

## CSE Comings and Goings

The CSE welcomes **Dr. Perouz Taslakian** and **Mr. Raffi Kassarian**. Dr. Taslakian joins CSE after completing a post-doctoral research in computational geometry at Université Libre de Bruxelles, Belgium. She has her doctoral degree from McGill University in Montreal, Canada after having studied at Concordia University in Montreal and Haigazian University in Beirut. In addition to her ERC research activities, Dr. Taslakian has been appointed as AUA's Director of Admissions, Recruitment, and International Student Affairs. Mr. Kassarian, developed and taught a cutting-edge course at the College on the role of IT in business today, "Enabling Competitive Advantage through IT." Mr. Kassarian has worked for two decades in the US and in Armenia as a technology industry executive in Management consulting, telecomm, and banking, and currently holds an executive position at Converse Bank in Yerevan.

We wish the best to **Dr. Lilit Mazmalyan**, a long-standing and much-loved researcher and instructor at the College. A prolific researcher, Dr. Mazmalyan's work, often in collaboration with Dr. Dan Trietsche, has focused on operations and logistics analysis and management. For several years, she's taught many courses and advised IESM students on their thesis projects. Dr. Mazmalyan is pursuing a PhD at Santa Clara University in the San Francisco Bay area in Mechanical Engineering.



In Memory of Mr. Harmon Hubbard  
We express our condolences on the occasion of the passing of Mr. Harmon Hubbard, a generous supporter of the College of Engineering through student scholarships.

## News and Updates

**CoE Renamed, We Are Now CSE:** Starting in July 2012, the AUA College of Engineering (CoE) is called the College of Science and Engineering (CSE). The newly named CSE will house the existing Masters programs in Computer and Information Sciences (CIS) and Industrial Engineering & Systems Management (IESM). In addition, starting in Fall 2013, it will house the new undergraduate program in Computational Sciences (CS). **Dr. Aram Hajian**, has been appointed the Dean of the College of Sciences and Engineering. [Click here for more ...](#)

**Three International Summer Interns at CSE:** This summer, CSE is hosting 5 international interns. **Mr. Araz Boghossian** (Toronto, Canada), sponsored by [Birthright Armenia](#) and [Armenian Volunteers Corps](#), is working on solar projects at AUA. **Ms. Taylor Phillips** (Los Angeles, CA) and **Mr. Beno Balian** (Aleppo, Syria), both [AGBU Summer Interns](#), will work on operations research and computer aided design/manufacturing, respectively.

**Sixteenth International Working Conference on Reliability and Optimization of Structural Systems held at CSE:** More than 40 scientists from around the world attended the 16th in a series of working conferences on structural systems. The conference, organized this year at the American University of Armenia under the leadership of founding College of Engineering Dean Dr. Armen Der Kiureghian, promotes modern structural system reliability and optimization theories and methods. It aims to stimulate research, disseminate and exchange information, and encourage education in this field. Two years ago the Conference was held at the Technical University of Munich, Germany. [Click here for more ...](#)

**The College Partners with the United Nations University to Test Urban Biodiversity Guidelines:** AUA has partnered with the United Nations University's Institute of Advanced Studies (UNU-IAS) to test guidelines designed to preserve and restore biodiversity in urban areas. AUA will conduct this test through a month-long Summer course in Yerevan. [Click here for more ...](#)

**Solar Architecture Course Co-organized by the College, AUA Extension, and UNDP:** The College in cooperation with organizing summer intensive professional development course for architects and engineers on integrating active and passive solar solutions in building design. [Click here for more ...](#)

### EVENTS:

-- Institute of Mathematics of the National Academy of Sciences in association with Yerevan State University and American University of Armenia is organizing an international conference in [STOCHASTIC AND PDE METHODS IN FINANCIAL MATHEMATICS](#) in September 7 - 12, 2012.

### **CYBER SECURITY: Security of Samsung Corporation Video Devices Developed at ERC**

An ERC team is about to complete security solutions for Samsung Corporation of South Korea. The Principle Investigator (PI), Dr. Gurgen Khachatryan, is developing an algorithm to be used in many Samsung video devices to protect against hacker attempts to place viruses and other unauthorized information onto devices and remain undetected. The project is developing a fast and secure integrity checking solution. Dr. Khachatryan's research team includes Melsik Kuregian (senior researcher), Sergey Abrahamyan (research associate), Aram Jivanyan (research associate), Sergey Sargsyan (research associate, CIS '12), and Hovag Abramian (research associate, CIS '13).

