



*Accident Research and Biomechanics, Inc.*

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27071 Cabot Road, Suite #129  
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## **CURRICULUM VITAE**

Thomas F. Fugger, Jr., P.E.  
*President / Senior Engineer*

## **EDUCATION**

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, Urbana, Illinois  
*Master of Science, Theoretical and Applied Mechanics - 1985*  
Concentration: Applied mechanics, stress analysis, materials analysis, and fatigue analysis and fracture mechanics.

SOUTHERN ILLINOIS UNIVERSITY, Carbondale, Illinois  
*Bachelor of Science, Engineering Mechanics and Materials - 1982*  
Concentration: Design and Analysis of Structures.

UNIVERSITY OF CALIFORNIA, LOS ANGELES - Los Angeles, California  
*UCLA Department of Mechanical Engineering*  
Coursework: Introduction to composite materials technology, Metal and Ceramic Composites, Fracture of Structural Materials, Introduction to Artificial Intelligence.

*UCLA Department of Kinesiology*  
Coursework: Human Anatomy and Physiology, Human Anatomy, Human Anatomy and Applied Biomechanics, Injury Recognition and Prevention, Evaluation of Sports Injuries.

Southwestern Association of Technical Accident Investigators  
*Forensic Pathology of Injury Mechanisms*  
*The Technical Aspects of Accident Scene Photography*  
November 1989 - Tucson, Arizona

Engineering Dynamics Corporation  
*Computer Aided Accident Simulations*  
Northridge, California - January 1990

Southwestern Association of Technical Accident Investigators  
*Motorcycle Accident Reconstruction*  
*Introduction to Occupant Kinematics*  
Phoenix, Arizona - April 1990

Engineering Dynamics Corporation  
*Computer Aided Accident Reconstruction*  
Houston, Texas - May 1990

Texas A&M University  
*Collision Trauma Biomechanics*  
College Station, Texas - Oct 1990

Association for the Advancement of Automotive Medicine  
*The Biomechanics of Impact and Its Relationship to Crash Performance Standards*  
Long Beach, California - Nov 1990

UCLA - Medical School  
*Anatomy and Injury Mechanisms*  
Westwood, California - Dec 1990

Society of Automotive Engineers  
*Motor Vehicle Accident Reconstruction*  
Detroit, Michigan - Feb 1991

Northwestern University Traffic Institute  
*Traffic Accident Reconstruction II*  
San Diego, California - Mar 1991

University Consortium for Continuing Education  
*Vehicle Dynamics and Active Control*  
Detroit, Michigan - June 1991

University of North Florida, IPTM  
Tire Forensics for the Accident Investigator  
Ontario, California - July 1991

University of California - San Diego  
School of Medicine  
*Accidental Injury: Biomechanics and Prevention*  
San Diego, California - Nov 1991

University of California, Los Angeles  
*Scientific Aspects of Cycling*  
April 1992

Society of Automotive Engineers  
*Vehicle Rollover Toptec*  
September 1992

Society of Automotive Engineers  
Heavy Truck Rollover  
Atlanta, Georgia - April 1993

Society of Automotive Engineers  
Head and Neck Injury Symposium  
Denver, Colorado - December 1993

Society of Automotive Engineers  
Sensor Design for Automotive Air Bag Systems  
Irvine, California - January 1995

University of California, Los Angeles  
Review Class for Traffic Engineering  
Los Angeles, California - September 1997

Society of Automotive Engineers  
Accident Reconstruction TopTec  
Tempe, Arizona - May 2001

Collision Safety Institute  
Crash Data Retrieval System Operator  
San Diego, California – May 2005

Transportation Research Board  
Human Factors Workshop  
“New Frontiers in Visibility Technology” – January 2006

United Transportation Training  
Commercial Vehicle Brakes  
Alvin, Texas – September 2006

Valley Detroit Diesel Allison  
Detroit Diesel Electronic Control DDC 8880  
Training Class for DDEC Control Systems  
Mira Loma, California – December 2006

