

# COLLOQUIUM

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*University of Notre Dame*  
*Department of Mathematics*

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Will give a lecture entitled  
**Ambient metrics and exceptional holonomy**

On

Wednesday, March 2, 2011

at 4:15 PM in Room 117 Hayes-Healy Hall

## **Abstract:**

The holonomy of a pseudo-Riemannian metric is a subgroup of the orthogonal group which measures the structure preserved by parallel translation. Construction of pseudo-Riemannian metrics whose holonomy is an exceptional Lie group has been of great interest in recent years. This talk will outline a construction of an infinite-dimensional family of metrics in dimension 7 whose holonomy is the split real form of the exceptional group  $G_2$ . The datum for the construction is a generic real-analytic 2-plane field on a manifold of dimension 5; the metric in dimension 7 arises as the ambient metric of a conformal structure on the 5-manifold defined by Nurowski in terms of the 2-plane field. This is work with Travis Willse.