In photo: From left Melsik Kuregian, Karen Ispiryan, Hovak Abrahamyan, Gurgen Khachatryan, Sergey Sargsyan, Aram Jivanyan, Sergey Abrahamyan, Knarik Kuregian, Gayane Hambarzumyan, Hovik Khasikyan.



### **CRYPTOGRAPHY: Verium—CIS students develop product safety solution**

Counterfeiting drugs, medical products, food, alcohol and the like is a global problem. A group of AUA CIS students are developing an authentication and verification system called Verium that uses cryptographic solutions to combat counterfeiting and identity theft. The system consists of a pair of public and secret key assigned to a product. A centralized system deployed in the computing cloud environment is used to authenticate products. The Verium system enables direct communication between consumers and manufacturers. Along with authentication of products, the system can also offer useful information about expiration dates, batch numbers, and so on. The team is currently piloting their system with a major food and beverage manufacturer in Armenia. For demonstration of the product, its features and applications contact Gurgen Hakobyan (CIS '12) at hakobyan@me.com.

In photo: From left Ara Yeressian, Sergey Sargsyan, Gurgen Hakobyan and Nanar Chahverdian. The students are all in their second year of the CIS Master's program.

### **RENEWABLE ENERGY: Faculty research in energy efficiency and solar systems supports two student thesis projects**

Dr. Artak Hambarian's research in collaboration with ITC in hybrid solar collector-PV-gas heating system (see CoE Newsletter Winter 2012 for details) has led to a thesis project completed by **Razmik Martirosyan (IESM '12)**. Martirosyan's thesis develops a mathematical model to optimize hybrid solar water heating systems. This optimization model yields interesting results: **seasons have small impact on the storage size, the system overall requires small auxiliary gas heater, a small energy storage that substantially decreases the installation cost, etc.**

Dr. Hambarian has also worked on designing small-sized air-to-air heat exchangers (small-sized AAHE) for use in Armenian homes. Such a product, currently unavailable in the market, can be used in retrofitting or construction of rooms. The small-sized AAHE will bring in fresh air without significant loss of indoor temperature. With this, households can significantly save in energy costs related to heating and cooling of their homes. **Lusine Hovsepyan (IESM '12)** conducted her thesis research on consumer expectations and demand for such a product. She also calculated the financial returns to households.

### **TECH TRANSFER AND RESEARCH COMMERCIALIZATION: U.S. Dept. of Commerce Organized Conference**

CSE faculty members, **Dr. Aram Hajian**, **Mr. Alen Amirkhanian**, and **Dr. Artak Hambarian** participated in a two-day workshop organized by the U.S. Department of Commerce's Commercial Law Development Program. The workshop, called "Innovation and Technology Transfer" was held in Yerevan, April 30-May 1. It brought together more than 25 experts from academia, industry, and government to discuss commercialization of academic research. American experts, **Mr. Steve Price** (Oklahoma State University) and **Dr. Jerry Schaufeld** (Worcester Polytechnic Institute) presented on their work and experience in commercializing university research. A two-week tour of the US is organized for July. **Mr. Vache Kirakosyan**, Advisor to AUA President Dr. Bruce Boghosian, will be joining the Armenian delegation on behalf of AUA.).

### **PUBLICATIONS AND SCHOLARSHIP:**

CSE (formerly CoE) researchers, **Dr. Artak Hambarian** and former VP of Research at AUA, **Dr. Ken Touryan**, present their work on renewable energy in Armenia at the World Renewable Energy Forum in Denver, Colorado in May 2012. The article they presented has appeared in the WREF Proceedings and can be downloaded here. They also published the part of their report on small hydro power plants (SHPP).

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**ROLLING APPLICATIONS FOR CSE: The AUA College of Science and Engineering (CSE) is accepting applications on a rolling basis. If you want to get your Master's degree in Computer Science or Industrial Engineering at AUA, apply now!! For details visit our website <http://coe.aua.am> For questions call 010-51-26-40**



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