

RESUME: IDA VAN SCHALKWYK

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ACADEMIC BACKGROUND

- PhD (Civil Engineering), 2008 – Arizona State University
- M. Eng (Transportation Engineering), 2000 – University of Pretoria, South Africa
- B. Hons (Transportation Engineering), 1998 – University of Pretoria, South Africa
- B. Eng (Civil Engineering), 1995 – University of Pretoria, South Africa

PROFESSIONAL HISTORY

YEARS	POSITION AND ORGANIZATION
February 2008 - date	Assistant Professor (Snr Research), School of Civil and Construction Engineering, College of Engineering, Oregon State University, Corvallis, OR.
July 2006 – February 2008	Faculty Associate, Department of Civil and Environmental Engineering, Ira A. Fulton School of Engineering, Arizona State University, AZ.
July 2005 – June 2006:	Research Professional, Department of Civil and Environmental Engineering, Ira A. Fulton School of Engineering, Arizona State University, AZ.
2005	Senior Research Specialist, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Arizona.
2003 – 2005	Research Specialist, Department of Civil Engineering and Engineering Mechanics, University of Arizona, Arizona.
2001 – 2003	Assistant Research Scientist, Center for Transportation Safety, Texas Transportation Institute, Texas
2000 – 2001	Faculty, Department of Civil Engineering, School of Engineering and the Built Environment, Rand Afrikaans University, South Africa
1999 – 2000	Traffic Engineer: BCP Engineers, South Africa
1998 – 2001	Independent road safety engineering consultant, South Africa (Managing Director: Dolce Via Projects): Development of the <i>South African Road Safety Manual</i> (1998-1999); Perform pedestrian safety audits and road safety audits; present road safety audit workshops for various agencies; conduct safety related studies for transportation agencies (1999-2001).
1997 – 1998	Traffic Engineer, Traffic Flow Division, City Council of Pretoria, South Africa
1996 – 1997	Traffic Engineer, African Consulting Engineers Inc, South Africa
1996	Traffic Engineer, South African National Department of Transportation

CURRENT AND RECENTLY COMPLETED PROJECTS

- Principal Investigator: *Cost Effective Safety Improvements for 2-Lane Rural Roads*, funded by Washington State Department of Transportation, December 2005 – February 2008.
- *Technical Evaluation of Scottsdale 101 Photo Enforcement Demonstration Program*, funded by Arizona Department of Transportation, October 2006 to date.
- NCHRP 8-44(02): *Transportation Safety Planning: Forecasting the Safety Impacts of Socio-Demographic Changes and Safety Countermeasure Investments*, January 2007 to date.
- NCHRP 8-44: *Incorporating Safety into Long-Range Transportation Planning*: guideline document preparation and the development of safety prediction models on a planning level, 2003 – 2006, completed
- NCHRP 17-29, *Methodology to Predict the Safety Performance of Rural Multilane Highways*, 2004 - 2006.
- The *Arizona Crash Outcome Data Evaluation System (CODES) Project*, funded by the National Highway Traffic Safety Administration, September 2003 – August 2008.
- Co-Principal Investigator: *Roundabouts and Older Drivers*, Research Project funded by the Center for Disease Control, 2003 – 2005, completed.
- *Instructor: Designing Pedestrian Facilities for Accessibility* (received training by FHWA and apbp), since 2004.
- *Roundabout Safety in Washington State: A limited study*, Data collection sponsored by WSDOT, 2004 – date.
- Principal Investigator: *Developing an In-Service Performance Evaluation (ISPE) for Roadside Safety Features in Texas*, funded by Texas Department of Transportation (completed).

PROJECTS AS PRINCIPAL INVESTIGATOR OR CO-PRINCIPAL INVESTIGATOR since 2002

- 1. Two Lane Rural Road Safety Countermeasures**
Washington State Department of Transportation Amount: \$75,000
Role: PI Date: December 2005 – October 2007
- 2. Developing an In-Service Performance Evaluation (ISPE) For Roadside Safety Features In Texas**
Texas Department of Transportation Amount: \$250,000
Role: PI Date: January, 2002 to December, 2004
- 3. Reducing Older Driver Injuries at Intersections: Reducing Older Drivers and Roundabouts**
Centers for Disease Control: Injury Prevention Amount: \$75,000
Role: Co-PI Date: Sept, 2002 to April, 2005

