



# PHYSICS & ASTRONOMY WEEKLY CALENDAR

TEL: 225-578-2261  
FAX: 225-578-5855  
<http://www.phys.lsu.edu>

202 NICHOLSON HALL  
Louisiana State University  
Baton Rouge, Louisiana 70803-4001

## WEEKLY CALENDAR

October 25, 2010

### Special University Wide Lecture

3:00 PM, Tuesday, October 26, 2010  
130 Nicholson Hall

**"It's a Material World"**

*Ramamoorthy Ramesh*  
*University of California-Berkeley*

*Host: Office of Research & Economic Development and LSU Physics & Astronomy*

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### Departmental Colloquium

3:40 PM, Thursday, October 28, 2010  
109 Nicholson Hall

**"Quantum Gravity and Cosmology"**

*Martin Bojowald*  
*Pennsylvania State University*

*Host: Jorge Pullin*

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

A combination of quantum mechanics with relativity is required to understand and probe the microscopic structure of space-time. Most such quantum theories of gravity lead to structures different from the continuum picture provided by general relativity, with implications for the big bang, the expansion of the whole universe, or for light propagation from distant sources. Loop quantum gravity is one of the candidates which are providing details about potential cosmological effects that can be used to construct scenarios of structure formation and to test the theory. After an introduction to general aspects of this framework, recent results and characteristic phenomena will be discussed to show that observability at least in principle can be reached in the near future.

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### Saturday Science at LSU

October 30, 2010

10:00 A.M.

130 Nicholson Hall, LSU

James Cowan  
Center for Energy Studies

**"The Mississippi River coastal ecosystem: effects on fish and fisheries  
(Is the Sportsman's Paradise Lost?)"**



Ramamoorthy Ramesh

# Nanotechnology Colloquium by **Ramamoorthy Ramesh**

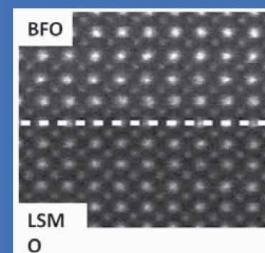
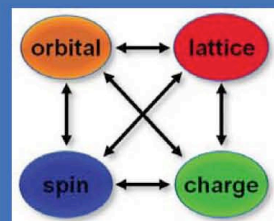
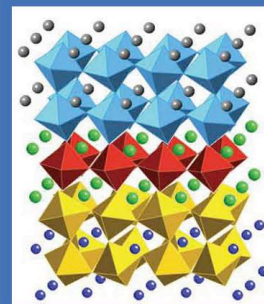
Plato Malozemoff Chair  
Professor Materials Science/Physics  
University of California, Berkeley

Tuesday, October 26, 2010  
3:00 PM ~ 130 Nicholson Hall

## It's a Material World

The world around us is filled with a plethora of materials, natural and man-made. Through the advances made in the design, synthesis, and theoretical frameworks, it is now possible to design materials at almost the atomic scale.

In this talk, I will use Complex Oxides as an illustrative system to explore the interplay between atomic structure and functional responses. Such materials are particularly interesting since they bring to bear the charge, spin, orbital, and lattice degrees of freedom to reveal a rich diversity of physical phenomena, such as high temperature superconductivity, colossal magnetoresistance, and multiferroicity.



Office of Research & Economic Development

130 David Boyd Hall ~ 225-578-5833 ~ [www.research.lsu.edu](http://www.research.lsu.edu)