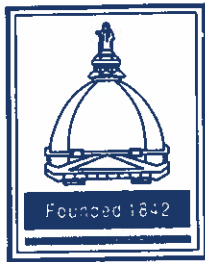


AEROSPACE & MECHANICAL ENGINEERING



**2011 COLLOQUIUM 2012
SEMINARS ARE OPEN TO THE PUBLIC**

**INFORMAL COFFEE PERIOD BEFORE THE SEMINAR IN ROOM 365 FITZPATRICK HALL
UNIVERSITY OF NOTRE DAME, NOTRE DAME, INDIANA 46556**

SPEAKER: Clifford M. Les, DVM, PhD
Head, Anatomy Section
Bone and Joint Center, Department of Orthopaedics
Henry Ford Health System
Detroit, Michigan

TOPIC: **WOLFF'S PRETTY GOOD GUESS: IS STIFFNESS
THE DESIGN OBJECTIVE? ANATOMIC VARIATION
IN BONE MATERIAL VISCOELASTIC PROPERTIES,
PRE-STRESS, AND COLLAGEN-I D-SPACING
WITH ESTROGEN DEPLETION**

DATE: Tuesday, September 6, 2011

TIME: 3:30 p.m.

PLACE: 138 DeBartolo Hall

ABSTRACT

For well over a century, the general interpretation of Julius Wolff's Law, that bone models and remodels in response to the existing mechanical milieu to produce the stiffest possible structure at the lowest feasible mass, has been of great use in both clinical and basic orthopaedic research. Recent evidence, including analysis of the geometric structure of long bones as well as of the patterns of material heterogeneity within the bone, suggest a more complex situation, in which the predictability of bending patterns under a variety of loading conditions may also play a role in the development and maintenance of the structure. The loss of bone responsiveness to load with estrogen depletion, with concomitant non-Haversian changes in bone Collagen I D-spacing, pres-stress, and viscoelastic properties, may lend intriguing insights into the mechanisms behind these patterns.

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