NCHRP RESEARCH PANEL MEMBERSHIP
(National Academies of Science, Transportation Research Board)

- NCHRP Project Panel D1736: Production of the First Edition of the Highway Safety Manual; Chair (2006 to date)
- NCHRP Project Panel D1734: Prepare Parts IV and V of the Highway Safety Manual; Member (2004 to date)

COMMITTEE AND PROFESSIONAL MEMBERSHIPS

- TRB Task Force for the Development of a Highway Safety Manual (HSM): Member – managing, coordinating and providing input for Chapters 1 and 2, on safety related topics including accessible facilities. Co-author of Chapter 1 of the HSM: Member (2003 to date).
- TRB Statistical Methodology and Statistical Computer Software in Transportation Research Committee (ABJ80): Member (Secretary) (2005 to date).
- TRB Roadside Safety Design Committee (AFB20): Member (2001-2004; 2007 to date).
- TRB Access Management Committee (AHB70): Member (2007 to date).
- TRB Human Factors Guidelines for Road System Design Subcommittee (AND10(2), A3B02(2)): Friend.
- TRB Pedestrians Committee (ANF10): Friend.
- TRB Safety Data, Analysis, and Evaluation Committee (ANB20): Friend.
- American Society of Civil Engineers: Affiliate Member (From 2008).
- Association of Transportation Safety Information Professionals (ATSIP): Member (2004 to date); Board Member (2007 to date).
- Association of Pedestrian and Bicycle Professionals (apbp): Professional Member (2004 to date).
- Institute of Transportation Engineers (ITE): Member (2001 to date).
- ITE Transportation Safety Council: Member (2001 to date).
- PIARC (World Road Organisation): Committee 13, Road safety (2001 to 2004).
- Arizona Injury Prevention Advisory Council: Member (2003 to date).
- Road Safety Audit Subcommittee: Arizona Governor's Traffic Safety Advisory Council: Member (2005 to date)
- Traffic Records Subcommittee: Arizona Governor's Traffic Safety Advisory Council: Advisory Member (2005 to date).
- Chi Epsilon Civil Engineering National Honor Society (2006 - date).
- Transportation Committee of the South African Institute of Civil Engineers: Member (1999 – 2001)
- South African Institute of Civil Engineers: Members (1996 to 2002).
- Engineering Council of South Africa: Members (1996 to 2002).
- Steering Committee for the South African Transportation Conference: Convener for the Road Traffic Management session for 1997 to 2001; and the Road Traffic Safety sessions for 1997 to 2001.

AWARDS

- **Eno Transportation Foundation Fellow** (and participant in the *ENO Transportation Foundation Leadership Conference*, May 2007, Washington, D.C.).
- **Trice Award for the best technical paper**, paper was published in *Concrete/ Beton* and presented at the Annual Banquet of the Concrete Society of Southern Africa, Inland Branch on 10 October 1997 (with Prof. RAF Smith as co-author).
- **Best paper award for young professional: South African Transport Conference**, presented at the 1998 South African Transport Conference, 8 - 9 September 1998, Pretoria, South Africa.

PUBLICATIONS

Peer Reviewed

- Lord, D., I. van Schalkwyk, L. Staplin, and S. Chrysler. *A Strategy to Reduce Older Driver Injuries at Intersections Using More Accommodating Roundabout Design Practices*, Accident Analysis & Prevention, Volume 39, Issue 3, May 2007, Pages 427-432.
- I van Schalkwyk, B Grobbelaar. *Human factors and driving: How it influences the accident investigation process*, Proceedings of the 4th International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, pp.67-76, 2001.
- I van Schalkwyk, JJA Prinsloo and RJV Slater. *The South African Road Safety Manual*, Proceedings of the 3rd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, pp.273-282, 1999.
- I van Schalkwyk, L de V Roodt. *Risk homeostasis – what is the implication on road safety management and plans?*, Proceedings of the 3rd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, pp.81-87 , 1999.
- I van Schalkwyk, RAF Smith. *Traffic Barriers in South Africa*, *Concrete/Beton*, no.86, pp.5-9, 1997.

