



UNIVERSITY of MARYLAND  
SCHOOL OF MEDICINE  
SHOCK, TRAUMA AND ANESTHESIOLOGY  
RESEARCH CENTER

# *Charles “McC” Mathias National Study Center for Trauma and EMS*

## **2023 EMS Board Report**

January 16, 2024





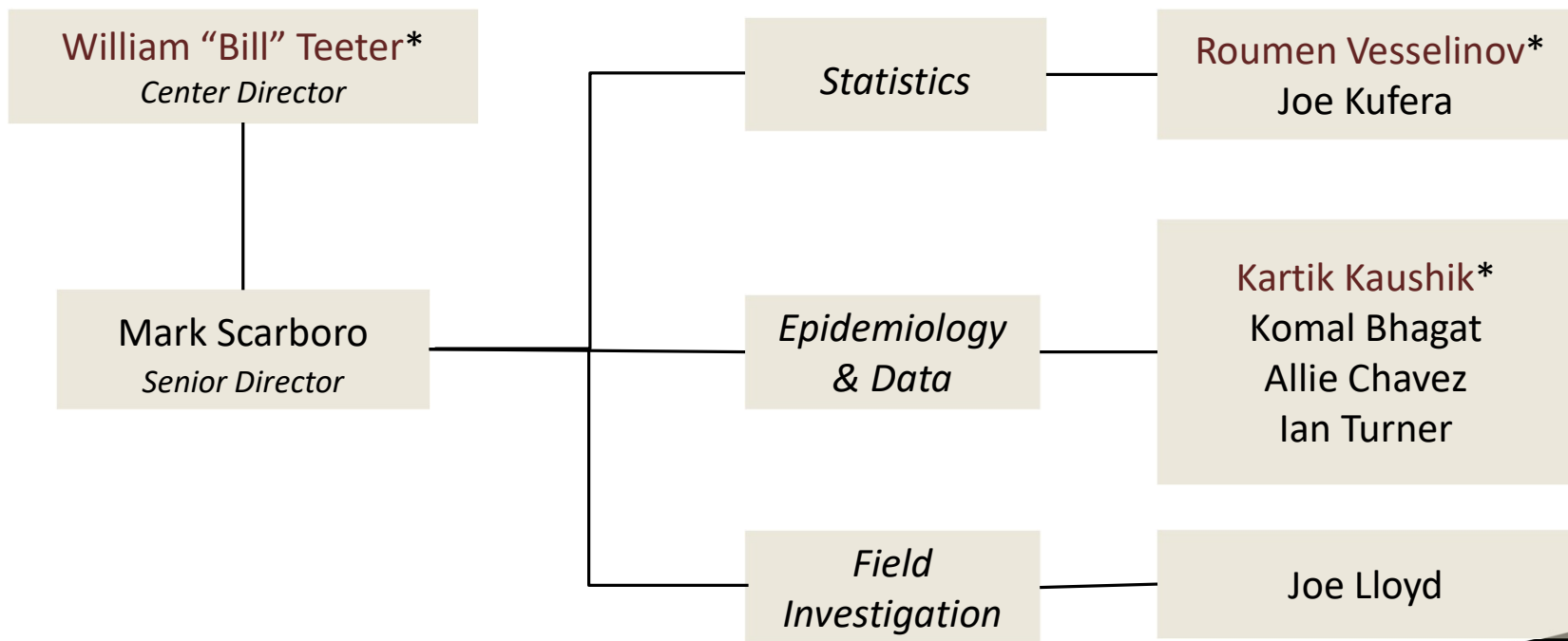
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# Mission Statement

“... to prevent death and disability from injury and sudden illness through interdisciplinary research...”



# NSC Organizational Chart



\*Faculty  
Appointment

## Main Presentation Topics

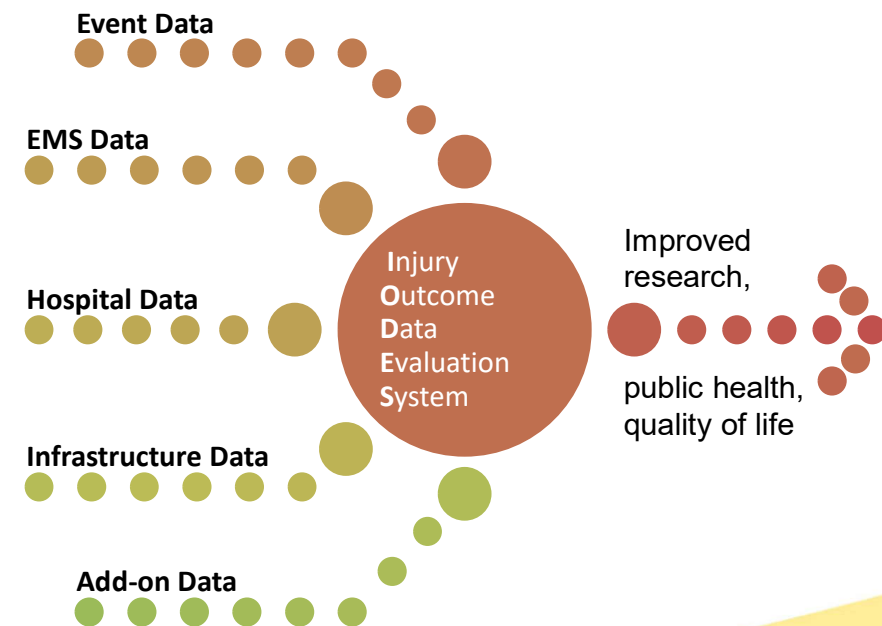
- Collaborations / Publications
- IODES and CISIR
- CIREN
- Maryland Highway Safety Office (MHSO) projects
- Other projects and initiatives

