



## Paul R Lewis, Jr., M.S. BME

Email: plewisjr0128@gmail.com - Telephone: 770-884-8029  
55 Park Square, Suite 207, Roswell, Georgia 30075

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### CURRICULUM VITAE

#### EDUCATION:

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| MASTER OF SCIENCE       | 1995      | Biomedical Engineering<br>University of Alabama<br>Birmingham<br>Birmingham, Alabama                                   |
| BACHELOR OF SCIENCE     | 1991      | Industrial Engineering<br>University of Alabama<br>Tuscaloosa, Alabama   |
| POST GRADUATE EDUCATION | 9/96-9/98 | Internship Forensic<br>Pathology and Medicine<br>Office of the Medical<br>Examiner<br>Metropolitan Atlanta,<br>Georgia |

#### PROFESSIONAL EXPERIENCE:

**2011 to present**  
**Bioforensic Consulting, Inc.**  
**Primary Biomechanical Engineering Consultant**  
**Roswell, GA 30076**

- Provide expertise in biomedical/mechanical engineering related to injury causation, prevention and control, and occupant kinematics.

## **1998 to 2010**

### **Burton & Associates**

#### **Forensic Investigator and Primary Biomechanical Engineering Consultant Alpharetta, GA 30004**

- Provide expertise in biomedical/mechanical engineering related to injury causation, prevention and control, and occupant kinematics.
- Conducted on scene and follow up investigation of traffic fatalities, homicides, suicides and natural death.
- Conducted post mortem examinations, autopsies and exhumations of victims to determine cause and manner of injuries and/or death.
- Review radiology studies and films.
- Involved in the investigation of approximately 3000 vehicle accidents with fatality or significant injuries since 1995.

## **1991 - 1998**

### **Paul R Lewis & Associates**

#### **Senior Associate and Biomechanical Engineering Consultant Birmingham, AL 35209**

- Researched and prepared technical support issues regarding injury causation, prevention and control, occupant kinematics and accident reconstruction.
- Conducted post traffic crash vehicle inspections.
- Facilitated exemplar vehicle and surrogate testing.

## **PUBLICATIONS/PRESENTATIONS:**

### **ABSTRACTS**

“A NASS-Based Investigation of Pelvic Injury Within The Motor Vehicle Crash Environment”, Lewis, Jr., PR; Molz, FJ; Schmidtke, SZ; Bidez, MW. Surgery of The Pelvis and Acetabulum: The Third International Consensus. October 1996, Pittsburgh, PA, Albany College, The University of Alabama Birmingham School of Medicine, Duquesne University.

“Ejection of Restrained Vehicle Occupants Due to Seat and Belt Failure in Rear Impacts”, Mark Pozzi MS, Edgewood NM; Paul Lewis MS, Roswell GA; Kenneth Saczalski PhD, Newport Beach CA; Todd Saczalski BS, Sedona AZ; Charles Dickerson BS, Phoenix AZ., Annual Meeting of the American Academy of Forensic Sciences, February 19, 2015, Miami, Florida.

“Enhanced Head and Spinal Injury Caused by Predictable Seat and Belt Failure Combined with Unsafe Vehicle Interior Structures”, Mark Pozzi MS, Edgewood NM; Kenneth Saczalski PhD, Newport Beach CA; Paul Lewis MS, Roswell GA; Todd

Saczalski BS, Sedona AZ; Charles Dickerson BS, Phoenix AZ. Annual Meeting of the American Academy of Forensic Sciences, February 19, 2015, Miami, Florida.

## **PAPERS**

“A NASS-Based Investigation of Pelvic Injury Within The Motor Vehicle Crash Environment”. Lewis, Jr., PR; Molz, FJ; Schmidtke, SZ; Bidez, MW.; The 40<sup>th</sup> Stapp Car Crash Conference, November 4-6, 1996, Albuquerque, NM.

“Head & Spine Injuries in Roof Crush and Rollover Accidents”. Burton, Joseph L. and Lewis, Jr., Paul R.; AIEG Spring Seminar, May 9, 1997, Atlanta, GA.

“Belt Integrated Vehicular Seat Rear Impact Studies”. Kenneth J. Saczalski, Ph.D., Joseph L. Burton, M.D., Paul R. Lewis, Jr., Todd K. Saczalski, Peter E. Baray. Seoul 2000 FISITA World Automotive Congress, Paper #F2000G279, June 12-15, 2000, Seoul, Korea.

“Air Bag Injuries to Infants, Children and Small Adults”. Joseph L. Burton, M.D., Paul R. Lewis, Jr.; Proceedings of the American Academy of Forensic Sciences 53<sup>rd</sup> Annual Meeting, Paper G-96, February 23, 2001, Seattle, Washington.