Published Project Reports Since 2001

- Washington, S.P., Van Schalkwyk, I., Mitra, S., Meyer, M., Dumbaugh, E., and Zoll, M., 2006. *Incorporating Safety Into Long-Range Transportation Planning*, NCHRP Report 546, Transportation Research Board, Washington, D.C.
- Lord, D., I. van Schalkwyk, L. Staplin, and S. Chrysler (2005) *Reducing Older Driver Injuries at Intersections Using More Accommodating Roundabout Design Practices*. TTI Report CTS-05-01. Texas Transportation Institute, College Station, TX.
- I. van Schalkwyk, R.P. Bligh, D.C. Alberson, D.L. Bullard, D. Lord, S. Miaou. *Developing an In-Service Performance Evaluation (ISPE) for Roadside Safety Features in Texas*, Technical Report 0-4366-1. Texas Transportation Institute, College Station, TX. December 2004.
- Quiroga, C., Kraus, E., Van Schalkwyk, I., and Bonneson, J. *Red Light Running – A Policy Review*, Technical Report CTS-02/150206-1. Texas Transportation Institute, College Station, TX. March 2003.
- I van Schalkwyk, JJA Prinsloo. *The South African Road Safety Manual* (Volumes 1, 3, 4, 5, 6), Commission of Land Transport Officials in South Africa, 1999.

CONFERENCE PROCEEDINGS/ PRESENTATIONS AT CONFERENCES

- *Researcher's Perspective on Data Issues for Safety and Planning*, with Simon P. Washington at the TRB 87th Annual Meeting, January 13th, 2008, Washington, D.C.
- *NCHRP Project 8-44(2): NCHRP Report 536 and Update on the Planning Tool*, with Simon P. Washington at the TRB 87th Annual Meeting, January 14th, 2008, Washington, D.C.
- *Regional Transferability and Differences of Planning-Level Safety Prediction Models*, with Simon P. Washington at the TRB 87th Annual Meeting, January 16th, 2008, Washington, D.C.
- *Reporting the Top 5% Most Severe Safety Needs*, 33rd International Forum on Traffic Records & Highway Safety Systems, July 26th, 2007, St. Louis, MO.
- *Evaluation of the Fixed Speed-Enforcement Camera Demonstration Project on SR101 in Scottsdale, AZ*, 33rd International Forum on Traffic Records & Highway Safety Systems, July 26th, 2007, St. Louis, MO.
- *Evaluation of the Fixed Speed-Enforcement Camera Demonstration Project on SR101 in Scottsdale, AZ*, NHTSA CODES Technical Assistance Meeting, June 26, 2007.
- *Older Drivers and Roundabouts: Assessing Traffic Control Feature Characteristics Through the Use of Focus Groups and Structured Interviews*, TRB Annual Meeting 2007, with Lord, D., Chrysler, S.T., and Staplin, L., Washington D.C.
- *Important Omitted Spatial Variables in Safety Models: Understanding Contributing Crash Causes at Intersections*, TRB Annual Meeting 2007, with Mitra, S., and Washington, S.P., Washington D.C.
- *Revisiting Existing Warrants for Left-Turn Lanes at Unsignalized Intersections on Two-Lane Roadways*, TRB Annual Meeting 2007, with Stover, V.G., Washington D.C.
- *Scottsdale 101 Fixed Camera Speed Enforcement Project*, ITE/IMSA Spring 2007 Conference, with Purrel, P., March 8th, 2007, Phoenix, AZ.
- *The NCHRP 8-44(2) Project*, 32nd International Forum on Traffic Records & Highway Safety Systems, August 1st, 2006, Palm Desert, CA.
- *Incorporating Weather into Regionwide Safety Planning Prediction Models*, TRB Annual Meeting 2006, with Washington S.P. , and Mitra S., January 23rd, 2006, Washington, D.C.
- *Roundabout Conflicts and their effect on safety in Washington State*, TRB National Roundabout Conference, May 23rd, 2005, Vail, CO.
- *Bayesian Estimation Approach for Modeling Overdispersion in Crash Data*, TRB Annual Meeting 2005, with Mitra, S., Washington, S.P., Congdon, P., January 11th, 2005, Washington, D.C.
- *Forecasting Crashes at the Planning Level*, presentation at the ITE/IMSA 2005 Spring Conference, Black Canyon Conference Center, Phoenix, Arizona, March 8-10, 2005.
- *Accessibility of Pedestrian Facilities*, presentation at the ITE/IMSA 2005 Spring Conference, Black Canyon Conference Center, Phoenix, Arizona, March 8-10, 2005.
- *Road Safety Audits: The South African Experience*, presentation at FHWA Arizona office for ADOT and local agencies, January 4th, 2005.
- *Roundabouts and Older Drivers*, 83rd Annual Transportation Research Board Meeting, Session 805 (P04-1058), January 15th 2004, Washington D.C.

