SALENA ZELLERS SCHMIDTKE

CURRICULUM VITAE

revised January 1, 2010

EDUCATION

Master of Science	1992	Biomedical Engineering University of Alabama at Birmingham Birmingham, Alabama
Bachelor of Science	1989	Biomedical Engineering Tulane University New Orleans, Louisiana

ACADEMIC APPOINTMENTS

February 1993 - To Present	**Senior Scientist**, **CDC Injury Control Research Center** **Southern Consortium for Injury Biomechanics** University of Alabama at Birmingham Birmingham, Alabama

Editor and Project Manager for publication of a Pediatric Injury Biomechanics Data Archive & Textbook through UAB's Injury Control Research Center and the Southern Consortium for Injury Biomechanics. The text will specify and describe the current state of the art in pediatric injury biomechanics focusing on injury prevention in the automobile crash envirionment. The objective of the book is to provide an archive of information, essentially a resource for computational modelers, researchers, future rulemaking upgrades, injury criteria development, dummy development, developers of child injury interventions, as well as a tool to assist in identification of gaps in research and potential funding opportunities. *Publication expected in early 2011.*

February 1993 - September 1996
Experimental Research Group - Team Leader
Surveillance Research Group -Team Leader
Biomechanics Laboratory
University of Alabama at Birmingham; Birmingham, Alabama

Coordinated and executed projects relating to clinical and experimental testing, as well as surveillance and epidemiological studies related to injury prevention and control. Specific research projects included:

- Case studies of pelvic and acetabular fracture patients involved in motor vehicle crashes
- Epidemiological studies of the inter-articular fractures of the pelvis and lower extremities
- Examination of the anthropometry of the human pelvis
- Mechanical comparisons of pelvic clamps for acute stabilization of the fractured pelvis

January 1993 - September 1994
Adjunct Instructor
Department of Biomedical Engineering
University of Alabama at Birmingham; Birmingham, Alabama

Taught *BioMechanics of Injury*, guest lectured in classes and seminars including *Biomechanics of Total Joint Replacement* and *Experimental Biomechanics.*

PROFESSIONAL EXPERIENCE

July 2004 - Present
President and CEO
BioInjury, LLC
Alexandria, Virginia

BioInjury, a Biomechanical Research Firm in the Washington, DC metropolitan area, is dedicated to safety research and injury prevention. BioInjury provides research, investigation, analysis and education on safety and biomechanics issues as well as in depth coordination with other organizations specializing injury prevention. Areas of expertise in the automotive crash environment include the following:

- Biomechanical Evaluation of Injury Mechanisms
- Pediatric Injury Tolerance and Injury Prevention
- Review and Analysis of Medical and Technical Literature
- Review and Analysis of Government Regulations and Rulemaking
- Analysis and Evaluation of Testing
- Biomechanical Analysis of Products that Enhance Safety

October 1997 - June 2004 **Owner and Managing Partner**
Strategic Safety, LLC
Arlington, Virginia

Strategic Safety, a partnership dedicated to identifying sources and causes of harm, specializes in education, research, investigation, and analysis of product safety and product defects. With experience in injury biomechanics, defects, and policy, Strategic Safety has a well-rounded background to deliver innovative strategies that address injury prevention in the automotive crash environment.

September 1996 - September 1997 **Senior Associate**
RH&A, LLC
Arlington, Virginia

RH&A is a partnership of professionals providing information, analysis and support to those who share the commitment to reducing harm caused by defective products and hazardous practices.

October 1991 - July 1996 **Vice President**
BioHorizons, Incorporated
Birmingham, Alabama

BioHorizons is a biomedical engineering professional service firm with a particular expertise in injury prevention and control and technology management. Duties as the Vice-President of BioHorizons included:

- Assist the president in daily corporate management and technical affairs
- Provide expertise in biomechanical engineering related to injury prevention and control
- Conduct research in biomechanical engineering related to injury prevention and control in conjunction with the UAB Injury Control and Research Center and the UAB Biomechanics Laboratory
- Conduct research and development aimed at new product launches in the biomedical industry
- Manage publications and research projects ongoing within the company

January 1990 - October 1991 **Laboratory Technician**
Immunogenetics Department
University of Alabama at Birmingham; Birmingham, Alabama

Performed isolation, quantification and labeling of DNA for testing of parental identity.

Summer 1988 **Project Engineer**
Orthopedics Department
Tulane University Medical School
New Orleans, Louisiana

Conducted examination of the range of motion of the metacarpo-phalangeal joint; Examined strength of materials and prostheses using an MTS; Initiated a statistical study on bone growth into porous coated prostheses.

Summer 1987 **Laboratory Technician**
Cancer Research and Development
Rockefeller University
New York City, New York

Participated in a study of the process of protein purification and translation across cell membranes.