“Evaluation of Rear Impact Seat System Performance Using a Combined Load Neck Injury Criteria and Hybrid III Surrogates”. Kenneth J. Saczalski, Ph.D., Joseph L. Burton, M.D., Paul R. Lewis, Jr., Todd K. Saczalski, and Peter E. Baray; ASME International Congress and Exposition, November 11-16, 2001, New York, NY.

“Post Collision Vehicular Fires – Determination of Probability of Occupant Survival Post Impact”. Burton, Joseph L. and Lewis, Jr., Paul R.; 54<sup>th</sup> Annual Meeting of the American Academy of Forensic Sciences, Abstract No. 531, February 11-16, 2002.

“Study of Seat System Performance Related to Injury of Rear Seated Children & Infants in Rear Impacts”. Kenneth J. Saczalski, Ph.D., Joseph L. Burton, M.D., Paul R. Lewis, Jr., Todd K. Saczalski, and Peter E. Baray. Proceedings of IMECE2002 ASME International Mechanical Engineering Congress & Exposition, Paper No. IMECE2002-33517, November 17-22, 2002, New Orleans, LA.

“Experimental Injury Study of Children Seated Behind Collapsing Front Seats in Rear Impacts”. Kenneth J. Saczalski, Anthony Sances, Joseph L. Burton and Paul R. Lewis, Jr.; 40<sup>th</sup> International ISA Biomedical Sciences Instrumentation Symposium, Biloxi, Mississippi, April 11-13, 2003.

“Experimental Verification of Biomechanical Occupant Response Predictions for Front & Rear Seated Passengers Subjected to Rear Impacts”. Kenneth J. Saczalski, Jay Saul, Joseph Lawson Burton M.D. & Paul R. Lewis, Jr.; 2003 Digital Human Modeling For Design and Engineering Conference & Exhibition, June 16-19, 2003, Montreal, Canada; Society of Automotive Engineers, SAE Paper No. 2003-03-2205.

“Occupant Kinematics with Child Safety Seats Tested Under Real World Conditions”. Gary R. Whitman, John Yannacone, Joseph Burton, Paul Lewis, Jr. and Dennis F. Shanahan; 47<sup>th</sup> Annual Proceedings of the Association For The Advancement of Automotive Medicine, September 22-24, 2003.

“Biomechanical Study of Rear Child Chest Injury Measures Related to Collapsing Front Seats in Rear Impacts”. Kenneth J. Saczalski, Anthony Sances, Srirangam Kumaresan, Steve Meyer, Joseph L. Burton and Paul R. Lewis, Jr.; Proceedings of IMECE’03, 2003 ASME International Mechanical Engineering Congress, November 15-21, 2003, Washington, D.C., Paper No. IMECE2003-43061.

“Experimental Analysis of Head and Neck Loads for the Out-of-Position Occupant with Single and Dual-Stage Depowered Airbags”. Craig A. Good, Marshal H. Paulo and Paul R. Lewis, Jr.; SAE 2004 World Congress & Exposition, March 8-11, 2004, Society of Automotive Engineers, SAE Paper No. 2004-01-0311.

“An Experimental Method for Multi-Variable Analysis of Vehicle Safety Systems and Application to Front Seats & Rear Occupant Interaction in Rear Impacts”. Kenneth J. Saczalski, Srirangam Kumaresan, Anthony Sances, Joseph L. Burton and Paul R. Lewis, Jr.; Proceedings of IMECE04, 2004 ASME International Mechanical Engineering Congress and Exposition, November 13-20, 2004, Anaheim, California, Paper No. IMECE2004-60785.

“Computer Simulation of Rear Impact Biomechanical Occupant Response Predictions for Front & Rear Seated Passengers”. Kenneth J. Saczalski, Ph.D., Jay Saul, Anthony Sances, Srirangam Kumaresan, Ph.D., Joseph L. Burton, M.D., Paul R. Lewis, Jr. Paper No. F2004U065, 2004 FISITA World Automotive Congress in Barcelona, Spain.

“Multivariate Head Injury Threshold Measures for Various Sized Children Seated behind Vehicle Seats in Rear Impacts”. Kenneth J. Saczalski, Ph.D., Anthony Sances, Srirangam Kumaresan, Ph.D., M. Pozzi, MS, Todd K. Saczalski, Joseph L. Burton, M.D., Paul R. Lewis, Jr. ISA 2004, Volume 449, pages 381-386.

