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## WEEKLY CALENDAR

March 1, 2010

### Departmental Colloquium

**"Demystifying the Strange Metal in Cuprate Superconductors: Composite Excitations"**

3:40 PM, March 4, 2010  
109 Nicholson Hall

Philip Phillips  
University of Illinois

**Host: Juana Moreno and Mark Jarrell**

**• Refreshments served at 3:15 PM in 232 (Library) Nicholson Hall •**

Although the pairing mechanism in the high-temperature copper-oxide superconductors remains elusive, equally puzzling are the bizarre properties of the normal state. For example, in most metals the resistivity scales as the second power of the temperature. However, in the copper-oxide superconductors, a strange metal regime exists in which the resistivity scales linearly with temperature. I will show how composite excitations emerge as the propagating degrees of freedom in the normal state and how their breakup mediates T-linear resistivity. Recent experimental support for this picture will be presented..

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#### Publications:

"Perturbed disks get shocked: Binary black hole merger effects on accretion disks," **Miguel Megevand, Matthew Anderson Juhan Frank**, Eric W. Hirschmann, Luis Lehner, Steven L. Liebling, Patrick M. Motl and David Neilsen, Physical Review D 80, 024012 (2009).