation Research Board (National Research Council) Annual Meeting, Washington, D.C. *Urban Minor Arterial Four-Lane Undivided to Three-Lane Conversion Feasibility: An Update*. Note: The paper for this presentation was chosen as one of the top four best at the 2003 Urban Street Symposium and invited for presentation. January 2004.

Transportation Research Board (National Research Council) Annual Meeting in Washington, D.C. *Deer-Vehicle Countermeasures Toolbox*. January 2004.

Transportation Association of Canada Annual Meeting, St. Johns, Newfoundland, Canada. *The Deer-Vehicle Crash Countermeasure Toolbox: An Application Decision and Choice Resource*. Presented as part of the Wildlife/Vehicle Collision Workshop Research discussion. September 24, 2003.

Transportation Research Board (National Research Council) Annual Meeting in Washington, D.C. *Upper Midwest Deer-Vehicle Crash Information Clearinghouse*, January 2002.

*Regional and
Local:*

South Dakota Insurance Alliance Educational Clinic, Sioux Falls, SD. *Deer-Vehicle Crashes: Defining Data, Countermeasures, and Future Actions*. November 8, 2006.

Wisconsin Institute of Transportation Annual Traffic Engineering Workshop, Pewaukee, WI. *Intersection Crash Summary*. April 2005.

Wisconsin Governor's Safety Conference, Appleton, WI. *Deer Vehicle Information Clearinghouse Update*. August 2004.

Wisconsin Institute of Transportation Annual Traffic Engineering Workshop, Pewaukee, WI. *Intersection Safety and Improvements*. March 2004.

Wisconsin County Highway Association Meeting, Appleton, WI. *Deer-Vehicle Crash Information Clearinghouse Update*. January 2004.

Wisconsin County Highway Association Meeting, Wisconsin Dells, WI. *Intersection and Driveway Safety*. June 2003.

Interview and article – For “Fewer Lanes, Safer Roads” article in the *Wisconsin Engineer*, Volume 107, Number 3, April 2003.

Wisconsin Institute of Transportation Annual Traffic Engineering Workshop. Pewaukee, WI. *The Conversion of Urban Four-Lane Undivided Roadways to Three-Lane Facilities*, March 2003.

District IV Institute of Transportation Engineers Annual Meeting, St. Paul, MN. *Regional Deer-Vehicle Crash Information Clearinghouse Update*, June 19-21, 2002.

Wisconsin Institute of Transportation Annual Traffic Engineering Workshop. Pewaukee, WI. *An Introduction to the Urban Traffic Engineering Council*, April 2002 (Prepared by K. Knapp and presented by Don Walker).

District IV Institute of Transportation Engineers Annual Meeting, Wisconsin Dells, WI. A Statewide Traffic Engineering and Safety Informational Series, June 21-22, 2001.

Wisconsin Institute of Transportation Annual Traffic Engineering Workshop, Pewaukee, WI, *Crash Analysis and Intersection Improvement Measures*, April 2001.

Wisconsin Governors Safety Conference, Appleton, WI, *Deer Vehicle Crashes – Progress Toward Reduction*, Summer 2001.

PROFESSIONAL SOCIETIES

Institute of Transportation Engineers (ITE) – Associate Member – Former Member of Executive Committee of Transportation Education Council, and reviewer for Institute publication *Freeway and Interchange Design Handbook*

American Society of Civil Engineers (ASCE) – Member

American Society for Engineering Education (ASEE) - Member

Transportation Research Board – Affiliate - Member of the Operational Effects of Geometrics Committee (Active friend of Geometric Design Committee and several of its subcommittees, and the Animal-Vehicle Crash Subcommittee), Member of Ecology and Transportation Committee and Critical Issues Working Group Chair of Joint Subcommittee on Intersections, Past Chair of Measures of Effectiveness Task Group and

Member of the Joint Subcommittee for the Development of a Highway Safety Manual

Steering Committee member for TRB/ITE National Intersection Safety Agenda meeting and Technical Contract subcommittee and co-chair for TRB 3rd International Symposium on Geometric Highway Design (also assisted with conference workshop development).

Paper reviewer for Transportation Journal (ASCE), 2nd and 3rd International Symposium on Geometric Highway Design (TRB), Operational Effects of Geometrics Committee (TRB), Animal-Vehicle Crash Subcommittee (TRB), and Geometric Design Committee (TRB)

AWARDS OR HONORS

Federal Highway Administration Eisenhower Graduate Fellowship

Member – Tau Beta Pi, Chi Epsilon, and Phi Kappa Phi

National Science Foundation Engineering Education Scholars Program

One of Four Best Conference Papers – 2nd *Urban Street Symposium*, Transportation Research Board, National Research Council, Washington, D.C., July 2003. Selection allowed presentation at January 2004 Transportation Research Board Annual meeting.

Invited Team Member and Report Writer/Facilitator. Federal Highway Administration International Scan Tour: *Managing and Organizing Comprehensive Highway Safety*.

2001 Young Researcher Award from the Transportation Research Board Committee on Safety Data Analysis and Evaluation (Paper Co-Author).

Iowa State University Project LEA/RN weekly workshop participant (Spring 1999)

American Society of Civil Engineers – Excellence in Civil Engineering Education (ExCEED) Workshop Participant (Summer 1999)

1999 Institute of Transportation Engineers Annual Meeting Outstanding Traffic Engineering Council Paper (Presented in August 2000)

PROFESSIONAL REGISTRATION

Professional Engineer in Illinois, Michigan, Iowa, and Wisconsin.