UAH
Mathematical Sciences

Dr. Karen A. Ames Lecture Series on Applied Mathematics

Dr. Suncica Canic

Cullen Distinguished Professor
Department of Mathematics
Director
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University of Houston

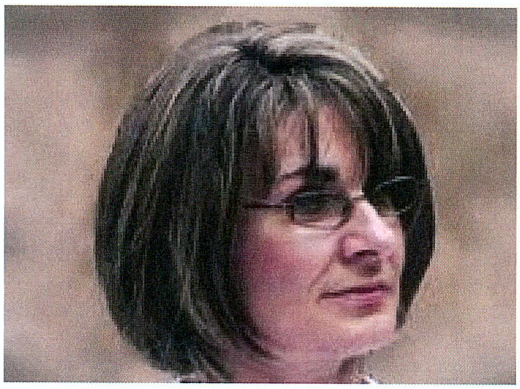
Things That We Can Learn about the Cardiovascular System by Using Math

DATE: **March 18, 2016**

TIME: **3:00 p.m.**

LOCATION: **SC Room 218**

The cardiovascular system has the task of supplying the human organs with blood. Recent advances in imaging, 3D printing technology, and biomedical engineering have elevated our understanding of the cardiovascular physiology and pathophysiology to the unprecedented levels. Mathematical modeling and scientific computation can, however, provide information about biological systems such as the cardiovascular system that is not obtainable by any other means. In this talk we will present an overview of the current approaches to the modeling of the heart, the vascular system, and certain cardiovascular procedures, such as coronary angioplasty with stenting. Movies showing computer simulations will be presented, and the information that can be deduced from those simulations will be discussed. An actual bio-artificial stented heart valve, and a 3D printed patient-specific left ventricular output tract of the human heart will be shown to the audience. The research of the speaker is performed in collaboration with mathematicians, biomedical engineers, and medical specialists at the Texas Medical Center in Houston.



Dr. Suncica (Sunny) Canic is Cullen Distinguished Professor at the University of Houston, and is the only woman to hold a prestigious Cullen Distinguished Professorship position at the University of Houston. She earned her Ph.D. in 1992 in the area of nonlinear hyperbolic conservation laws from the Department of Applied Mathematics and Statistics at SUNY Stony Brook. Upon her move to the University of Houston in 1999, Dr. Canic began collaborating with several medical specialists at the Texas Medical Center in Houston on problems related to cardiovascular treatment and diagnosis. Her research received local and national media attention, and was featured in several publications by NSF, NIH, and AMS.

Dr. Canic was honored for her research by the National Science Foundation as Distinguished MPS Lecturer in 2007, received the US Congressional Recognition for Top Women in Technology in 2006, and was invited to present a Congressional Briefing on Applied Mathematics, on Capitol Hill on December 6, 2011. She serves on the Board of Governors of the Institute for Mathematics and its Applications in Minneapolis, and was the Program Director of the SIAM Activity Group on Partial Differential Equations. Dr. Canic was elected Fellow of the Society for Industrial and Applied Mathematics (SIAM) in 2014.

Refreshments will be served at 2:30 p.m.