## NSC Collaboration

- Collaboration with STAR and other researchers resulting in 6 peer-refereed papers published in 2023.
  - Multiple papers evaluating clinical outcomes
- MIEMSS Research Interest Group (RIG)
  - Epinephrine and Cardiac Arrests in Maryland (manuscript draft)
- Drug Recognition Expert data linked with citation data
  - Accepted for Transportation Research Board Annual Meeting 2024

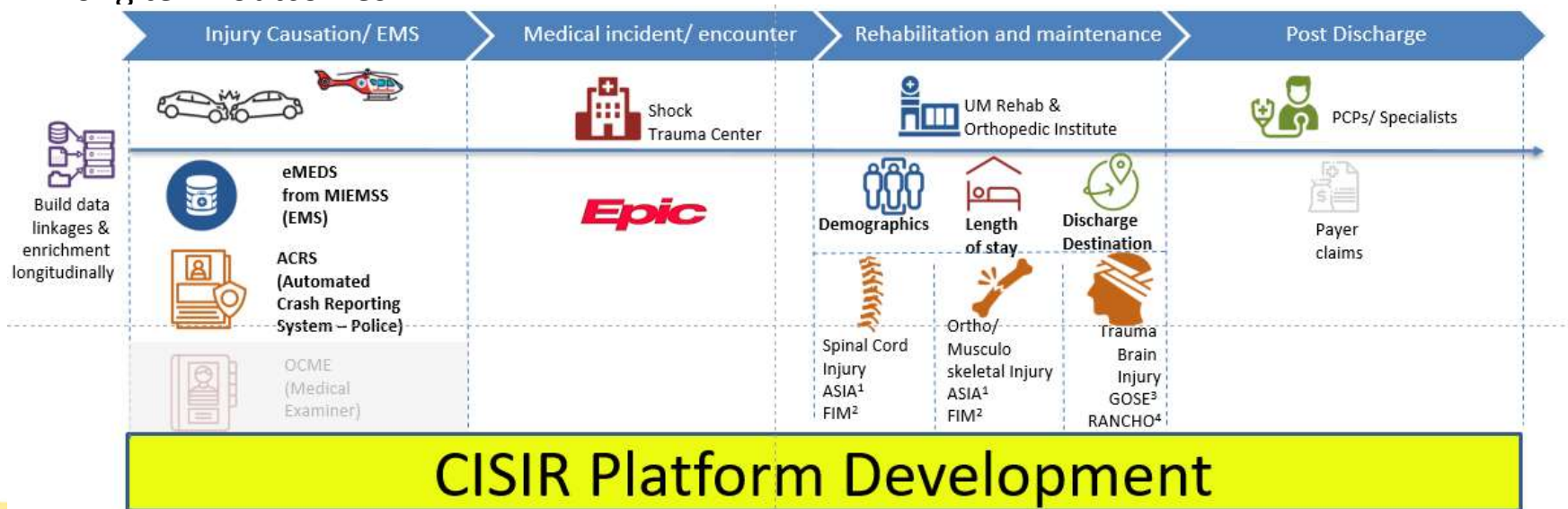
# Injury Outcomes Data Evaluation System

- Integration of multiple datasets
  - EMEDS forms the keystone between event and hospital data
  - Infrastructure and built environment at injury location
- IODES maintains data in structured database
  - Mineable data, integrated together
- Data continuum
  - Patient history, through event, hospital stay, and beyond hospital discharge



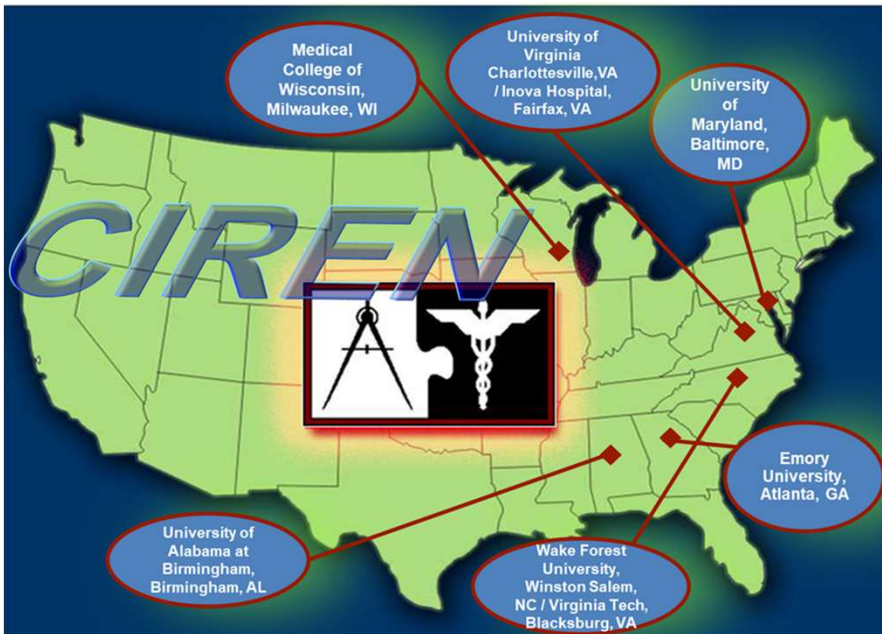
# Center for Innovation in Clinical and Translational Shock and Injury Research (CISIR)

