This technology modifies a traditional balance perturbation system and method currently used in fall prevention research. The modification allows experimenters to create environments that are truly unpredictable for the subjects and forces subjects to inhibit natural reactions to balance perturbations.

**PROBLEM**
The research protocols currently in use in the study of falls emphasize only reflexive reactions. However, requiring the inhibition of these reflexive reactions accentuates cognitive demands and would thus allow researchers to study brain function at a higher level.

**SOLUTION**
The technology modifies a traditional balance perturbation system by forcing subjects to revise their instinctive behavior under time pressure. This increases the level of brain activity involved in avoiding a fall.

**BENEFITS**
This technology facilitates the study of higher brain function during the avoidance of falls and imitates the complexity of real-life environments.

**APPLICATIONS**
This technology's improvement to the process of studying cognitive processes during fall avoidance will be particularly applicable for researching balance and fall prevention.