

**REGISTRATIONS**

Professional Engineer No. C 71200, California

Professional Engineer No. 96795, Texas (Inactive)

**EDUCATION**

Doctor of Philosophy – Civil Engineering, Arizona State University, May 2003

Master of Science – Civil Engineering, University of Maryland, August 1999

Engineering Diploma – Civil Engineering, Technical University of Iasi, Romania, June 1997



**EMPLOYMENT HISTORY**

*Associate Professor* – Civil Engineering Department, California State Polytechnic University, Pomona, September 2008 – Present

*Lecturer* – Civil Engineering Department, California State Polytechnic University, Pomona, June 2007 – August 2007

*Senior Engineer/Project Manager* – MACTEC Engineering and Consulting, Los Angeles, January 2007 – Present

*Project Engineer* – MACTEC Engineering and Consulting, Los Angeles, December 2005 – December 2006

*Research Engineer* – Fugro Consultants, Austin, TX, January 2003 – November 2005

*Graduate Research Associate* – Arizona State University, Tempe, AZ, July 1999 – December 2002

*Graduate Research Assistant* – University of Maryland, College Park, MD, August 1997 – June 1999

*Teaching Assistant* – Technical University of Iasi, Romania, August 1996 – June 1997

**WORK HISTORY**

*Client/Project*

*Responsibility/Time Frame/Duties*

Airfield Asphalt Pavement Technology Program  
*Performance Related Specifications for Airfield Asphalt Pavements*

Pavement Engineer  
*October 2007 - Present*  
Performed literature review of performance related specifications for highway pavements.

Ensemble Real Estate  
*Palmdale Medical Center Medical Office Building, Palmdale, CA*

Project Engineer  
*July 2007*  
Construction of three story steel moment frame with concrete over metal decking. Observed structural steel inspection.

Galaxy Holdings  
*The Vue Luxury Condominiums, San Pedro, CA*

Project Engineer  
*July 2007*  
Construction of a five-level post-tensioned concrete structure and sixteen story post-tensioned concrete tower. Observed concrete inspection and testing.

Swinerton Management/Los Angeles Pierce College  
*Pepper Tree Lane Pavement Rehabilitation*

Pavement Engineer/Project Coordinator  
*May 2007*  
Selected coring and sampling locations, visually evaluated sampled materials and ordered laboratory testing. Performed analysis and developed rehabilitation recommendations.

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<i>Client/Project</i>	<i>Responsibility/Time Frame/Duties</i>
University of California, Los Angeles <i>Westwood Plaza Pavement Rehabilitation</i>	Pavement Engineer/Project Coordinator <i>April 2007</i> Selected coring and sampling locations, visually evaluated sampled materials and ordered laboratory testing to measure the properties needed for pavement analysis and rehabilitation. Performed analysis and developed rehabilitation recommendations.
CALTRANS <i>Flexible Pavement Investigation and Testing Services</i>	Pavement Engineer/Task Manager <i>April 2007 – Present</i> Performed interviews with state departments of transportation and professional associations involved in the training and certification of technicians working on state highway construction projects. Performed distress surveys on rubberized asphalt concrete experimental projects, performed analyses and reported on the performance of the experimental projects.
City of Coachella, CA <i>Pavement Management System Implementation</i>	Pavement Engineer/Project Manager <i>December 2006 – March 2007</i> Coordinated all project activities, analyzed field survey data and performed quality control of the data entered into the Micro Paver Database. Developed a 5-year maintenance and rehabilitation plan and presented the results to the City.
Berg and Associates/City of Palm Desert, CA <i>Portola Bridge Vibratory Compaction Monitoring</i>	Civil Engineer <i>September 2006</i> Reviewed vibration levels generated by field vibratory compaction.
CALTRANS <i>Pavement Preservation Services</i>	Pavement Engineer/Task Manager <i>August 2006 – Present</i> Wrote the Chapter on Diamond Grinding in the Caltrans Maintenance Technical Advisory Guide (MTAG). Also, reviewed and updated the Chapters on Microsurfacing, Slurry Seal and Crack Sealing. Developed training presentation slides for the following chapters: Microsurfacing, Slurry Seal, Crack Sealing.
Accretive Realty/City of Fullerton, CA <i>Laguna Rd &amp; Laguna Dr Pavement Rehabilitation</i>	Pavement Engineer/Project Coordinator <i>August 2006</i> Selected coring and sampling locations, visually evaluated sampled materials and ordered laboratory testing to measure the properties needed for pavement analysis and rehabilitation. Performed analysis and developed rehabilitation recommendations.
Kimley-Horn and Assoc./City of Diamond Bar, CA <i>Prospectors Rd Pavement Rehabilitation</i>	Pavement Engineer/Project Coordinator <i>July 2006</i> Selected coring and sampling locations, visually evaluated sampled materials and ordered laboratory testing to measure the properties needed for pavement analysis and rehabilitation. Performed analysis and developed rehabilitation recommendations.
Kimley-Horn and Assoc./SDCRAA <i>Runway 9/27 and Taxiway B Rehabilitation at San Diego International Airport</i>	Pavement Engineer/Project Coordinator <i>July 2006 – December 2006</i> Coordinated pavement coring activities, analyzed cores, ordered laboratory tests and developed recommendations for pavement rehabilitation for Runway 9-27 and Taxiway B.
South Coast Plaza Shopping Center <i>Parking Lot Pavement Rehabilitation</i>	Pavement Engineer/Project Manager <i>June 2006 – August 2006</i> Selected coring and sampling locations, visually evaluated sampled materials and