- *Death and Injuries Suffered by Children (0-18 Years) in Texas Traffic Crashes*, Presentation at the 3rd Annual Childhood Injury Prevention Conference, San Antonio, Texas, September 26 - 27 2002.
- *Testing, evaluation, and application of standards for road safety devices in South Africa*, Transportation Research Circular, Number E-C038, pp.33-35, June 2002, Transportation Research Board, Washington D.C.
- *Human factors and Driving: How it Influences the Accident Investigation Process*, Presentation at the 4th International conference on Accident Investigation, Reconstruction, Interpretation and the Law, Vancouver, British Columbia, Canada, August, 2001.
- *Macro-level Evaluation of Road Safety Interventions*, Presented at the International Road Federation conference, June 2001, Paris, France.
- *Recent Developments in Research on Outdoor Advertising*, Presented at the South African Transport Conference, July 2001, South Africa.
- *Road Traffic Safety in South Africa: Ubi Sumus, Quo Vadimus*, Presented at the South African Transport Conference, July 2001, South Africa.
- *Macro-level Evaluation of Road Safety Interventions – an Evaluation of the Arrive Alive (1997/98) Road Safety Campaign*, South African Transport Conference, Pretoria, South Africa, July 2000.
- *Risk homeostasis – What is the Implication on Road Safety Management Plans?*, 3rd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, Pretoria, South Africa, October 1999.
- *International Issues in Road Safety Audit*, 3rd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, Pretoria, South Africa, October 1999.
- *The South African Road Safety Manual*, 3rd International Conference on Accident Investigation, Reconstruction, Interpretation and the Law, Pretoria, South Africa, October 1999.
- *The South African Road Safety Manual – Towards a safer millennium for South Africa*, South African Transport Conference, July 1999, Pretoria, South Africa.
- *The Potgieter Street Traffic Safety Project*, South African Transport Conference, September 1998, Pretoria, South Africa.
- *The performance evaluation of traffic barriers in South Africa*, Third African Road Safety Congress, April 1997, Pretoria, South Africa.
- *A performance evaluation of traffic safety barriers in use in South Africa*, South African Transport Conference, September 1997, Johannesburg, South Africa.
- *The implementation of access management in Midrand*, Presented at the South African Transport Conference, September 1997, Johannesburg, South Africa.

REFeree WORK ON JOURNALS, PAPERS, AND OTHER DOCUMENTS

- Washington State DOT (WSDOT): *Understanding Flexibility in Design* document – the WSDOT context sensitive design document that discusses tradeoffs between the needs of all road users of the road environment (contributing author for Pedestrian and Bicyclist chapters).

- Transportation Research Board – 24 papers (TRB Committee AFB20: Roadside Safety Design; TRB Committee ABJ80: Statistical Methodology and Statistical Computer Software in Transportation Research; TRB Committee ANB20: Safety, Data and Analysis)
- ITE Transportation Safety Council: Member – reviews safety related documentation at ongoing basis for ITE.
- ITE and FHWA: Safety 101 Workshop series – Overview panel member.

