

# PHYSICS DEPARTMENT COLLOQUIUM

## “Hottest-matter-ever since Big Bang”

BY

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A microsecond after the Big Bang, the Universe was so hot and dense that matter could exist only in its very elemental form -- quarks and gluons. Since the year 2000, the Relativistic Heavy Ion Collider (RHIC) located at Brookhaven National Lab has been smashing two gold nuclei at a highly relativistic speed in an effort to re-create on Earth this primordial state of matter (dubbed quark-gluon plasma or QGP). By now, we have accumulated ample evidence that we have indeed created this new state of matter by achieving temperatures exceeding two trillion Kelvin and densities exceeding what can be only found at the center of a neutron star. In this talk, I will summarize what was expected, what is seen (with many surprises) and where we are going in near future at the LHC from a personal point of view of a theorist.

THURSDAY, FEBRUARY 12, 2009  
4:00 PM IN 102 JFB  
REFRESHMENTS AT 3:30 PM IN 219 JFB