



Department of Engineering
Seminar Program
Wednesday, November 12, 2014
Shanahan Teaching and Learning Center
Lecture Hall 1430, 4:10pm

High Performance Trebuchet (Catapult) Development
Leonard Vance
Senior Engineering Fellow at Raytheon Missile Systems

Summary:

The application of modern materials, mathematics and simulation to the ancient art of gravity powered catapults has touched off a creative surge in which backyard engineers can still contribute significantly to the rapidly expanding state-of-the-art. This talk explores the path of analysis, innovation, experimentation and development which led the author from what he thought would be an easy 2-week school project, to a ten-year trek to set the world's record, currently in excess of 2800ft. As an analog for real world experience, this project provides unclassified, non-proprietary insight into the process of human innovation, whose common aspects this author has observed several times over his 30 years of experience in the Aerospace industry.

Bio:

Leonard Vance is a senior engineering fellow at Raytheon Missile Systems, headquartered in Tucson Arizona. Following graduation with both a Bachelor's of Science and Masters of Engineering from Harvey Mudd College, Leonard joined Hughes Aircraft Company in 1983 and helped lead the initial development of the nation's ballistic missile defense as the Systems Engineering lead for the original LEAP kinetic kill vehicle. He followed this with eight years capturing and developing the AIM-9X Sidewinder missile before returning to ballistic missile defense as Chief Engineer of the Kinetic Energy Interceptor program. He is currently the acting Chief Engineer for Space Applications at Raytheon Missile Systems and Principal Investigator for the DARPA SeeMe program, developing inexpensive, nanosatellites for tactical applications.

Leonard serves as a member of the RMS patent review committee, holding several patents personally. Outside of work, he is a longtime volunteer coach for the Mathematics, Engineering, Science Achievement (MESA) organization and has led student teams to 4 national championships. He enjoys hydrofoil sailing, hiking and occasionally developing high performance trebuchets.

After the seminar there will be an informal dinner and conversation with the speaker in the Mitchell Room at Hoch-Shanahan Dining Hall. If you are not on the meal plan, we will have a signup sheet. If you are interested in attending, please RSVP with Sydney Torrey at storrey@hmc.edu.