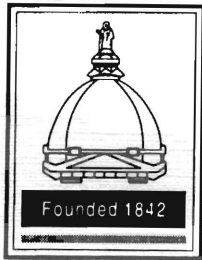


# AEROSPACE & MECHANICAL ENGINEERING



## 2009 COLLOQUIUM 2010 SEMINARS ARE OPEN TO THE PUBLIC

INFORMAL COFFEE PERIOD BEFORE THE SEMINAR IN ROOM 365, ENGR. BLDG.  
UNIVERSITY OF NOTRE DAME, NOTRE DAME, INDIANA 46556

### *MIDWEST MECHANICS SEMINAR*

**SPEAKER:** **Professor David J. Steigmann**  
Department of Mechanical Engineering  
University of California at Berkeley  
Berkeley, California

**TOPIC:** **BOUNDARY-VALUE PROBLEMS  
IN THE THEORY OF LIPID MEMBRANES**

**DATE:** Tuesday, March 2, 2010

**TIME:** 3:30 p.m.

**PLACE:** 138 DeBartolo Hall

#### *ABSTRACT*

The mechanics of lipid bilayers is discussed in the context of the theory of elastic shells with fluid symmetry. New contact conditions are developed for lipid membranes interacting with curved substrates along their edges. These include the anchoring conditions familiar from liquid-crystal theory and accommodate non-uniform membranes and non-uniform adhesion between a bulk fluid or membrane and a rigid substrate. The theory is illustrated through explicit solutions and numerical simulations.

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**NOTE:** *If you are interested in meeting individually with  
Prof. Steigmann, please contact Evelyn at 631-5431.*