INVITED TALKS/ GUEST LECTURES

- *Roadside Safety*, Arizona State University, Department of Civil and Environmental Engineering, CEE 372, Spring 2007, Tempe AZ.
- *Preliminary Findings of the Evaluation of the Scottsdale/ 101 Fixed Camera Photo Speed Enforcement Pilot Project*, Maricopa Association of Governments: Transportation Review Committee, Phoenix, AZ.
- *Preliminary Findings of the Safety Effects of the Fixed Camera Photo Speed Enforcement Pilot Project in Scottsdale on Route 101*”, City of Scottsdale: Transportation Commission, February 18th, 2007, Scottsdale, AZ.
- *Road Safety Engineering*, Graduate Seminar, University of Arizona, Department of Civil and Engineering Mechanics, Spring 2004, Tucson AZ.
- *Crash Data and Analysis*, Epidemiological Methods, University of Arizona, UA Zuckerman College of Public Health, EPID 573B, Spring 2004, Tucson AZ.
- *Designing for Pedestrians*, University of Arizona, Department of Civil and Engineering Mechanics, CE 343, Fall 2004, Tucson AZ.
- *Geometric Design: Horizontal Alignment*, University of Arizona, Department of Civil and Engineering Mechanics, CE 566, Fall 2003, Tucson AZ.
- *Elements of Traffic Analysis*, University of Arizona, Department of Civil and Engineering Mechanics, CE 363, Fall 2003, Tucson AZ.
- *Roadside Hazard Management*, 23 - 26 March 1998, Kwazulu-Natal Department of Transport, Pine Town, South Africa.
- *Roadside Hazard Management*, November 1999, CSIR, Pretoria, South Africa.
- *Roadside Hazard Management*, November 1999, CSIR, Cape Town, South Africa.
- *Roadside Hazard Management*, November 1999, Kwazulu-Natal Department of Transport, Pine Town, South Africa.
- *Road Safety and the Municipal Engineer*, July 4th, 1999, Meeting of Institute of Municipal Engineers of South Africa and the KwaZulu-Natal Association of Town Engineers, Pietermaritzburg, South Africa.
- *The South African Road Safety Manual*, October 1999, 5 sessions: Pretoria, Kimberley, Cape Town, Durban and Port Elizabeth, South Africa.
- *Hazardous Location Identification and Treatment*, May 9th, 2000, South African Institute of Civil Engineers: Pietermaritzburg Branch, Pietermaritzburg, South Africa.

CONFERENCE SESSION CHAIR/ MODERATOR

- Session Moderator: “*Best Practices and Advantages for Reporting the Top 5% Locations Exhibiting the Most Severe Safety Needs*”, 33rd International Forum on Traffic Records & Highway Safety Systems, July 26th, 2007, St. Louis, MO.
- Session Moderator: “*Safety Conscious Planning: How Can We Support the Planning and Engineering Community?*”, Traffic Records Forum, August 1, 2006, Palm Desert, CA.
- Session Moderator: “Meeting the SAFETEA-LU Expectation for Identifying the Most Severe Safety Needs - The State DOT Experience”, Traffic Records Forum, July 31, 2006, Palm Desert, CA.
- Presiding Officer: “*Statistical Methods and Models for Transportation*”, Transportation Research Board 85th Annual Meeting, January 24th, 2006, Washington, D.C.
- Session Chair: “Road Safety Engineering”, Accident Investigation, Reconstruction, Interpretation and the Law (AIRIL '01), Vancouver, Canada, August 2001.

ACADEMIC AND TEACHING EXPERIENCE

i) Academic Courses: Taught (Includes Course Development)

COURSE NAME	COURSE LEVEL	DEGREE PROGRAM/ DEPARTMENT	UNIVERSITY
Transportation Engineering, CEE372	3 rd Year Undergraduate Fall 2005, Fall 2006 (Fall 2007 scheduled)	Undergraduate Degree, Department of Civil and Environmental Engineering	Arizona State University
Traffic Engineering 3A	3 rd Year Undergraduate 2 nd Semester, 2000	Undergraduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University
Traffic Engineering 3B	3 rd Year Undergraduate 1 st Semester, 2001	Undergraduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University
Urban Transportation	4 th Year Undergraduate 1 st Semester, 2001	Undergraduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University
Final Year Design Project: Transportation	4 th Year Undergraduate	Undergraduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University
Road Safety Engineering I	Graduate Level 1 st Semester, 2001	Graduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University
Road Safety Engineering II	Graduate Level 2 nd Semester, 2001	Graduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment	Rand Afrikaans University

