



Foreword

by

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As an emergency physician I personally have learned from CIREN research. I have used the life-saving techniques developed by CIREN for the diagnosis of liver injuries in crashes with 2-point belts. Furthermore, I have been able to teach better emergency care for crash victims because of CIREN findings.

The medical and engineering research efforts of CIREN form a valuable program of the National Highway Traffic Safety Administration (NHTSA). CIREN has forged powerful teams of medical researchers and safety engineers from NHTSA, universities, and the automotive industry. These teams are performing leading edge research on serious injuries in real-world crashes to advance safety.

The crash injury research contributions of the CIREN centers that are noted in this report include many findings that currently are in various stages of development, testing, and evaluation. As these findings are applied over time, the safety benefits of this basic research will become a reality and result in a Safer America.

CIREN researchers have produced more than 100 scientific publications based on research on more than 1,000 crash injured people. But, the past accomplishments of CIREN are simply a prologue to its future contributions. I can attest to this for several reasons:

- The nation has a great and urgent need to reduce the toll of nearly 42,000 crash deaths, half of which do not receive medical care at a hospital, and more than 3 million people suffering injuries in crashes that result in economic costs to the nation of \$100 billion each year.
- The opportunities for CIREN contributions to advance safety are growing each year as the researchers at each center develop a greater level of understanding of opportunities to prevent and treat crash injuries.
- The collaboration of NHTSA, CIREN, and automotive industry researchers continues to grow.
- The opportunity for advancing safety is also growing as the Centers now engage in multi-center research using networked data.

This CIREN Program report highlights cumulative contributions of the center researchers to advance the prevention and treatment of crash injuries. But, the nation's need for improvements in safety demands that we not rest on our laurels. We must move forward to produce further medical and engineering advances in automotive safety.

Physicians and engineers are on the threshold of using new technologies to apply information from crash sensors to achieve faster and smarter emergency medical treatment of crash victims. We are working together to develop new safety technologies such as better air bags and Automatic Crash Notification (ACN) to reduce the incidence, severity, consequences, and costs of crash injuries.

NHTSA's CIREN centers are now providing the nation with its most detailed medical and engineering analyses of serious injuries occurring in real world crashes. CIREN crash injury data and analyses are growing each year and are being organized by NHTSA into a powerful scientific knowledge base. The result is an increasingly useful research resource for discovering and defining opportunities to reduce the tragedies of deaths, injuries, disabilities and human suffering.

CIREN centers are educating and training graduate students in medicine and engineering. Many of these individuals will go on to make additional contributions to the practice of emergency care in hospitals and universities around the nation. In addition, a growing number of engineers are gaining medical knowledge and going back to jobs in the automotive industry. There they are able to apply their knowledge of injuries to design safer vehicles.

Thus, the work of CIREN researchers serves to improve the nation's safety infrastructure. CIREN researchers are sharing their safety findings at the federal, State and local level. This sharing of information conveys their life-protecting findings so that others may live, learn, and leave a legacy of a Safer America.

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