Experimental and Mathematical Biomechanics Injury Research

ACTIVE

Contract Opportunity

Notice ID

693JJ920R000023

Related Notice

Department/Ind. Agency

TRANSPORTATION, DEPARTMENT OF

Sub-tier

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Office

693JJ9 NHTSA OFFICE OF ACQUISTION

General Information

- **Contract Opportunity Type:** Presolicitation (Original)
- **All Dates/Times are:** (UTC-04:00) EASTERN STANDARD TIME, NEW YORK, USA
- **Original Published Date:** May 20, 2020 09:32 am EDT
- **Original Response Date:** Jun 03, 2020 03:00 pm EDT
- **Inactive Policy:** 15 days after response date
- **Original Inactive Date:** Jun 18, 2020
- **Initiative:**
    - None

Classification

- **Original Set Aside:**
- **Product Service Code:** B599 - SPECIAL STUDIES/ANALYSIS- OTHER
- **NAICS Code:** 541 - Professional, Scientific, and Technical Services
- **Place of Performance:**

USA

Description

The research objectives described in the Statement of Work will expand NHTSA’s and the public’s understanding of human injury biomechanics and tolerance, performance of anthropomorphic test devices (ATDs) and computational ATD and human models, and

human response to crash loading using a combination of experimental, computational, and analytical methods. The data generated in these studies will provide the impact biomechanics and automobile safety community with response requirements and design parameters for the development of advanced ATDs and models, injury criteria, and restraint system performance requirements. Results of work conducted under this contract will facilitate the reduction of automobile crash injuries and fatalities.
The work requirements performed under this IDIQ Contract will be divided into the following five research Domains:

1. Conduct Experimental Biomechanics evaluations to determine human response and injury tolerance to the types of loading experienced in motor vehicle crashes. The objective is to measure the response of the human body to representative loading and observe how, and at what level of loading, injuries occur.

2. Provide technical ATD Technical Support for development and evaluation of ATDs used to evaluate vehicle and restraint system performance. The objective is to tailor ATD design for maximum biofidelity and measurement capability while ensuring acceptable durability, usability, repeatability, and reproducibility.

3. Conduct Computational Biomechanics studies using human and ATD models as a complement to and substitute for experimental investigations. Computational models facilitate complex biomechanical investigations in an economical manner. The objective is to further improve available computational models and use them to inform the evaluation of human response and restraint system performance.

4. Conduct Field Data Analysis of real-world crash and injury data to explore emerging trends and identify frequent injury causation scenarios. The objective is to inform the direction of ongoing and future research efforts.

5. Experimental and Computational Data Analysis designed to review and analyze data that supports development of injury criteria, injury risk curves, and performance specifications for use with ATDs and computational models in evaluating vehicle and restraint system performance. The objective is to collectively assess available data and existing studies and produce performance criteria relevant to various test surrogates.

Attachments/Links

Download All Attachments/Links
Attachments

Document	File Size	Access	Updated Date
Synopsis_20-R-000023_Biomechanics Injury Research_toPost.pdf	160 KB	Controlled	May 20, 2020

Contact Information

Contracting Office Address

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History

- **May 20, 2020 09:32 am EDT**Presolicitation (Original)