FMU Math Club presents:

# Mathematics in Industry Speaker Series
# Lecture and Q&A Dinner

with Dr. Ali Uzun speaking on

## Application of Applied Mathematics to the Numerical Solution of Fluid Dynamics Problems in Engineering

**Thursday, October 3, 2019**

**Lecture – LSF407, 2:30 - 3:30PM**

**Dinner – 6:00 - 7:00PM (RSVP)**

**Abstract:** This talk will present the application of applied mathematics to the computational solution of fluid dynamics problems of practical engineering interest. We will first provide an overview of the partial differential equations governing the motion of fluids and present the numerical discretization of the governing equations for the computations. We will then demonstrate the practical application of the computational methods to several problems, all of which involve complex physical phenomena such as turbulence, shocks and massive flow separation. We will also discuss the various issues and challenges encountered in the simulation of complex fluid dynamics problems. Comparisons with the available experimental measurements will be made to assess the predictive capability of the simulations.

**Dr. Ali Uzun** is currently a Senior Research Scientist at the National Institute of Aerospace in Hampton, Virginia. He received his Ph.D. in Aeronautics & Astronautics from Purdue University in 2003. He joined the Florida State University as a post-doctoral research associate immediately after completing his Ph.D. and later became a Research Scientist at the Florida Center for Advanced Aero-Propulsion, Florida State University. He joined the National Institute of Aerospace in July 2015 to conduct research supported by the NASA Langley Research Center. His current research interests include computational fluid dynamics using high-order numerical methods, turbulence simulations and parallel computing.

**All students, faculty and staff are invited to attend the talk.**
**Please RSVP by Sept. 30th with Dr. Ivan Dungan to join the Q&A Dinner via ivan.dungan@fmarion.edu.**

---

**Funding provided by the FMU PEAK grant.**