

UNIVERSITY OF TEXAS AT DALLAS - DEPARTMENT OF PHYSICS
PHYSICS COLLOQUIUM

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Tuesday, November 16, 2004; Kusch Auditorium, FN 2.102
Networking 3:30-4:00 PM; Presentation 4:00-5:00 PM

**Nature's Surprises: What Are the Latest High
Energy Physics Data Telling Us?**

Professor XinChou Lou
Department of Physics, UTD

The discovery which is awarded this year's Nobel Prize in Physics is of decisive importance for our understanding of how the theory of one of Nature's fundamental forces works, the strong force that ties together the smallest pieces of matter - the quarks which are the building blocks of the most mass visible to us. Mysteriously the strong force seems to only bind a quark and an anti-quark or three quarks to form visible states that are referred to as meson, or baryon, respectively. Relentless experimental efforts have been made to search for other forms of matter. The tantalizing results from the latest high energy physics experiments will be presented.

About the speaker: XinChou Lou received his PhD in Physics from SUNY at Albany and is currently a head of the UTD Department of Physics. He specializes in heavy flavor physics at e^+e^- colliders, high performance computing (HPC) and Monte Carlo simulation. His current focus is on the *BABAR* experiment at the Stanford Linear Accelerator Center. He has special interests in new analysis techniques and underexplored physics. He is studying the double $c\bar{c}$ events, a rare interaction recently discovered, using the *BABAR* data. His direct observation of initial state radiation ψ signal was among the first physics results from the *BABAR* experiment and was reported at major High Energy Physics conferences in fall, 2000. During 1998 – 2000 he was the US physics analysis coordinator of the BES international experiment studying the tau and charm physics. He has designed, built and upgraded high performance computing systems at UTD for *BABAR* research. The current HPC system is rated at 0.5 TeraFlop and is the fastest system on campus.