

Energy and Resources Group Spring 2008 Colloquium Series (ER295)

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**Learning from Extreme Events: Risk
Perceptions after the Flood**

110 Barrows Hall / 4:00 p.m.

The occurrence of an extreme event can be a source of new information about the frequency or magnitude of disasters. This talk examines whether a severe flood – here, the 1993 flood on the Missouri and Mississippi Rivers – caused homeowners to update their assessment of flood risk as seen in a change in the price discount associated with floodplain properties. The talk investigates how this information effect varied spatially and temporally. Hedonic regressions with data on single-family, residential property sales in St. Louis County, Missouri are first used to estimate the pre-flood discount for floodplain properties. Prior to the 1993 flood, residential properties in 100-year floodplains were discounted between 3.2% and 4.5% relative to non-floodplain properties. There was no significant discount associated with 500-year floodplain properties. A property fixed effects model and a difference-in-differences approach are then employed to estimate how this price differential changed following the 1993 flood. There was no significant response of 100-year floodplain property prices to the flood, but property prices for 500-year floodplains declined by about 3%. Therefore, where homeowners had knowledge of the flood risk, little updating occurred post-flood. In areas where there was no previous capitalization of flood risk into prices, however, the updating was significant. Post-flood declines in prices diminish over time. Further spatial heterogeneity in the information effect of the flood is uncovered by dividing the data into two groups: municipalities located on the Missouri or Mississippi Rivers where damage was substantial and municipalities located in the interior of the county where there was minimal damage. For municipalities on the river, all properties – in and out of the floodplain – declined post-flood by 6% to 10% compared to property in municipalities in the interior of the county. This suggests that owners of non-floodplain land still faced flood-related costs and/or entire communities were stigmatized post-flood.