PUBLICATIONS

Abstracts: D. Burke, MW Bidez, SZ Schmidtke. **"Prediction of Head Contact of Properly Restrained Children in Rear Seats of New Model Vehicles."** *BMES Annual Meeting*, 2007.

Schmidtke SZ, Bidez MW, Hill A, Alonso JE. **"Biomechanical Etiology of Bony Injury in Motor Vehicular Crashes: Case Studies."** *Surgery of the Pelvis and Acetabulum: The Third International Consensus*, October, 1996.

Schmidtke SZ, Alonso JE, Bidez MW, Molz FJ. **"Mechanical Stability of the Fractured Pelvis: A Comparison of Two Pelvic Stabilizers".** *AAOS Annual Conference*, May 1996 and *Surgery of the Pelvis and Acetabulum: The Third International Consensus*, October, 1996.

Schroeder CF, Schmidtke SZ, Bidez MW. **"Measuring the Human Pelvis: Radiographic Versus direct Data."** *Surgery of the Pelvis and Acetabulum: The Third International Consensus*, October, 1996.

Lewis PR, Molz FJ, Schmidtke SZ, Bidez MW. **"A NASS-Based Investigation of Pelvic Injury Within the Motor Vehicle Crash Environment.** *Surgery of the Pelvis and Acetabulum: The Third International Consensus*, October, 1996.

Alonso JE, Bidez MW, Schmidtke SZ. **"Acetabular Patterns Secondary to Automobile Crashes: An Initial Report of 201 Patients.** *Surgery of the Pelvis and Acetabulum: The Third International Consensus*, October, 1996.

Schmidtke SZ, Bidez MW, Alonso JE. **"Pelvic and Acetabular Fractures within the Automotive Crash Environment".** *International Conference on Pelvic and Lower Extremity Injuries*. December, 1995, Washington DC, The National Highway Traffic Safety Administration, US Department of Transportation.

Schroeder CF, Schmidtke SZ, Qu M, Bidez MW. **"Anthropometry of the Human Pelvis".** Proceedings of the Association for the Advancement of Automotive Medicine. Chicago, Illinois - October 1995

Bidez MW, Schmidtke SZ, Alonso JE. **"Pelvis and Femoral Neck Fractures within the Automotive Crash Environment".** CDC Biomechanics of Injury Symposium, May 5 - 6, 1994. Detroit, Michigan.

Lee DH, Schmidtke SZ, Bidez MW, Dupuy L. **"The Effect of Wrist and Finger Position on Strain in the Hand".** Annual Meeting American Society for Surgery of the Hand Phoenix, Arizona - November 1992.

Refereed Publications:

Adams JS, Schmidtke SZ, Bidez MW, Alonso JE, Hill A, and Molz FJ. **"Biomechanical Etiology of Pelvic and/or Acetabular Fractures Sustained by Restrained Drivers"** submitted to Journal of Trauma.

Schmidtke SZ, Bidez MW, Alonso JE. **"Acetabular Fractures in Automotive Crashes: An Initial Report of 201 Patients"** Proceedings for the International Conference on Pelvic and Lower Extremity Injuries, The National Highway Traffic Safety Administration, December, 1995.

Lewis PR, Molz FJ, Schmidtke SZ, Bidez MW. **"A NASS-Based Investigation of Pelvic Injury within the Motor Vehicle Crash Environment" 40th** Stapp Car Crash Conference, Society of Automotive Engineers Paper Number 962419, November 1996.

Schroeder CF, Schmidtke SZ, Bidez MW. **"Measuring the Human Pelvis: A Comparison of Direct and Radiographic Techniques using a Modern United States-Based Sample"** American Journal of Physical Anthropology. 103:471-479, 1997.

Monographs:

Schmidtke SZ, Bidez MW, Alonso JE. **"A Critical Evaluation of Currently Available Fracture Immobilization Devices".** Monograph, UAB Injury Prevention Research Center. University of Alabama Press. Birmingham, Alabama, January, 1991.

Dalton J, Oden M, Zellers S, Zerkle A. **"A New Feeding Device for the Aid of Quadriplegics".** Children's Hospital. New Orleans, Louisiana, 1989**.**

Thesis:

Schmidtke SZ. **"A Quantitative Analysis of the Rehabilitation Therapy used to Enhance Flexor Tendon Healing.** Master's Thesis. Department of Biomedical Engineering. The University of Alabama at Birmingham. Birmingham, Alabama - March 1992.

Zellers S. **"The Composite Nature of Bone**". Undergraduate Thesis. Department of Biomedical Engineering. Tulane University. New Orleans, Louisiana - 1989.

COURSE INSTRUCTION

"Biomechanics of Injury", Guest Lecturer - Epidemiology of Injury. School of Public Health, University of Alabama at Birmingham, Birmingham, Alabama - April 1996.