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	ordered laboratory testing to measure the properties needed for pavement analysis and rehabilitation. Performed analysis and developed rehabilitation recommendations.
City of Carson, CA <i>Pavement Management System Implementation</i>	Pavement Engineer/Project Manager <i>June 2006 – January 2007</i> Coordinated all project activities, analyzed field survey data and performed quality control of the data entered into the Micro Paver Database. Developed a 5-year maintenance and rehabilitation plan and presented the results to the City.
Humboldt Scientific <i>Humboldt GeoGauge Review</i>	Research Engineer/Principal Investigator <i>April 2006 – November 2006</i> Performed a literature review of existing studies on the soil stiffness gauge developed by Humboldt. Made recommendations for possible applications as quality control tool for highway materials.
Granite Meyers Rados/OCTA <i>SR22 Pile Driving Vibration Monitoring Services</i>	Civil Engineer <i>January 2006 – January 2007</i> Reviewed vibration monitoring reports and performed statistical analyses of the vibration monitoring data. Vibrations were generated by pile-driving activities along State Route 22, in Orange County, at more than 30 bridge-widening locations.
Port of Long Beach, CA <i>Pier D Street/Avenue Pavement Rehabilitation</i>	Pavement Engineer <i>December 2005 – January 2006</i> Selected coring and sampling locations, visually evaluated sampled materials and ordered laboratory testing to measure the properties needed for pavement analysis and rehabilitation. Performed analysis and developed rehabilitation recommendations.
FHWA/National Highway Institute <i>Course 131109 – Analysis of New and Rehabilitated Pavement Performance with the Mechanistic-Empirical Pavement Design Guide Software</i>	Principal Developer/Project Manager <i>June 2005 – November 2005</i> Developed the lesson plan for the course and managed the project.
Fugro Consultants LP/Fluor <i>Design of Heavy Wheel, Temporary Service Road</i>	Pavement Engineer <i>March 2005</i> Performed pavement design analysis of an unsurfaced, aggregate road located in Sakhalin Island, Russia. The temporary pavement was used to haul heavy pieces of refinery equipment by special multi-wheel transporters.
Federal Highway Administration <i>Determining the Remaining Service Life of Pavements</i>	Pavement Engineer/Task Manager <i>March 2005 – November 2005</i> Performed a literature review of pavement performance measures and methods and made recommendations for performance measures to be used in pavement management systems.
Mead Westvaco/Asphalt Innovations <i>EvoTherm™ Warm Mix Performance Characterization Study</i>	Research Engineer/Project Coordinator <i>January 2005 – November 2005</i> Developed a field sampling and testing plan and a laboratory testing program for the evaluation of the Evo-Therm asphalt concrete mix produced with "warm mix" technology. The program included testing of Evo-Therm specimens compacted in the laboratory as well as field cores, asphalt binder testing and routine geotechnical testing of the base and subgrade.
Travis County, TX <i>Pavement Management System Implementation</i>	Pavement Engineer/Task Manager <i>May 2004 – July 2004</i> Worked on migration of existing Micro Paver pavement management database into CarteGraph. Assigned performance predictive models for different pavement

