CIREN & UMPIRE

Past, Present, & Future

Carla Kohoyda-Inglis, MPA

Motor Vehicle Crashes

- 1,000,000 deaths per year worldwide
- No. 2 global health problem by the year 2020 – World Health Organization

CIREN

Crash Injury Research & Engineering Network

- NHTSA sponsored program

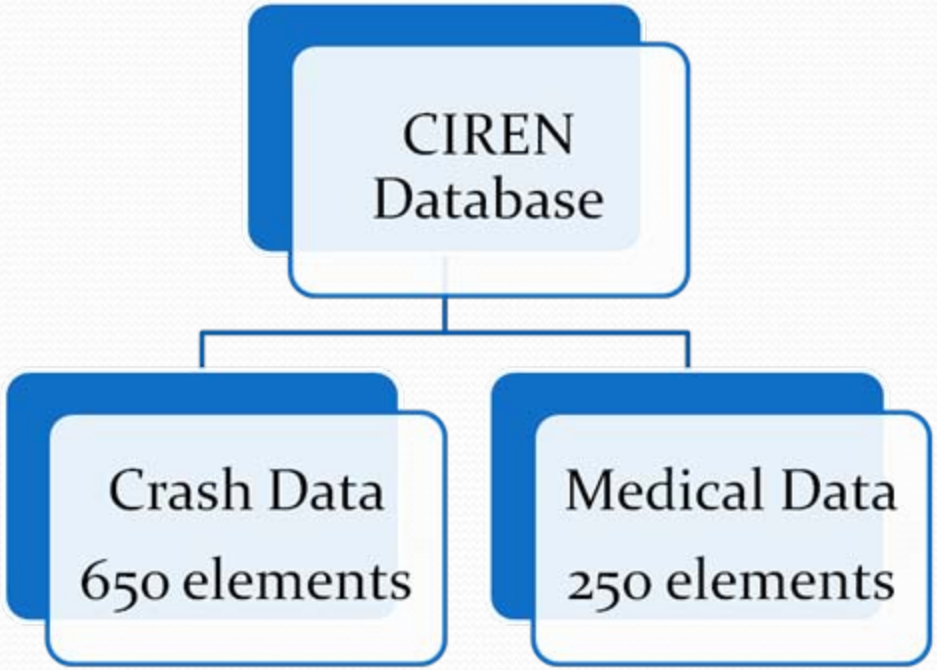
Mission Statement:

To improve the prevention, treatment, and rehabilitation of motor vehicle crash injuries to reduce deaths, disabilities, and human and economic costs

CIREN

Crash Injury Research & Engineering Network

- Newer model year vehicles involved in crashes
- Severely injured patients
- Collect 100s of data points on vehicle & occupants
- National database



CIREN

Crash Injury Research & Engineering Network

- Began as 1 of 3 GM funded centers, 1996
  - Michigan
  - San Diego County
  - Harborview Medical Center, Seattle
- Joined 4 existing centers
  - UMDNJ, Newark
  - University of Maryland, Baltimore
  - Children's National Medical Center, DC
  - University of Miami

Early Case Reviews

- CIREN Staff
  - Stewart Wang, MD, PhD, wearing the “every-doctor” cap
  - Katrina Knight, administrator & patient recruiter
  - Carla Kohoyda-Inglis, note taker

- UMTRI Staff
  - Larry Schneider, PhD, biomechanic
  - Joel MacWilliams, crash investigator

Growing Pains

- 1998: Opened up case reviews to GM engineers
- August 1999: Hosted an open meeting with NHTSA
- 2000: Parts suppliers began attending
- Added to our staff
  - Smita Patel, MBBS, MRCP, FRCR, Radiology
  - Hugh Garton, MD, Neurosurgery
  - Bader Cassin, MD, Medical Examiner
  - Carl Hein, EMT, first responder
  - James Goulet, MD, Orthopaedics

UMPIRE

University of Michigan Program for Injury Research & Education

- Uniquely situation – close proximity to auto industry
- Connections to many OEMs and suppliers
- Level I Trauma Center
- Teaching hospital

Current CIREN Network

UMPIRE Projects

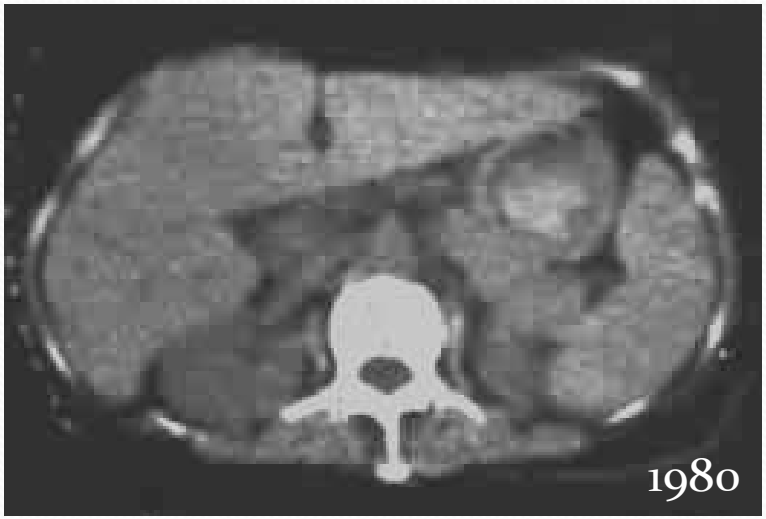
Fellowship

- Allow engineers to experience the “occupant” as a “patient”
- Medical School
  - Anatomy labs/dissection
  - Animal labs
  - Observe procedures & operations
  - Expert lectures
- Ambassadors to their co-workers