Instructor - Biomechanics of Injury. Biomedical Engineering Department, University of Alabama at Birmingham, Birmingham, Alabama - Spring 1994.

"Biomechanics of Total Joint Replacement of the Elbow, Wrist, and Hand", Guest Lecturer - Biomechanics of Total Joint Replacement. Biomedical Engineering Department, University of Alabama at Birmingham, Birmingham, Alabama - Fall 1992, 1993, 1994.

"Experimental Techniques for Ligament and Tendon Biomechanical Studies", Guest Lecturer - Experimental Biomechanics. Biomedical Engineering Department, University of Alabama at Birmingham, Birmingham, Alabama - Spring 1993.

PRESENTATIONS

"Prediction of Head Contact of Properly Restrained Children in Rear Seats of New Model Vehicles" D. Burke, MW Bidez, SZ Schmidtke. Poster 2007 BMES Annual Meeting.

"Rigid vs. Yielding Seats" AIEG Fall Meeting, October 2005.

"Research in Automobile Product Liability Cases" AIEG Paralegal Meeting, February 2004.
"**Government Research and Resources on the Internet".** Attorney's Information Exchange Group Paralegal Meeting, February 2004. SZ Schmidtke, SA Kuntz.

"Government Activities: NHTSA Vehicle Stability Rulemaking" SZ Schmidtke, SE Kane, SA Kuntz. AIEG Rollover Symposium III. June 2002.

"Biomechanics of Low Speed Injuries" NHTLA Annual Meeting October 1999.

"Biomechanics of Low Speed Injuries" ITLA Annual Meeting 1998.

"Injuries Do Happen: Protect Yourself and Others" Injury Control for Public Health and Rehabilitation Professionals. UAB Injury Control Research Center. Birmingham, Alabama; June 1996.

"Biomechanical Response of the Human Pelvis to Automobile Side Impact" UAB Injury Control Research Center: Research in Progress Seminar. Birmingham, Alabama - March 1996.

"Anthropometry of the Human Pelvis" Poster Presentation, Association for the Advancement of Automotive Medicine, Chicago, Illinois - October 1995.

"Biomechanics of Injury" Enrichment Day, Gwen Elementary School. Birmingham, Alabama - September 1995.

"Motor Vehicle Injuries: An Engineering Perspective" Tennessee Lifesavers Conference, Highway Safety Conference. Knoxville, Tennessee - July 1995.

"Biomechanical Response of the Human Pelvis to Automobile Side Impact" UAB Injury Control Research Center: Research in Progress Seminar. Birmingham, Alabama - April 1995.

"Advances in Injury Prevention" 1995 Alabama Traffic Safety Conference: *Highway Safety 2000 ... Setting the Pace.* Huntsville, Alabama - February 1995.

"Biomechanical Investigations of Pelvic Tolerance and Fracture Fixation" Seminar Presentation, Department of Biomedical Engineering. University of Alabama at Birmingham, Birmingham, Alabama - February 1995.

"Experimental Techniques in Spinal Biomechanics" Course Presentation - Experimental Biomechanics. Department of Biomedical Engineering, University of Alabama at Birmingham - May 1995.

"Biomechanical Response of the Human Pelvis to Side Impact" Alabama Society of Professional Engineers. Birmingham, Alabama - February 1995.

"Biomechanics of Injury Prevention" Ergonomics for Union Representatives, Center for Labor Education and Research. Birmingham, Alabama - December 1994.

"The Effect of Wrist and Finger Position on Strain in the Hand" American Society for Surgery of the Hand. Phoenix, Arizona - November 1992.

"A Quantitative Analysis of the Rehabilitation Therapy used to Enhance Flexor Tendon Healing after Reparative Surgery" Master's Thesis Defense. Department of Biomedical Engineering, University of Alabama at Birmingham. Birmingham, Alabama - March 1992.

"A Quantitative Analysis of the Rehabilitation Therapy used to Enhance Flexor Tendon Healing after Reparative Surgery" Seminar Presentation. Department of Biomedical Engineering, University of Alabama at Birmingham. Birmingham, Alabama - March 1992.

"MCP Arthroplasty in Rheumatoid Arthritis Patients" Course Presentation - Mechanical Basis of Total Joint Reconstruction. Department of Biomedical Engineering, University of Alabama at Birmingham. Birmingham, Alabama - 1991.

"A New Feeding Device for the Aid of Quadriplegics" Course Presentation - Design Analysis. Department of Biomedical Engineering, **Tulane University.** New Orleans, Louisiana - 1989.

"Composite Material Models for Bone" Course Presentation - Bone Mechanics. Department of Biomedical Engineering, Tulane University. New Orleans, Louisiana - 1989.

"The Composite Nature of Bone" Seminar Presentation. Department of Biomedical Engineering, Tulane University. New Orleans, Louisiana - 1989.