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	categories.
Fugro Consultants <i>Seminar – Unbound Materials Characterization for Mechanistic-Empirical Pavement Design</i>	Principal Developer/Instructor <i>February 2004</i> Developed course materials and taught the one-day seminar.
National Academy of Science/NCHRP <i>9-22 Beta Testing and Validation of Hot Mix Asphalt Performance Related Specifications</i>	Research Engineer/Co-Principal Investigator <i>January 2004 – November 2005</i> Coordinated the activities of the research team, prepared progress reports and made presentations to the project panel. Made changes to the original research plan and budget and received approval for new course of action.
Montana Department of Transportation <i>Pavement Performance Models</i>	Research Engineer/Co-Principal Investigator <i>January 2004 – November 2005</i> Ordered, reviewed and analyzed test data on asphalt concrete, asphalt binder, base and subgrade soils from 10 experimental pavements test sections in Montana. Examined asphalt concrete cores for signs of distress and to confirm layer thickness and sub-layering.
FHWA/CALTRANS <i>Slurry Seal and Micro-Surfacing Mix Design Procedure Pooled Fund Study</i>	Research Engineer/Task Manager <i>June 2003 – Present</i> Reviewed and analyzed laboratory test data for aggregates, asphalt emulsions and slurry seal and microsurfacing aggregate-asphalt mixtures. Reviewed International Slurry Seal Association (ISSA) specifications and test bulletins and made recommendations for modifications to improve repeatability and accuracy of the tests. Currently reviewing existing test methods to measure the abrasion resistance of slurry surfacing systems in the field.
National Academy of Science/NCHRP <i>9-30 Experimental Plan for Calibration and Validation of Hot-Mix Asphalt Performance Models for Mix and Structural Design</i>	Research Engineer/Task Manager <i>June 2003 – July 2005</i> Reviewed and retrieved from several sources materials testing data to be entered into a database of material properties for mechanistic-empirical pavement analysis and design. The database contains material properties for: asphalt concrete, asphalt binder, aggregates, unbound base and subbase materials, asphalt and cement treated base materials and subgrade soils. Besides routine material properties (e.g. air voids, density, gradation) the database contains properties specific to mechanistic-empirical design (e.g. complex dynamic modulus, shear modulus, creep compliance).
Lone Star Infrastructure/Texas Toll Authority <i>State Highway 130 Design Build</i>	Resilient Modulus Expert <i>June 2003 – November 2005</i> Reviewed, reduced and analyzed resilient modulus test data for more than 250 tests. Performed audits of the contractor test equipment and verified that the AASHTO procedure was followed. Advised the project team on the use of resilient modulus values in the design of State Highway 130.
Federal Highway Administration (FHWA), Long Term Pavement Performance Program (LTPP) <i>Southern Region Technical Support Contract</i>	Research Engineer <i>January 2002 – December 2004</i> Reviewed materials testing results for Portland cement concrete, asphalt concrete, cement treated base, asphalt treated base and subgrade soils before being entered in the National LTPP Database. Reviewed field pavement distress surveys before being entered into the National LTPP Database.
National Academy of Science/NCHRP <i>1-37A Development of the 2002 Guide for the Design and Rehabilitation of Pavement Structures</i>	Graduate Research Associate <i>July 1999 – December 2002</i> Performed routine geotechnical testing on 4 subgrade and 4 base materials typical for highway construction in Arizona. Compacted and conditioned test specimens