Transportation Research Board  
Human Factors Workshop  
“Driver Vision and Behavior during Dusk and Dawn” – January 2007

National Transportation Safety Board  
“Motorcoach, Bus and 15-Passenger Vans”  
Washington, D.C. – July 2007

Society of Automotive Engineers  
“Highway Event Data Recorder Symposium”  
Washington, D.C. – September 2007

Transportation Research Board  
Human Factors Workshop  
“Looking Backwards, Thinking Backward: Hindsight Judgment of Human Error in Accident Investigation” – January 2008

Transportation Research Board  
Human Factors Workshop  
“To Light or Not to Light: Identifying Driver’s Visual Needs is the Answer” – January 2009

### **PROFESSIONAL EXPERIENCE**

Jan '95 - Present	ACCIDENT RESEARCH & BIOMECHANICS, Inc - Valencia, CA President / Senior Engineer Accident reconstruction and biomechanics analysis of transportation and premises related incidents and crashes involving, but not limited to, automobiles, trucks, buses, trains, motorcycles, bicycles and pedestrians.
Aug '89 - Jan '95	ACCIDENT RESEARCH & ANALYSIS - Newhall, CA Accident Analyst Investigation and analysis of accidents involving automobiles, trucks, motorcycles and pedestrians. Evaluation of vehicle dynamics, impact severity and occupant kinematics.
Sept '85 - Dec '90	LOCKHEED AERONAUTICAL SYSTEMS COMPANY - Burbank, CA Senior Scientist Structural stress analysis of advanced composite structures. Impact damage analysis, damage modeling, failure analysis, fatigue and fracture research and computer modeling.
Jan '84 - Sept '85	UNIVERSITY OF ILLINOIS - Urbana, Illinois Graduate Research Assistant- Dept. of Theoretical and Applied Mechanics and the Dept. of Mechanical Engineering. Failure analysis and computer modeling of truck/tractor wheels. Investigated failure mechanisms, causation, identification, and prediction of failure lifetime.
Jan '83- Jan '84	UNIVERSITY OF ILLINOIS - Urbana, Illinois Graduate Teaching Assistant - Dept. of Theoretical and Applied Mechanics Taught undergraduate statics and dynamics.

June '83- FIRESTONE TIRE AND RUBBER COMPANY - Akron, Ohio  
Sept '83 Research Engineer  
Investigated mechanical and material behavior of various viscoelastic (tire) compounds. Also investigated truck wheel failures.

### **PROFESSIONAL ASSOCIATIONS**

Society of Automotive Engineers  
Society of Accident Reconstructionists  
Southwestern Association of Technical Accident Investigators  
Association for the Advancement of Automotive Medicine  
Society of Forensic Engineers & Scientists  
International Society of Biomechanics  
Institute of Transportation Engineers  
Tau Beta Pi National Engineering Honor Society

### **LICENSES AND CERTIFICATES**

*Registered Professional Mechanical Engineer - State of California*  
Registration Number: M028890

*Certificate of Accreditation as a Traffic Accident Reconstructionist*  
The Accreditation Commission for Traffic Accident Reconstruction, Dec 1992

*Certification as a Crash Data Retrieval System Operator*  
Vetronix Corporation, May 2005

### **AWARDS and PANEL ACTIVITIES**

J.O. Smith Outstanding Young Teacher Award - Dept. of Theoretical and Applied Mechanics, 1984

Transportation Research Board – Award for Best Paper of Session, Pedestrian Committee, January 2000

Panel Member – National Academy of Sciences, TCRP Project A-28 regarding Fixed Route Bus and Pedestrian Collisions (Project completed).