COURSE NAME	COURSE LEVEL	DEGREE PROGRAM/ DEPARTMENT	UNIVERSITY
Transportation and Land-Use Planning	Graduate Level 2 nd Semester, 2000 1 st Semester, 2001	Graduate Degree, Department of Transport and Logistics Management, School of Economic and Financial Services	Rand Afrikaans University
Transportation and Land-Use Planning	Graduate Level 1 st Semester, 2001 2 nd Semester, 2001	Transportation Management Diploma, Department of Transportation Economics	Rand Afrikaans University

ii) Advising

- Rachele Muller, Undergraduate Degree, Department of Civil Engineering, School of Engineering and the Built Environment, Rand Afrikaans University, South Africa (2000)
- Mark Adams, Masters Degree, Department of Civil Engineering, School of Engineering and the Built Environment, Rand Afrikaans University, South Africa (2001); *The Road Traffic Management Corporation: A Case Study*.

iii) Workshops and Training for Transportation Agencies

TOPIC/DURATION	DATES	AGENCY/ LOCATION
Designing Accessible Pedestrian Facilities – 2 days	June 6-7, 2006	Washington State Department of Transportation, T2 Center, Kent, WA
Designing Accessible Pedestrian Facilities – 1 day	November 10 th , 2005	Arizona Department of Transportation, Phoenix, AZ
Designing Accessible Pedestrian Facilities – 2 days	June 9-10, 2005	City of Bellevue, Bellevue, WA
Designing Accessible Pedestrian Facilities – 2 days	June 7-8, 2005	Washington State Department of Transportation, T2 Center, Tacoma, WA
Designing Accessible Pedestrian Facilities – 2 days	November 4-5, 2004	Washington State Department of Transportation, T2 Center, Tumwater WA
Designing Accessible Pedestrian Facilities – 2 days	November 2-3, 2004	Washington State Department of Transportation, T2 Center, Kent, WA
Road Safety Audits – 2 days	November 2001	Gauteng Department of Public Transport, Roads and Works, Pretoria, South Africa
Road Safety Audits – 2 days	September 2001	Gauteng Department of Public Transport, Roads and Works, Pretoria, South Africa
Road Safety Audits – 2 days	August 2001	Gauteng Department of Public Transport, Roads and Works, Pretoria, South Africa
Road Safety Audits – 2 days	April 2001	Western Cape Provincial Administration/ City of Cape Town, Cape Town, South Africa

TOPIC/DURATION	DATES	AGENCY/ LOCATION
Road Safety Audits – 2 days	November 2000	Western Cape Provincial Administration/ City of Cape Town, Cape Town, South Africa
Road Safety Audits – 2 days	November 1999	Swaziland Department of Transportation, Swaziland

vi) Other Workshop Development

- Road Safety Audits – 2 day workshop for South African National Department of Transportation (continuing education for engineers and planners) (1999 with updates up 2001).
- Updated and modify “Accessible Pedestrian Facility Design” materials for WSDOT (2004, 2005).
- Safety 101: Transportation Safety and Planning for ITE/FHWA (2007 to date).

RESEARCH EXPERIENCE

Faculty Associate at Arizona State University and as Research Professional at the University of Arizona (October 2003 – February 2008)

Main responsibilities:

- Engage in transportation safety research
- Lead and manage safety research studies
- Prepare and make presentations of research activities and related subjects
- Develop business relationships and maintain regular communication with research sponsors, stakeholders in safety on a state and national level
- Teach undergraduate transportation courses
- Develop and prepare research proposals aimed at obtaining funding for the unit in the field of safety
- Support Prof. Simon Washington in activities related to his position as Professor in the CEE department.

Transportation Safety Research. Selected transportation safety related projects:

- Primary researcher for the Arizona Crash Outcome Data Evaluation System (CODES). The project links medical (hospital and emergency department), motor vehicle crash data, drivers’ license, and vehicle title and registration data. This is also extended into linkage with the road network, weather information, socio-demographic data, and other datasets that will support improving the understanding of safety and the outcomes of motor vehicle crashes.
- Development of PLANSAFE – planning level safety prediction models as part of NCHRP 8-44 (*Incorporating Safety into Long Term Transportation Planning*) and NCHRP 8-44(02) (*Transportation Safety Planning: Forecasting the Safety Impacts of Socio-Demographic Changes and Safety Investments*). Lead the development of the dataset for this modeling which included the development of GIS procedures for adding area-wide variables to the dataset. It also included working closely with PAG (Pima Association of Governments), MAG (Maricopa Association of

