



<b>UTC Project Information</b>	
Project Title	A DATA-DRIVEN COMPUTATIONAL FRAMEWORK FOR RAPID POST-EVENT DAMAGE ASSESSMENT OF BRIDGE INFRASTRUCTURE ASSETS
University	University of Nevada Reno
Principal Investigator	Floriana Petrone
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Funding Source(s) and Amounts Provided (by each agency or organization)	ABC-UTC funds: \$104,750 Match funds : \$52,375
Total Project Cost	\$ 157,125
Agency ID or Contract Number	69A3552348322
Start and End Dates	January 2, 2024 - December 31, 2024
Brief Description of Research Project	<p>Increasing awareness of severe community disruption and long-term economic impacts following major disruptive events have led to a shift in the infrastructure performance objectives, from ensuring life safety to achieving continuous safe occupancy and continuity of critical functions. From this perspective, the ability to rapidly assess the spatial distribution and severity of bridge network damage in a post-disaster environment has become a key requirement, and yet remains a challenge.</p> <p>Understanding that 150 million people in the United States are exposed to the risk of a damaging earthquake within 50 years has prompted the Federal Emergency Management Agency (FEMA) and the National Institute of Standards and Technology (NIST) to advance the technical and social discussion to support communities' resilience goals by improving recovery time for different performance levels, as documented in the 2021 NIST-FEMA special publication (Sattar, 2021).</p> <p>This research will develop a novel and integrative computational framework that will enhance the capability of the bridge engineering community to effectively respond in a post-earthquake emergency. The core idea is to use machine learning (ML) techniques for predicting the performance of highway bridges subject to multi-directional near and far-field earthquake ground motions.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here</p>	<p>The outcomes will be tracked and reported once they are identified.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The impacts will be tracked and reported once they are identified.</p>
<p>Web Links</p> <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<p><a href="https://abc-utc.fiu.edu/research-projects/a-data-driven-computational-framework-for-rapid-post-eventdamage-assessment-of-bridge-infrastructure-assets/">https://abc-utc.fiu.edu/research-projects/a-data-driven-computational-framework-for-rapid-post-eventdamage-assessment-of-bridge-infrastructure-assets/</a></p>