Armenian Engineers and Scientists of America
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117 S. Louise Street, Suite 306, Glendale, CA 91205

# Drones – How they work and their future

by

Wilhelm Cashen, Chairman of Tesla Foundation Group
and
Naira Hovakimyan, Ph.D., Professor, University of Illinois Urbana/Champaign

**Thursday, April 28, 2016, 7:30 pm**

**PARSONS**

100 W. Walnut Street, Pasadena, CA 91124

The presentation will give a historical overview of flight control technology from its inception till its maturation. Parallel developments in aerial robotics will be reviewed from the perspective of aerospace industry standards, prioritizing safety, resilience and reliability of operations. Special focus will be placed on cooperative control of UAVs for various mission scenarios in military operations. Flight tests of a subscale commercial jet at NASA and Learjet at Edwards Air Force base will be used to demonstrate the efficiency of the methods developed over the past ten years. Lessons learned will be summarized, and the opportunities in public safety, elderly care, package delivery, precision farming and digital agriculture will be discussed.

## Speakers

Mr. Cashen founded in the 1980s a successful automation software and hardware engineering company in Detroit that helped to further revolutionize the auto industry's automation complex improving product quality and production capacity. The goal of the company was to localize computing power moving the auto industry from fluid actuation to electromechanical automation systems.

In 2009 Mr. Cashen designed and built the first all-electric F150 pickup truck thus creating a sustainable model for light load electric transportation. This design typology is slated for production early in the next decade. A passion for Nikola Tesla, Cashen developed a sustainable autonomous transportation model that will revitalize America's small business sector. His model will deliver strong economic performance driven by the integration of human capital and the aviation sciences.

Recently, Mr. Cashen's unique inspiration to create such a corridor for sustainable transportation manned and unmanned systems, resulted in the Co-Founding of the Tesla Foundation Group. His commitment to the success of building a new American transportation system is the product of a greater process to aid people to seize their ideas and innovations, creating new products and services to grow and protect American jobs.

Naira Hovakimyan graduated with MS degree in Theoretical Mechanics and Applied Mathematics from Yerevan State University in Armenia. She got her Ph.D. in Physics and Mathematics, in Moscow, from the Institute of Applied Mathematics, majoring in optimal control and differential games.

Before joining the faculty of UIUC in 2008, she was a research scientist at Stuttgart University in Germany, at INRIA in France, at Georgia Institute of Technology, and she was on faculty of Aerospace and Ocean engineering of Virginia Tech. She is currently W. Grafton and Lillian B. Wilkins Professor of Mechanical Science and Engineering at UIUC. In 2015 she was named as inaugural director for Intelligent Robotics Lab of CSL at UIUC. She has co-authored a book and more than 300 peer reviewed publications. She is the recipient of the several awards for her work and publications.

Naira is co-founder of IntelinAir, Inc., a company that commercializes data-drones for delivering actionable information from aerial imagery for various industries. Her research interests are in the theory of robust adaptive control and estimation, control in the presence of limited information, networks of autonomous systems, game theory and applications of those in safety-critical systems.

*Space is limited. Please RSVP by e-mail to* - Areg.gharabegian@parsons.com

**The lecture is free and open to the public with validated parking**

We appreciate your attendance, participation, and interest in AESA activities

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