

◆ University of Washington ◆ Department of Physics ◆

# seminars



May 2-6, 2005

Monday, May 2, 2005

**PHYSICS COLLOQUIUM**, partially funded by the GSFEI

**Steve Lamoreaux, Los Alamos National Lab**

*"The Oklo Prehistoric Natural Reactor and the Time Variability of the Fundamental Constants of Nature"*

4:00 PM, Ronald Geballe Auditorium, A-102, PAA

Reception at 3:45 PM in the lobby

**Abstract:** Two billion years ago, a uranium deposit in Oklo, Gabon, Africa achieved criticality and a nuclear chain reaction was sustained in the deposit for about 100,000 years. Such a reactor was possible because the relative isotopic abundance of U-235 was much greater in the past. By analyzing the isotopic abundances of stable fission products in the deposit, it is possible to determine whether low energy neutron absorption resonance energies were different in the past, and thereby determine whether the fundamental constants of physics have changed. The most precise recent analysis of isotopic abundances implies that the fine structure constant has fractionally changed by 45 parts per billion, with six sigma confidence. An overview of our ongoing laboratory efforts to detect a variation in the fine structure constant by use of precision spectroscopy will also be presented.

Tuesday, May 3, 2005

**Condensed Matter Seminar**

4:00PM, Rm. C-421, PAT  
*metals*

Boris Spivak, UW Physics

*"Magnetic field dependence of the nonlinear I-V characteristics of mesoscopic and propagation of nonlinear waves in disordered samples"*

Thursday, May 5, 2005

**Astronomy Colloquium**

4:00 PM, Rm. A-102, PAA

Reception at 3:45 PM in the lobby

Keith Holsapple, U.W. Aero & Astro

*"Asteroid Spin Data: No Evidence of Rubble-Pile Structures"*

Friday, May 6, 2005

**Particle Astrophysics Seminar**

3:30 PM, Rm. A-110, PAA

Prof. Toby Burnett, UW Physics

TBA