

# BI-CO MATHEMATICS COLLOQUIUM

**Amanda French**

Haverford College

*“Resonance and the Null Condition  
for Nonlinear Wave Equations”*

**Monday, September 21, 2015**

Talk at 4:00 – Park 338  
Tea at 3:30 – Park 355, Math Lounge

**Abstract:**

In this talk we will discuss a class of quasilinear wave equations  $\square u = F(u, u', u'')$  whose special structure ensures the existence of a globally defined solution given sufficiently small initial data. We will explore classical PDE methods used to address this question, including energy and Sobolev estimates, and also a new approach involving a “change of variables” via a special transformation.

**BRYN MAWR COLLEGE**