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Student Spotlight

The Student Spotlight is a new column developed to introduce our many student researchers and to highlight their current research work. We plan to feature brief profiles on one or two students in each issue.

Keith Kesner is a Ph.D. candidate at Cornell University, and is currently involved in a project entitled “Development of Engineered Cementitious Composite Materials for Seismic Strengthening and Retrofit.” Dr. Sarah Billington is his advisor, and his expected graduation date is May 2002. The project is directed towards the development of cementitious composite materials that exhibit a “pseudo strain hardening” response in tension. It is believed that these materials have excellent potential for seismic strengthening and rehabilitation applications. Development of these materials will require laboratory testing to establish fundamental behavior characteristics, and additional testing to verify the performance of components made with the composite materials. Concurrent with the laboratory testing, material models will be developed to allow for finite element based simulations of the material performance in structural models.

According to Keith, “This research represents a transition in the field of structural engineering from the use of traditional materials such as reinforced concrete and steel to materials with engineered performance characteristics. This is one of the many facets of the project that is exciting to me.”

This project fits well into MCEER’s mission to develop new and emerging materials that have potential for use in seismic rehabilitation of structures. These newer materials may possess significant advantages over conventional civil engineering materials such as reinforced concrete and steel.

In the future, Keith plans to continue research in the areas of material development with specific applications towards strengthening and rehabilitation of structures. Additionally, he would like the opportunity to teach at the university level. ❖



■ Keith Kesner works on part of an exhibit on earthquake engineering that will be displayed in the Ithaca Science Center.