### **PROFESSIONAL ACTIVITIES**

Western Chapter American Association of Automotive Medicine

Meeting and Lecture Attendance:

"Reconstruction Animation Using Computers"  
Los Angeles, CA - October 1989

"A Primer on Automobile Accident Reconstruction"  
Los Angeles, CA - April 1990

Southwestern Association of Technical Accident Investigators

"Staged Motorcycle/Automobile Collision"

Phoenix, AZ - April 1990

"Staged Automobile Collision"

Phoenix, AZ - July 1990

Texas Association of Accident Reconstruction Specialists

Society of Accident Reconstructionists

Washington Association of Technical Accident Investigators

Combined Meeting

"Staged Collision - Two moving vehicles"

"Computer Animation"

"Staged Vehicle Rollover Testing"

"Tractor/Trailer Skid Testing"

"ABS v. Non-ABS Automobile Skid Testing"

"Traffic Engineering"

"Skidpad Testing of Truck/Tractor"

"Skidpad Testing of ABS and Non-ABS Automobiles"

College Station, TX - June 1990

Stapp Car Crash Conference

34th Annual Proceedings

Orlando, FL - November 1990

Thirteenth International Technical Conference on Experimental Safety Vehicles

Paris, France - November 1991

Southwestern Association of Technical Accident Investigators

"Low Speed Rearend Impacts"

"Fraud Investigation"

San Diego, CA - March 1992

Society of Forensic Engineers and Scientists

"Skid Tests"

CHP Academy

Sacramento, CA - July 1992

Society of Automobile Engineers

SAE Congress

Detroit, Michigan - February 1992 to present

Technical Papers Reviewer – 1995 to present

Society of Automobile Engineers  
Future Transportation Technology Conference  
Co-organizer and Co-chairman of the Safety session  
Costa Mesa, CA - August 1992  
BH2VK  
"Staged Automobile Collisions"  
San Bernadino, CA - August 1992

Fourteenth International Technical Conference on Experimental Safety Vehicles  
Munich, Germany - May 1994

Fifteenth International Technical Conference on Enhanced Safety of Vehicles  
Melbourne, Australia - May 1996

Crash 1997  
Conference on Reconstruction and Safety on the Highway  
College Station, Texas - March 1997  
Association of Automotive Medicine Conference, Orlando, Florida, 1997

Crash 1998  
Conference on Reconstruction and Safety on the Highway  
College Station, Texas – October 1998

Seventeenth International Technical Conference on Enhanced Safety of Vehicles  
Amsterdam, Netherlands - May 2001

Crash Data Retrieval System Training  
Vetronix Corporation  
Santa Barbara, California – June 2001

Nineteenth International Technical Conference on Enhanced Safety of Vehicles  
Washington, D.C., May 2005

Transportation Research Board, Annual Conference, 2000 to present

Twentieth International Technical Conference on Enhanced Safety of Vehicles  
Lyon, France, May 2007

HVE Forum 2008, Engineering Dynamics Corporation, San Diego, CA, February 2008

Twenty-first International Technical Conference on Enhanced Safety of Vehicles  
Stuttgart, Germany, May 2009

## **PUBLICATIONS, PAPERS AND PRESENTATIONS**

**Fugger, Jr., T.F.**, "Service Histories Analyzed by the Local Strain Approach", University of Illinois at Urbana-Champaign, Materials Engineering - Mechanical Behavior, Report Number 120, May 1985.

Hight, P.V., **Fugger, Jr., T.F.** and Reust, T.J., "Automobile Damage Scales and Their Correlation," Proceedings of the Canadian Multidisciplinary Road Safety Conference VII, June 17-19, 1991, Vancouver, British Columbia.