UMPIRE Projects

Radiology

- Roughly 12,000 scans/month
- Less radiation
- Faster scanning
- More accurate



UMPIRE Projects

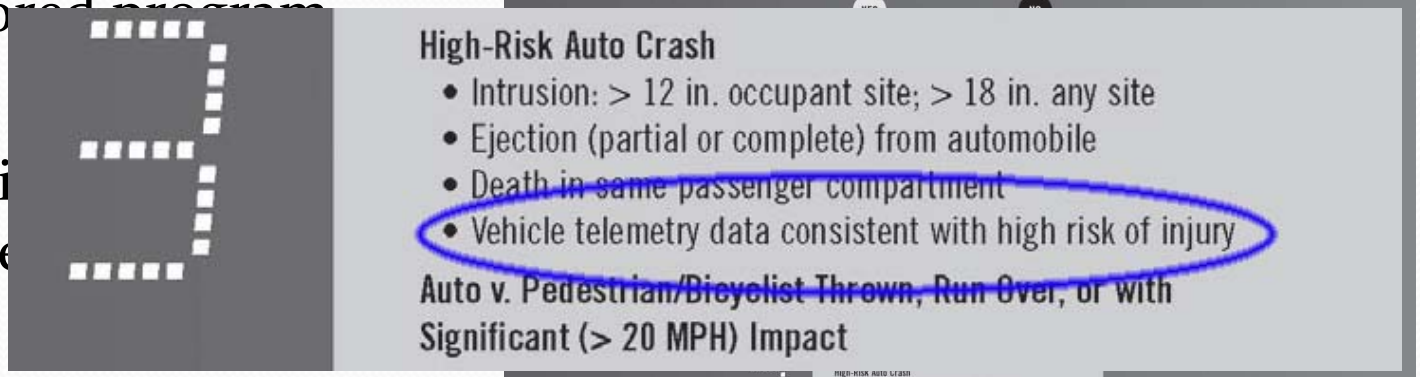
Human Body Modeling

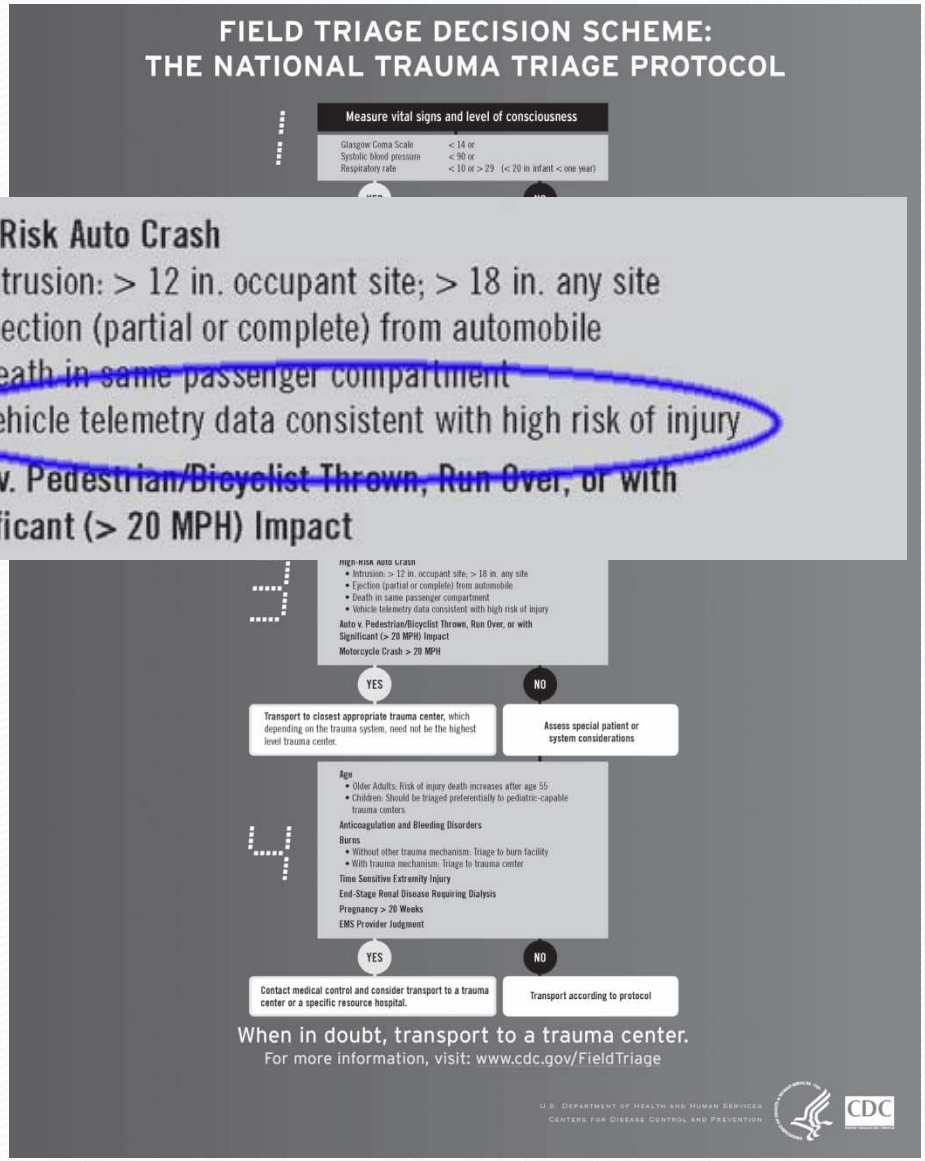
- Global Human Body Modeling Consortium & Japan Automobile Research Institute
- Creating new software and scripts to enable engineers to accurately model the human body in crashes
- Building a database of actual human measurements and radiological scans over time

