

Standard Electronic External Review Form for Division of Safety Research Intramural Projects

A. IDENTIFICATION

Name of Project Officer : Jinhua Guan
Title of Proposed Project: NIOSH Pilot Study of Truck Driver Anthropometric and Workspace Dimensions
Name of Reviewer:
Telephone Number of Reviewer:
Fax Number of Reviewer:
E-mail address of Reviewer:

B. CRITIQUE

1. Significance:

Does this study address an important problem in occupational safety? If the aims of the project are achieved, will scientific knowledge be advanced? Is the effect or impact of this study likely to reduce worker injuries?

It is hard to imagine a project more relevant to the safe design of heavy truck vehicles than the proposed large scale study submitted for approval (2007 funding). Since this pilot study is necessary to validate the planned equipment and procedures, it is equally significant.

Currently the best available anthropometric and workspace related data is over 20 years old and has significant limitations. The SAE / Saunders study was a relatively small sample size and based on what are now obsolete demographics.

2. Approach:

Are the scientific framework, design (including the composition of the study population), methods, and analyses adequately developed, well integrated, and appropriate to the aims of the project? Does the project officer acknowledge potential methodological limitations?

The proposed framework of this study is technically sound and will result in the desired outcome if the test subjects are professional and experienced heavy truck drivers. It is important to do everything possible to get (and keep) the subject drivers in the truck driving mindset. Drivers sit differently when driving heavy trucks than when driving passenger cars or light trucks. Ideally the drivers will be as close to possible in time after driving a heavy truck for an extended time and that the workspace buck has as many visual cues as possible to trigger the truck driving mindset when responding to questions and positioning options.

3. Innovation:

Where needed, does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?

The use of the 3-D Body Scanner in addition to the traditional anthropometric measurement techniques will advance the state-of-the-art and provide powerful new tools to the cab and driver interface design process.

4. Project Officer (Investigator):

Is the project officer appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the project officer and other researchers (if any)? For new or less experienced NIOSH staff, note if the level of supervision appears adequate.

Dr. Jinhua Guan is extremely capable and well qualified to lead this project.

5. Environment:

Does the scientific environment in which the work will be done contribute to the probability of success? Does the proposed experiment(s) take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Please do not include a description of available facilities or equipment unless important to the evaluation of merit.

I have not reviewed the work space buck yet so it is difficult to completely answer this question at this point in time but the descriptions of the anthropometric measurement area of the trailer and the work space buck certainly appear to be conducive to a successful project.

6. Overall Evaluation:

In **one paragraph**, summarize the most important points of the Critique, suggesting ways to improve any weaknesses of the proposed study.

Individuals who are knowledgeable of the urgent need for this study were very excited to learn of the NIOSH proposal in 2004 and were extremely disappointed to learn the funding had not been approved. It is important for this project to get approved and started as soon as possible since the results will not be available for four years and the real benefits to safer vehicle design will not begin until then.

C. OTHER CONSIDERATIONS

7. Gender, Minority, and Children Inclusion (As Relevant)

The demographics used in the proposed project are appropriate for the intended and declared results.

8. Human Subjects: Are there any issues regarding the safety or welfare of subjects participating in this study? Note that NIOSH projects involving human subjects must obtain separate and independent review and approval from the NIOSH Human Subjects Review Board.

In my opinion, there are no safety or welfare risks associated with this study.

9. Other (include any other suggestions to improve the proposed research)

Anything that can be done to expedite the approval and execution of this research project would hasten getting the vitally needed results into the hands of the commercial vehicle manufacturers and into the design process of critical components (e.g. mirrors, seats, occupant restraints, etc.)