Hight, P.V., **Fugger, Jr., T.F.** and Marcosky, J., "Automobile Damage Scales and the Effect on Injury Analysis," SAE Congress, Detroit, Michigan, February 1992

**Fugger, Jr., T.F.**, "The Art and Science of Accident Reconstruction," Annual Auto Seminar, Los Angeles Trial Lawyers Association, March 1993

"Results and Findings of the Bald Tire Testing in Wet and Dry Conditions"

Presentation

Society of Forensic Engineers and Scientists

Sacramento, CA - August 1993

Hight, P.V., **Fugger, Jr., T.F.**, et al, "Asymmetric Water Drag on Vehicle Trajectory and Human Response," I Mech E, Autotech '93, Birmingham, England, November 1993

"Accident Reconstruction Techniques Unique to Bicycle and Motorcycle Collisions"

Technical Editor of paper presented to Consumer Attorneys Association of Los Angeles, Los Angeles, CA - March 1995

**Fugger, Jr. T.F.**, Randles, B.C., Stein, PhD, A.C., Whiting, PhD, W.C., and Gallagher, B.,

"Analysis of Pedestrian Gait and Perception/Reaction at Signal-Controlled Crosswalk Intersections", Presented at the 79<sup>th</sup> Annual Meeting, Transportation Research Board, Washington, D.C., January 2000

**Fugger, Jr., T.F.** and Randles, B.C., "Forensic Aspects of Pedestrian Accident Reconstruction", Society of Forensic Engineers and Scientists, Big Sur, California, January 2000

**Fugger, Jr. T.F.**, Randles, B.C. and Eubanks, J., "Comparison of Pedestrian Accident Reconstruction Models to Experiment Test Data for Wrap Trajectories", *ImechE Conference Transactions* 2000-2, C567/031/2000, 2000.

**Fugger, T.**, Randles, B., Wobrock, J., Stein, A., and Whiting, W., "Analysis of elderly pedestrian gait and perception/reaction at signal-controlled crosswalk intersections", Transportation Research Board, TRB, National Research Council, Washington, D.C., 2001.

Randles, B., **Fugger, T.**, Eubanks, J., and Pasanen, E., "Investigation and analysis of real-life pedestrian collisions", Society of Automotive Engineers, 2001-01-0171, 2001.



**Fugger, T.**, Randles, B., Wobrock, J., Stein, A., and Whiting, W., “Pedestrian behavior at signal-controlled crosswalks”, Society of Automotive Engineers, 2001-01-0896, 2001.

**Fugger, T.**, Wobrock, J., Randles, B., Stein, A., and Whiting, W., “Driver characteristics at signal-controlled intersections”, Society of Automotive Engineers, 2001-01-0045, 2001.

**Fugger, T.**, “Pedestrian Accident Reconstruction”, Instructor for Society of Automotive Engineers Accident Reconstruction TopTec, Tempe, Arizona, May 2001

**Fugger, T.**, Randles, B., Wobrock, J. and Eubanks, J., “Pedestrian throw kinematics in forward projection collisions”, Society of Automotive Engineers, 2002-01-0019, 2002.

**Fugger, T.**, Randles, B., Wobrock, J., Welcher, J., Voss, D. and Eubanks, J. “Human occupant kinematics in low speed side impacts”, Society of Automotive Engineers, 2002-01-0020, 2002.

Wobrock, J., **Fugger, T.**, Randles, B. and Vrongistinos, K. “Vibrations Experienced by Wheelchair Users While Traversing Decorative Crosswalks”, World Congress of Biomechanics, 2002 Annual Conference Proceedings, 2002.

**Fugger, T.**, Randles, B., Welcher, J. and Szabo, T. “Vehicle and Occupant Kinematic Response to Low-Speed Override/Underride Collisions”, Society of Automotive Engineers, 2003-01-0158, 2003

**Fugger, T.**, “Evaluation of Personal Mobility Devices”, California Association of Accident Reconstructionists Meeting, Anaheim, California – October 2003

**Fugger, T.**, Randles, B., and Eubanks, J. “The Efficacy of Event Data Recorders in Pedestrian Related Accidents”, Society of Automotive Engineers, 2004-01-1195

Long, T., **Fugger, T.**, and Randles, B., “Vehicle Performance Characteristics and Seat Belt Effectiveness in Low Speed Vehicles and Golf Cars”, Nineteenth Enhanced Safety of Vehicles Conference, 05-0431W, May 2005