UMPIRE Projects

Field Triage

- CDC sponsored program
- Updating tri
  national leve
- Distributed and adopted all over the world
- Directly impacts how crash occupants are treated





UMPIRE Projects

OnStar/GM

- Modeled on CIREN
- Rollover & frontal crashes
- Crash Occurs
  - OnStar is notified & contacts the occupant
  - UMPIRE gets occupant/patient contact information
  - Send out crash investigator, contact hospital
  - All material is re-constituted at UM
  - Case is reviewed

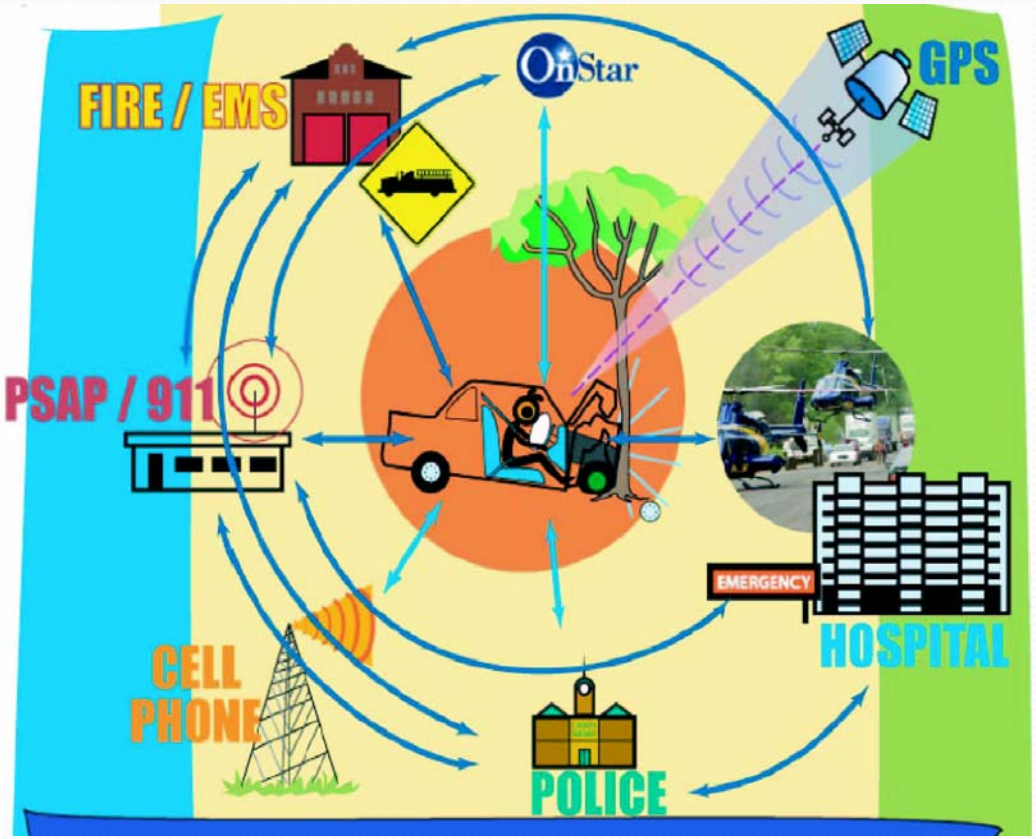
UMPIRE Projects

Automatic Collision Notification

- Education Modules for First Responders

http://www.crashedu.org/

- Integrating ACN with EMTs to improve post-crash care



Lots of data…

UMPIRE Wish List

- Immediate notification
- Location
- Occupant number
- Occupant identification
- Occupant characteristics (age, medical problems)
- Occupant condition (consciousness, distress)
- Restraint usage
- Crash conditions
  - Severity
  - Configuration (side, offset, frontal, rear)
  - Rollover
  - Vehicle types
  - Intrusion into passenger compartment
- Instant communication

Questions?

Thank you