Felix Klein Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: **Santosh Kandel**
University of Notre Dame

Thursday, November 7, 2013
2:00 pm
Room: 258 Hurley Hall

Title: Construction of a Functorial QFT in Riemannian setting

Abstract:
A d-dimensional Riemannian Functorial Quantum Field Theory E associates to a closed oriented Riemannian manifold Y of dimension $d-1$ a Hilbert space $E(Y)$ and to a bordism Σ from Y_1 to Y_2(which is a compact oriented Riemannian manifold with boundary $Y_2 \sqcup \bar{Y}_1$) a Hilbert-Schmidt operator $E(Y_1) \to E(Y_2)$ so that gluing bordisms corresponds to composing the associated operators. If we forget the Riemannian structure on the $Y's$ and on the bordisms there are many examples of such theories which are known as Topological Quantum Field Theories. In 2007, Douglas Pickrell constructed a family of examples of 2-dimensional Riemannian Functorial Quantum Field Theories. In this talk, we construct an example when d is even.