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*Client/Project*

*Responsibility/Time Frame/Duties*

	over a range of moisture and density conditions and then tested for resilient modulus. Performed over 100 resilient modulus tests, reduced the data and developed predictive models for the Arizona DOT materials to be used in highway pavement rehabilitation and design. Developed innovative instrumentation techniques for measurement of vertical and lateral deformation of the test specimen during repeated load triaxial testing. Performed an instrumentation study on the effect of membrane and deflection sensors setup in the resilient modulus repeated load triaxial test. Developed the algorithm used for the calculation of the environmental adjustment factor $F_{env}$ and the algorithm for calculating equivalent resilient modulus values in the Enhanced Integrated Climatic Model module (EICM). Using results from more than 2500 dynamic modulus tests on asphalt concrete mixes, re-calibrated and enhanced the "Witczak et al." dynamic modulus predictive equation to characterize the visco-elastic properties of asphalt concrete.
National Academy of Science/NCHRP 1-28A Development of a Harmonized Test Method for the Resilient Modulus of Pavement Materials	Graduate Research Assistant August 1997 – August 1999 Performed sieve analysis, Atterberg limits, standard and modified effort compaction and CBR tests on 7 subgrade and base materials from the Maryland State Highway Administration and the Minnesota Road Research Project (MnRoad). The materials were also tested in a triaxial cell for resilient modulus and drained shear strength. Based on the results of the laboratory testing program, a more rational test method was developed for measuring the resilient modulus of unbound materials (subgrade, base and subbase).

**COURSES TAUGHT**

CE 325: Geotechnical Engineering I

CE 326: Geotechnical Engineering II

CE 491, 492, 493: Comprehensive CE Design I, II, III (Senior Project)

CE 588: Pavement Design

**TRAINING**

"Fall Prevention & Protection Competent Person Training," 8-hour course, Miller Training, San Diego, California, March 2008

"Construction Safety & Health," 10-hour OSHA training course, MACTEC, Los Angeles, California, March 2008

"Project Manager Leadership Program," MACTEC, Peachtree City, Georgia, November 2006

"Pavement Management with Micro PAVER 5.2.5," Coachella Valley Association of Governments, Coachella, California, December 2005

"Instructor Development Course," National Highway Institute (NHI), Arlington, Virginia, January 2005.

"ISSA Slurry Systems Workshop," Las Vegas, Nevada, February 2004

**PROFESSIONAL MEMBERSHIPS**

Transportation Research Board (TRB), Committee on Mineral Aggregates (AFP70)

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Association of Asphalt Pavement Technologists (AAPT)

California Asphalt Pavement Association (APACA), Asphalt Task Force

California Pavement Preservation Task Group (PPTG), Slab Replacement Committee

#### **PEER-REVIEWED TECHNICAL PAPERS**

“Incorporation of Environmental Effects in Pavement Design,” International Journal of Road Materials and Pavement Design, Volume 8/4 – 2007, pp. 667-693, with C. Zapata, M.W. Witzczak and W.N. Houston

“Development of a CBR-Based Stress-Dependent Resilient Modulus Model,” Proceedings of the International Conference on Performance-Based Engineering, Iasi, Romania, August 2004.

“Harmonized Resilient Modulus Test Method for Unbound Pavement Materials,” Journal of the Transportation Research Board No. 1874, TRB, National research Council, Washington, D.C., 2004, pp. 29-37, with M.W. Witzczak, C.W. Schwartz and J. Uzan.

“The Design and Performance of Variable Pavement Structures for Low Volume Roads,” Second International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, Auburn, Alabama, August 2001, with R. Andrei and S. Florea.

“Conception and Development of an Evolutionary Algorithm for Predicting Road Distress,” The 2nd International Workshop on Artificial Intelligence and Mathematical Methods in Pavement and Geomechanical Systems, Newark, Delaware, August 2000, with A. Andrei and R. Andrei.

#### **NCHRP RESEARCH DIGESTS**

“Refining the Calibration and Validation of Hot Mix Asphalt Performance Models: An Experimental Plan and Database,” NCHRP Research Results Digest, December 2003, Number 284, with H.L. Von Quintus, C. W. Schwartz and R.H. McCuen.

“Jackknife Testing – An Experimental Approach to Refine Model Calibration and Validation,” NCHRP Research Results Digest, December 2003, Number 283, with H.L. Von Quintus, C. W. Schwartz and R.H. McCuen.

#### **ACADEMIC PUBLICATIONS**

“Development of a Predictive Model for the Resilient Modulus of Unbound Materials,” Doctoral Dissertation, Arizona State University, Tempe, Arizona, May 2003.

“Development of a Harmonized Test Method for the Resilient Modulus of Unbound Materials used in Pavement Design,” Master’s Thesis, University of Maryland, College Park, Maryland, August 1999.

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