Governments), agencies in the PSRC (Puget Sound Regional Council area in Washington State), Arizona DOT, and the State of Michigan. In NCHRP 8-44(02) at least Iowa and Kentucky are also participating in the project (this includes various metropolitan planning agencies)

- c) Development of safety prediction models for multilane rural roads as part of NCHRP 17-29 (Development of Safety Prediction Models for Rural Multilane Roads)
- d) Leading and managing a WSDOT project: *“Two Lane Rural Road Safety Countermeasures”*.
- e) Development of datasets for intersections, segment, and area-wide models. This includes obtaining original source datasets from the agency, negotiating data security and use agreements; preparing, testing, and applying SAS programs to develop the datasets; and development of innovative procedures to include non-conventional variables to improve our understanding of safety.

Development of Business Relationships and Writing Proposals for Funding. Lead and contribute to the development and preparation of various proposals. A key element of daily task is also to develop relationships with a variety of transportation agencies, academics, and students. Was awarded a research contract from WSDOT during 2005 for the development of cost-effective countermeasures for two-lane rural roads – the first contract the team received from WSDOT, and the result of various efforts towards adding WSDOT to the list of funding agencies. Also successfully marketed workshops on accessible pedestrian design to WSDOT, ADOT and the City of Bellevue.

Development and Management of Datasets. As the only safety researcher in the Safety Research Unit, responsible for requesting and negotiating for the release of data to support our research activities. This includes the development of data use and security agreements. In most cases also responsible for the development of datasets from these source files to support safety research efforts. This requires the extensive use of the SAS System (this includes the development and writing of programs for the SAS system).

Development of Safety Prediction Models. Utilization of LIMDEP and SAS for the development of statistical models for accident prediction for segments, and also for planning level safety models.

Involvement in Statewide and National Safety Efforts. Representing ASU on two statewide committees: one related to road safety audits, and the other to traffic records. The latter also serves as the Arizona Traffic Records Coordinating Committee. National level: member of various TRB committees and subcommittees, review papers for TRB, and act as member and also chair on NCHRP panels. Active involvement in the Highway Safety Manual, acting in a variety of roles: as TRB Task Force member, as HSM Task Force Content Subcommittee member, as researcher on NCHRP 17-29 that is developing materials for the HSM, as a panel member for NCHRP 17-34 that oversees the development of Parts IV and V of the Manual, and as panel chair for NCHRP 17-36 that oversees the Production of the First Edition of the HSM. Various other activities, such as the organization of two sessions that were part of the 2006 Traffic Records Forum.

Crash Outcome Data Evaluation System. Primary researcher of the Arizona CODES: responsibilities, among others:

- i) Negotiation for the release of the confidential datasets necessary for the CODES project. This includes working closely with representatives and committees of agencies such as the Arizona Department of Health Services, Arizona Department of Transportation, the Motor Vehicle Division, the Arizona Governor's Office of Highway Safety, and other stakeholders in Arizona.
- ii) Representing and organizing CODES related activities in the state of Arizona.
- iii) Developing and maintaining a working knowledge of the hospital and emergency department data of the Department of Health Services.
- iv) Preparing bimonthly progress reports to NHTSA.
- v) Responding to requests from NHTSA (includes communication with the Project Manager, Sandy Johnson, and John Kindelberger from the National Center for Statistical Analysis, and CODES researchers in other states).
- vi) Cleaning and verifying data elements in the various datasets that forms part of the CODES linked dataset
- vii) Performing linkage with the CODES2000 software.
- viii) Development and maintenance of the Arizona CODES project website (www.azcodes.org).

Computer related skills.

- a) **Dataset Development and Analysis.** Working knowledge of SAS, S-Plus, LIMDEP, Microsoft Access, and CODES 2000.
- b) **Website Development and Maintenance.** Webmaster for work-related websites:
 - www.azcodes.org – the project website for the Arizona CODES project
 - www.trbstats.org – the committee website for the TRB Statistical Methodology and Statistical Computer Software in Transportation Research Committee.

Presenter of Workshop on Designing Accessible Pedestrian Facilities. Selected during 2004 as one of 24 professionals nationwide to present the FHWA course covering the design of accessible pedestrian facilities. Presented several workshops in both Washington State and in Arizona. Also developed, part of the workshop, an interactive CD disk containing resources to support the task of the practitioner along with a comprehensive workshop folder that contains all the essential documents, and also continues to update the standard workshop slides to reflect the latest developments, local conditions and examples, and in response to needs identified during the workshops.