“Biomechanical Analysis and Injury Prevention in Off-Highway Vehicular Crashes “ Joe Burton, Sri Kumar, Paul Lewis, Jr., Lou D’Aulerio, Michael Kleinberger, Daniel Strickland. Rocky Mountain Bioengineering Symposium & International ISA Biomedical Sciences Instrumentation Symposium. April 9-11, 2010 Laramie, Wyoming.

## **PRESENTATIONS**

Lewis, Jr., PR; Molz, FJ; Schmidtke, SZ; Bidez, MW. “A NASS-Based Investigation of Pelvic Injury Within The Motor Vehicle Crash Environment”. The 40<sup>th</sup> Stapp Car Crash Conference, November 5, 1996, Albuquerque, NM.

“Biomechanics, Reconstructing Injuries, Vehicle Inspections and Witness Marks”. Motor Vehicle Products Liability Seminar. May 15, 1998, Little Rock, Arkansas.

“Airbags: History, Function and Injuries”. AIEG Auto Focus 1998 Seminar. September 25, 1998, San Francisco, California.

“Airbag Injuries to Infants, Children and Small Adults”. 53<sup>rd</sup> Annual Meeting of the American Academy of Forensic Sciences. February 23, 2001, Seattle, Washington.

“Biomechanics-Kinematics Conscious Pain and Suffering”. AIEG Auto Focus 2010 October 21, 2010, Sante Fe, New Mexico.

## **POSTER PRESENTATIONS**

“A NASS-Based Investigation of Pelvic Injury Within The Motor Vehicle Crash Environment”, Jorge Alonso, M.D.; Paul R. Lewis, Jr.; Fred Molz; Salena Schmidtke and Martha W. Bidez; 65<sup>th</sup> Annual Meeting of the American Academy of Orthopedic Surgeons, New Orleans, LA; March 22, 1998.

## **PROFESSIONAL DEVELOPMENT:**

|                      |   |
|----------------------|---|
| September 9-11, 1992 | 1992 International Conference on the Biomechanics of Impacts; International Research Council on Biokinetics of Impacts, Verona, Italy |
| September 23, 1992   | Vehicle Rollover TOPTEC, Society of Automotive Engineers, Phoenix, AZ   |
| November 3, 1996     | 24 <sup>th</sup> Annual International Workshop on Human Subjects for Biomechanical Research, NHTSA, Albuquerque, NM                   |
| November 4-6, 1996   | 40 <sup>th</sup> STAPP Car Crash Conference, Society of Automotive Engineers, Albuquerque, NM   |
| November 12, 1997    | Second Child Occupant Protection Symposium, Society of Automotive Engineers and AAAM, Orlando, FL                                     |
| November 13-14, 1997 | 41 <sup>st</sup> STAPP Car Crash Conference, Society of Automotive Engineers, Orlando, FL   |
| November 15, 1997    | 25 <sup>th</sup> Annual International Workshop on Human Subjects for Biomechanical Research, NHTSA, Orlando, FL                       |

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| April 2-3, 1998       | ABA Seminar, Emerging Issues in Motor Vehicle Product Liability Litigation, Phoenix, AZ  |
| May 15, 1998          | Motor Vehicle Products Liability Seminar. Little Rock, AR  |
| August 13-14, 1998    | The Biomechanics of Impact – Understanding the Limits of Human Tolerance, Association for the Advancement of Automotive Medicine, Captiva Island, FL   |
| December 7-11, 1998   | Police and Medicolegal Investigation of Death, Miami-Dade County Medical Examiners Dept., Miami, FL  |
| February 19-23, 2001  | American Academy of Forensic Sciences 53 <sup>rd</sup> Annual Meeting, Seattle, WA   |
| February 11-16, 2002  | American Academy of Forensic Sciences 54 <sup>th</sup> Annual Meeting, Atlanta, GA   |
| October 15-18, 2006   | 50 <sup>th</sup> Association for the Advancement of Automotive Medicine Annual Scientific Conference, Chicago, IL  |
| July 18-20, 2007      | Emergency World Summit on Roof Crush Hyatt Regency, Washington on Capitol Hill, Washington, D.C.   |
| September 27-29, 2010 | National Crash Analysis(NCAC)Conference U.S. Department of Transportation/Federal Highway Administration and the National Highway Safety Administration. George Washington University Ashburn VA |
| August 22-23, 2013    | CDR Training Tech I & II Swansea, MA   |

**PROFESSIONAL ORGANIZATIONS:**

American Association of Safety Engineers (AASE)  
American Society of Mechanical Engineers (ASME)  
Biomedical Engineering Society (BMES)  
Institute for Industrial Engineering (IIE)  
Society of Automotive Engineers (SAE)  
Association for the Advancement of Automotive Medicine (AAAM)  
American Academy of Forensic Sciences (AAFS)