

# TEMPLE UNIVERSITY

Department of Mathematics

## Analysis Seminar

Room 617 Wachman Hall

Monday, February 16, 2014, 2:40 p.m.

*Fredholm theory for higher order elliptic boundary  
value problems in non-smooth domains*

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One of the most effective methods for solving boundary value problems for basic elliptic equations of Mathematical Physics in a given domain is the method of layer potentials. Its essence is to reduce the entire problem to an integral equation on the boundary of the domain which is then solved using Fredholm theory. Until now, this approach has been primarily used in connection with second order operators for which a sophisticated, far-reaching theory exists. This stands in sharp contrast with the case of higher order operators (arising for instance in plate elasticity) for which very little is known in this regard. In this talk I will survey recent results aimed at extending the method of singular integral operators (of layer potential type) to the higher order setting.