ABOUT THE AUTHORS

Stefan Duma, Ph.D.
Stefan Duma is a professor and department head of biomedical engineering at Virginia Tech, which is the joint program between Virginia Tech and Wake Forest University called the School of Biomedical Engineering and Sciences. Dr. Duma is responsible for 51 tenured and tenure track faculty with over $25 million in annual expenditures. In addition, Dr. Duma was the founding director of the Center for Injury Biomechanics (CIB) and has received external funding from the NIH, CDC, NSF, DOT-NHTSA, DOD, and industry partners including Toyota, Ford, and GM. He has published over 200 technical papers in the field of injury biomechanics, including 80 peer-reviewed journal papers. His research has been recognized with the AAAM Best Scientific Paper Award in 2004 and 2007, two AAAM Best Student Paper Awards, the Stapp Conference Best Paper Award, and four Best Student Awards at Stapp Conferences. Dr. Duma is a Fellow in AAAM. He is married to Dr. Chrissy Duma and they have two children, Lauren age 9 and Brock age 7.

Greg G. Duma, M.D.
Dr. Duma received his undergraduate degree in chemistry from the University of Tennessee in Knoxville, TN in 1987. Afterward, he received his M.D. from the University of Tennessee Center for Health Sciences in Memphis, TN. He completed his residency in the field of obstetrics and gynecology at the University of Cincinnati. Dr. Duma was an associate professor in clinical obstetrics and gynecology at The University of Cincinnati and was the Director of Gynecologic Laparoscopic Surgery at the medical center. Currently Dr. Duma is an adjunct professor in the Virginia Tech – Wake Forest University School of Biomedical Engineering and Sciences, and he is in private practice in Covington, KY.

Melissa C. Hulse, M.S.
Melissa Hulse received her M.S. degree from Virginia Tech in Industrial Systems Engineering/Human Factors in 1988. Having published over 20 publications and two book chapters, her main focus has been human factors as it pertains to automotive safety. She has worked at the University of Idaho, University of Iowa, and the Virginia Tech Transportation Institute.

In 2009, Ms. Hulse began working at the Center for Injury Biomechanics at Virginia Tech. Her research has included seatbelt safety, pregnancy trauma statistics, and child toy safety.
**Kathleen D. Klinich, Ph.D.**

Kathleen DeSantis Klinich is an assistant research scientist in UMTRI's Biosciences Group. She earned a Ph.D. in mechanical engineering from the University of Michigan and B.S. and M.S. degrees in mechanical engineering, as well as a B.A. in technical writing, from Case Western Reserve University. Prior to joining UMTRI in 1996, she worked as a research engineer for TRC, Inc. at NHTSA's Vehicle Research and Test Center.

Dr. Klinich's research interests focus on protecting occupants in motor-vehicle crashes. She has experience in the analysis of motor-vehicle crashes and crash databases, child passenger safety, pregnant occupant safety, crash dummy design, laboratory reconstruction of real-world loading events, injury criteria development, occupant-anthropometry and posture evaluation, child restraint usability, and finite element modeling. She has authored dozens of technical papers on these topics. She is active in the SAE Child Restraints and SAE Dummy Testing Equipment Committees.

**Sarah J. Manoogian, Ph.D.**

Sarah Manoogian joined Biodynamic Research Corporation in 2008 after completing her doctorate in mechanical engineering at Virginia Polytechnic Institute and State University. She is a licensed engineer in the state of Texas and consults in the fields of biomechanics, injury causation analysis, and accident reconstruction. She currently holds an ACTAR accreditation for accident reconstruction. Her primary areas of research are evaluating adverse fetal outcomes for pregnant women and analyzing head accelerations in sports. Additionally, she has published papers on everyday accelerations, neck injuries, bone strength, soft tissue properties, and various computational modeling tools.

Dr. Manoogian has researched several areas that contribute to the advancement of pregnant occupant protection. Using a computational model of a pregnant female, she has considered the effects of accelerations from everyday activities to loading in a 35 mile per hour barrier impact. She has quantified the material response of pregnant uterine tissue in dynamic biaxial loading. Dr. Manoogian has also tested placental tissues at various strain rates and determined the response of the two primary layers of the tissue. Her research studies on uterine and placental tissues have provided material properties for use in pregnant occupant models that experience dynamic loading.
Jonathan D. Rupp, Ph.D.

Dr. Rupp is an assistant research scientist at the University of Michigan Transportation Research Institute and a research assistant professor in the University of Michigan Department of Emergency Medicine. For the past 15 years, he has worked to improve vehicle safety by collecting and analyzing data on vehicle performance and occupant injury in crashes, characterizing human injury response and restraint system effectiveness, and developing tools that assess injury potential in crashes. Dr. Rupp currently directs research to study the effects of occupant characteristics (size, shape, gender, and age) on adult and pediatric impact response and injury outcome in crashes and the ability of new active and passive vehicle safety systems to mitigate the potential for injury in crashes. He is also actively developing new techniques for combined analysis of different crash-injury databases.

Lawrence W. Schneider, Ph.D.

Dr. Lawrence Schneider is a research professor, head of the Biosciences Group of the University of Michigan Transportation Research Institute (UMTRI), and an associate director of UMTRI. His research in biomechanics over 37 years spans a wide range of topics, including child and adult anthropometry for restraint system and vehicle interior design, studies of human impact response and injury tolerance, development of advanced anthropomorphic test devices and associated injury criteria, improved transportation safety for disabled travelers, and the application of in-depth crash investigations and crash/injury data to studying injury causation and assessing the effectiveness of occupant-protection systems.

Dr. Schneider is lead author or co-author on more than eighty peer-reviewed publications and more than fifty technical reports. He is a member of the Stapp Car Crash Conference Advisory Committee and has served as general chairman of five Stapp conferences. He is also an editor-in-chief of the Stapp Car Crash Journal, a member of the Stapp Student Awards Committee, a founding member of the Stapp Association, and member of the Stapp Board of Directors. He is also the director of the Rehabilitation Engineering Research Center on Wheelchair Transportation Safety funded by a five-year grant from the National Institute on Disability and Rehabilitation Research.

Joel D. Stitzel, Ph.D.

Dr. Joel D. Stitzel, Ph.D. is an associate professor of biomedical engineering at Wake Forest University School of Medicine. He is a core faculty member of the Virginia Tech – Wake Forest University School of Biomedical Engineering and Sciences. He is currently program leader and director of the Wake Forest Campus of the Virginia Tech – Wake Forest University Center for Injury Biomechanics. He received a B.S. in Engineering Science and Mechanics from Virginia Tech, an M.S. in Biomedical Engineering from the Medical College of Virginia, and Ph.D. in Mechanical Engineering from Virginia Tech in 2003.
His dissertation work involved modeling of the human rib cage and thorax. He is the engineering co-PI of Wake Forest University School of Medicine’s Crash Injury Research and Engineering Network center. He is the PI of the Global Human Body Models Consortium Integration Center, the lead center on a global endeavor to create the industry-standard finite element model of the human body for trauma prediction. His interests include child and elderly safety, finite element modeling techniques, soft tissue biomechanics generally and lung injury, eye injury, brain injury, and carotid injury in particular. He has authored papers on biomechanics of the eye, pregnant occupants, anthropometry and its relationship to injury, and lung trauma. His future goals include enhancing the trauma research interface between clinicians and engineers, and improving human safety. His efforts focus on the prediction, mitigation, and prevention of trauma in a variety of scenarios, including automotive, sports, and military applications.