Assistant Research Scientist***Crash Analysis and Modeling Group: Center for Transportation Safety
Texas Transportation Institute (December 2001 – September 2003)***

Primary responsibilities: lead and participate in research, develop Center website in cooperation with graphic artist, coordinate Center logo development in cooperation with graphic artist.

Research:

- Principal Investigator and primary researcher for TxDOT project titled: *Developing an In-Service Performance Evaluation (ISPE) for Roadside Safety Features in Texas*.
 - Data analysis and literature review for TxDOT project titled: *Red Light Running – A Policy Review*.
 - Co-Principal Investigator: *Roundabouts and Older Drivers*, Research Project funded by the Center for Disease Control.
 - Data analysis and presentation of: *Injuries and Deaths of Children Involved in Motor Vehicle Crashes in Texas*.
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AREAS OF PRACTICAL EXPERIENCE

Development of the South African Road Safety Manual. Developed five volumes of the best-practice guideline for South Africa as lead author. The document considers safety of all road users, non-motorized traffic and pedestrians; and covers the entire road safety management process along with innovative safety programs such as road safety audits. The volumes are as follows: Volume 1: Principles, Policies and Procedures; Volume 3: Road safety engineering assessment on urban roads (a safety assessment process developed specifically for South Africa, using accident history, operational conditions, road elements, access management measures and land-use as input); Volume 4: Road safety audits; Volume 5: Remedial measures and evaluation (accident data analysis, data needs, remedial measure selection, evaluation of alternative remedial measures, monitoring and evaluation of implemented projects); Volume 6: Roadside hazard management (roadside safety)

Road Safety Related Projects: Conducted various road safety assessments, investigations for hazardous elimination projects, road safety audits, pedestrian safety studies, corridor safety studies, various accident related analysis projects for different road user groups and facility types. Review of safety related research proposals for the South African National Department of Transportation. Preparation of briefing document for the South African Parliament on safety of major freeways in South Africa. Preparation of briefing document on the application of rumble strips for major national corridor in South Africa associated with high frequency of run-off-the-road crashes.

Access Management: Developed Access Management Policy Documents for two local transportation agencies. Developed of access management plans for several major corridors and also the entire road network of a local agency – included performing functional level classifications for routes, identification of appropriate access management measures (e.g., access type and position, median and intersection treatments). Reviewed ad hoc requests for accesses by developers on behalf of local agency.

Road Construction (Intern). Conducting geotechnical tests at the on-site soil lab, surveying roadway alignment and road layers, calculating quantities of fill and excavation, training on construction equipment (bull dozers and scrapers), managing day to day construction activities.

Roadside Safety Features: Conducted research study investigating the applicability of concrete traffic barriers in South Africa. Preparation of volume of South African Road Safety Manual dealing with roadside safety.

Traffic Engineering and Design: Conducted various traffic engineering studies including traffic impact studies, local traffic calming plans. Development of an integrated traffic signal control system for local agency. Review of rezoning applications and site development plans –as a consultant and as a local city engineer. Development of intersection and roadway related improvement scenarios for local agency utilizing operational and safety related data. Development and preparation of traffic signage layouts for major highway toll project involving closely spaced interchanges. Development and preparation of designs and contract documentation for traffic signing and street names for a regional council. Evaluation of requests for marked pedestrian crosswalks, traffic signals, traffic calming and other traffic engineering related measures and controls. Development and evaluation of geometric designs of intersections, accesses and median openings. Instructor for designing accessible pedestrian facilities.

Road Safety Audits and Safety Assessments: Prepared the South African Road Safety Audit procedure and checklists. Developed the urban procedure for road safety assessments in South Africa. Presented several road safety audit workshops training more than 200 professionals such as traffic engineers, transportation planners, urban designers, agency executives, public representatives and elected officials. Co-presented at 11 workshops and acted as sole presenter at seven two-day road safety workshops that included training in roadside safety and remedial measure selection, evaluation and monitoring.

Transportation Planning: Responsible for planning related activities at local agency level in South Africa, including land-use changes, access management and provision, pedestrian facilities, multi-modal aspects, and beautification projects that included the provision of pedestrian facilities.