Felix Klein Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: **Matthew Stenzel**
Ohio State University

Thursday, March 19, 2015
2:00 pm
Room: 125 Hayes Healy Hall

Title: The Poisson transform on a compact, real analytic Riemannian manifold

Abstract:
B. Hall's generalized Segal-Bargmann transform on a compact Lie group is a unitary map of $L^2(K)$ onto a positively weighted Hilbert space of holomorphic functions on the complexification of K constructed via the analytic continuation of the heat kernel, $e^{-t\Delta}$. Serious difficulties occur when one tries to extend this result to other types of manifolds: for example, the image of the complexified heat operator may be difficult describe, and the resulting Hilbert space of holomorphic functions may no longer be a weighted Hilbert space. In this talk we will explain how these difficulties can be circumvented and a more or less parallel theory be developed for any compact, real analytic Riemannian manifold by replacing the heat kernel with the "Poisson" kernel, $e^{-t\sqrt{\Delta}}$.