**MCEER RESEARCH TASK STATEMENT**

<table>
<thead>
<tr>
<th>Thrust Area: Networking</th>
<th>Budget:</th>
<th>Yr 9 Assigned</th>
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<tbody>
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**Project Number:** 9.5.4

**Task Title:** Database for Multiple Hazard Evaluation of a NY State Hospital

**Investigators:** George Lee*, Mai Tong, Jincheng Qi

**Institution:** University at Buffalo

* indicates task leader

**Statement of Project Goals:** (Conceptually describe what the work is intended to accomplish, in 100 words or less. Do not provide detailed description here.)

This is networking sub-task for the TASK: Multiple Hazard Evaluation of Critical Facilities – A case study of a New York State Hospital (submitted separately). In this subtask, a web-based database of NY State Hospital facility system is to be evaluated for a selected multiple hazards (earthquake, blast and fire) for the Users Network of MCEER. The database is intended to include structural, architectural and other non-structural systems (power, water, HVAC, med gas and Fire protection). The work is in continuation of the user network task of New York State Hospital Information System.

**Problem Description and Research Approach of Proposed Work for Year 9:** (Detailed description of research to be conducted and methodology to be used.)

See main task “Multiple hazard evaluation of New York State Hospitals”

The database is to be developed with a graphic-oriented user interface such that query of basic information is to be displayed with relative geometric, physical and logical relation with other relevant components.

**Assessment of State-of-the-Art:** (Describe other relevant work being conducted within and outside of MCEER, and how this project is different.)

See main task “Multiple Hazard Evaluation of NY State Hospitals”

The database to be developed in this subtask is a new product. As far as the investigators know there is no such database available.

**Progress to date:** (If applicable, a short description of achievements in previous years. Clearly distinguish progress achieved in the past year, i.e., accomplishments from April 1, 2004, to March 31, 2005.)

The database has been built with four hospitals from New York State. In 2003, the fourth hospital database has been formed. This example is different from the other three in that it has
been focused on the non-structural components.

The database examples include: FEM (finite element model), drawings, and non-structural systems (power, water, fire protection, partial HVAC and med gas). A seismic retrofit evaluation has been carried out in year 8 and is being added into the database.

**Role of Proposed Task in Support of Strategic Plan:** *(Describe how the effort will make a unique, useable contribution to the MCEER strategic plan.)*

See main task “Multiple Hazard Evaluation of New York State Hospitals”

**Task Integration:** *(Describe how the work performed interfaces with other tasks and researchers funded by MCEER.)*

See main task “Multiple Hazard Evaluation of NY State Hospitals”

**Possible Technical Challenges:**

See main task “Multiple Hazard Evaluation of NY State Hospitals”

<table>
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<tr>
<th>Anticipated Outcomes and deliverables: (Also indicate those of particular benefit to IAB members and other end users.)</th>
<th>Potential end-users beyond academic community: (IAB members and others.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The web-based database to be available for all MCEER user network</td>
<td>Potential end-users include: Hospital facility management, hazard and risk analysis specialists, planners and architects and structural engineers.</td>
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</table>

**Educational outcomes and deliverables, and intended audience:**

See main task “Evaluation of NY State Hospitals”

**Project Schedule and Expected Milestones for the Project:** *(Milestones and estimated time of achievement; e.g. Fall, Spring, Summer.)*

**Team Members:** *(If known, provide names of team members associated with project including project leader, other faculty and their departments, undergraduate students, graduate students, postdoctoral students, industrial participants.)*

George Lee (project leader)
Mai Tong (senior research scientist)
Jincheng Qi (research scientist)

**Possible Direction of Work in Subsequent Years:**

We will continue to explore other hazards such as wind, floor, major interruption of essential utility supply.