- All Trauma Continuum of Care
  - Hospital based data mining application
  - Event to final outcome: time of injury thru long term outcomes
- New capabilities include –
  - Increased search categories (admit labs, established cohort upload)
  - New extracts including all trauma scores



## Crash Injury Research and Engineering Network (CIREN; PI: Dr. Deb Stein)

- NHTSA funded
  - 5 year contract awarded - \$2.6M
- Cost of injury project awarded above and beyond current funding (\$87K)
  - Final report due late 2024
- Case production 2023:
  - 134 case occupants consented
  - 23 currently enrolled
- Pedestrian cases = slow enrollment
  - Drivers unwilling to consent
  - ME case backlog
  - LEL turnover and DCIR case access
- Continued focus on serious injury resulting from late model passenger vehicle crashes





# Maryland Highway Safety Office Projects

- Traffic Records project – CODES project, data management
  - Completion of data requests/reports for government and public sources via public Internet portal
  - Renewed interest in seatbelt use and race from EMEDS secondary to increasing transportation fatalities and 1906 funding lines
- 2023 Maryland seatbelt compliance report to NHTSA
  - 2023 rate = 92.1%
- FY24 MHSO funding of approx. \$450K.

# Transportation Health Initiative

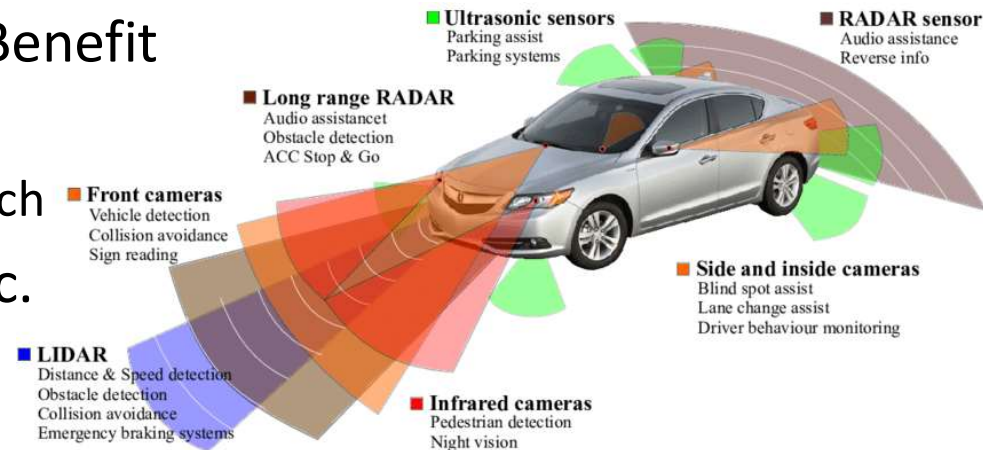
- Collaborations with UMD College Park resumed after organizational restructuring of Maryland Transportation Institute
- Collaborated on multiple outgoing proposals totaling about \$2M
  - Active Transportation Safety and Equity Issues
  - Work zone Speeding Issues
  - Other projects related to impaired driving, enforcement, and traffic safety
- Working on new topics of interest
  - Effects of infrastructure on injury severities (presented at TRB this year)
  - Effects of land use on crash and injury rates and severities (new research)

# Vulnerable Road User Crash Investigations

- VRU are defined as people outside the vehicle: pedestrians, bicyclists, etc.
- Increase in VRU injuries and fatalities nationally and in MD continues
- Near-real-time data collection and investigation of vulnerable road user crashes
- CIREN funded: Crash kinematics of VRU/occupant injuries
- Multiple diverse proposals submitted
  - Room to improve ADAS systems, esp. detection technology
  - Transportation behavioral analysis
  - Race and ethnicity impact in transportation safety

# Advanced Driver Assistance Systems (ADAS) Initiatives

- These technologies have real-world implications
  - Next best technology since seatbelts and airbags
- How effectively do they work? Cost/Benefit
  - Benefit of reducing adverse outcomes
  - Cost of implementing and purchasing tech
- Require policies to guide, set bars, etc.
  - What is the minimum viable product?
  - Subsidies, rebates, rewards?
- Use IODES to locate crashes of interest ASAP



# Thank You