

Analysis Research & Planning for Armenia

ARPA Institute,
NEWSLETTER

December 2013, Vol. 20

Address: 18106 Miranda St., Tarzana, CA 91356

ԱՐՓԱ ՀԻՄՆԱՐԿ
ԼՐԱԲԵՐ

Դեկտեմբեր 2013, Թ 20

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Merry Christmas
& Happy New Year

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Նորարարութիւն, Գիտարարութիւն եւ Տնտեսական Զարգացում Հայաստանի Համար

Յ. Փանոսեանի Խոսքը ՀԳԾՀ-ի 80 Ամեակի Հանդիսութեան Առթիւ, Երեւան

Շատեր կը հաւատան որ գիտութիւնը անհրաժեշտ է նորարարութեան եւ գիտարարութեան համար, իսկ նորարարութիւնն ու գիտարարութիւնը անհրաժեշտ են արտադրութեան համար: Ըհիշո՛ւ, սակայն տասնամեակներ պէտք են մինչեւ գիտութեան բերած նպաստին արգասիքը երեւնան: Տնտեսական զարգացման ամենակարեւոր ազդակները գործարանային արտադրութեան զարգացումն ու ընդարձակումն են, որոնց հետ զուգահեռ երկրագործութեան զարկ տալը:

Սակայն եւ այնպէս, միայն գիտութեան զարգացմամբ եւ նորարարութեամբ կարելի չէ տնտեսական աճ արձանագրել: Շատ լաւ օրինակներ կան Ռուսական իրականութեան մէջ: 1954-ին Nikolai Basov եւ Alexander Prokhorov ստեղծեցին լազերային ճառագայթները: Սակայն այդպէս ալ կարելի չեղաւ Ռուսիոյ մէջ այդ գիտը վերածել նորարարութեան եւ արտադրանքի: Ուրիշ խոսքով, գիտեր հնարելը բաւարար չէ տնտեսական զարգացման համար: Պէտք է պատրաստել ստեղծագործ մարդիկ, entrepreneur անձեր որոնք գիտը կրնան վերածել արտադրանքի եւ շուկայական մրցունակ յաջողութեան: Այլ խոսքով, պէտք է յաղթահարել գիտութեան եւ նորարարութեան միջեւ կանգնած պատուարը, այլ ոչ թէ հետազոտութիւնն ու նորարարութիւնը անջատել համալսարաններէն եւ արտադրական համակարգէն: Գիտ մը նորարարական միջոցներով պէտք է այնպիսի արտադրանքի վերածել որ օգտակարութիւն եւ օգնութիւն բերեն ժողովուրդին: Միայն թուային տեխնոլոգիաներով կարելի չէ երկրի մը տնտեսութիւնը զարգացնել:

Տեխնոլոգիա հասկացողութիւնը այն մոտեցումներու եւ գործելակերպերու ուսումնասիրութիւնն է որոնցմով լաւագոյնս կարելի է կառուցանել-սարքել եւ կամ ստեղծել բաներ, իսկ գիտութիւնը այն մասնագիտականօրէն կատարուած փորձն է հասկնալու եւ բացատրելու ամէն ինչ աշխարհի վրայ: Տեխնոլոգիան մարդկութեան չափի հին է, իսկ գիտութիւնը կազմաւորուեցաւ մարդկային քաղաքակրթութեան հետ միասին: Երկարամեայ տնտեսական զարգացում կարելի է ստանալ միայն զարգացնելով եւ ընդարձակելով տեխնոլոգիաներու գիտութիւնը - անոնց ծանօթացումը եւ օգտագործումը:

Հետեւեալներն են պայմանները նորարարութեան մթնոլորտի ստեղծման եւ քաջալերման համար՝ ճիշդ կրթութիւն, տեղեկատուութիւն եւ գիտութեան փոխանցում, մտածուած կառավարման օրէնքներով եւ մոտեցումներով, տուրքերու հարմարութիւններով, ճարտարարուեստի-ինտուստրիալ, տեխնոլոգիական եւ հետազոտութիւններու-նորարարութիւններու լաւ ինֆրակառուցուածք, աշխատող մտային գոյքի համակարգով, ճանաչման եւ պարգեւատրման յատուկ միջոցներով, ճիշդ մշակոյթի որդեգրման, վերապատրաստուած եւ մասնագիտացուած աշխատակազմի եւ մանաւանդ ճիշդ գործի մթնոլորտով որը կը քաջալերէ ստեղծագործութիւնը եւ ենթերկրներուական ոգին: Անշուշտ այս բոլորի

իրագործման կարեւոր պայմաններէն մէկն է ֆինանսական ռեսուրսներն ու զումարները:

Հստակ է որ ստեղծագործ մարդիկ իրենց երբեմն արտաբոցութիւններով կը դժուարացնեն հարցերը, մանաւանդ պատասխանատուներուն հետ կապուած: Այդ պատճառով այնպիսի մոտեցումներ եւ գործելակերպեր պէտք է որդեգրել որ կը նպաստէ վերոյիշեալ պայմաններու ստեղծման: Օրինակ՝ օգնել, խոչնդոտելու փոխարէն, ընկերութիւններուն եւ ենթերկրներուն ազատութիւն փորձարկելու եւ ապահովցնել ստեղծագործներուն եւ նորարարներուն նշանակալի առաւելութիւններ եւ պարգէներ: Նաեւ ցոյց տալ դրական կեցուածք նոյնիսկ ձախողութիւններու եւ ռիսկերու պարագային: Ամենակարեւորը, քաջալերել ստեղծագործներուն եւ նորարարներուն գործակցութիւնը ենթերկրներուն հետ որպէսզի միասնաբար ստեղծեն նոր արտադրանքներ եւ ապրանքներ, որոնց միջոցով տնտեսական առաւելութիւն կարելի է ստանալ: Հայաստան հարուստ է նորարարներով եւ ստեղծագործ անձերով, որոնք սակայն ժառանգած են որոշ մոտեցումներ եւ գործելակերպեր եւ ատոնք շատ հաճախ արգելք կը հանդիսանան յառաջդիմութեան: Ուստի, պէտք է փոխել հինգած մոտեցումները, գործելակերպերն ու մտածելակերպերը: Պէտք է վերապատրաստել եւ դաստիարակել գիտական եւ տեխնոլոգիական գործերու մէջ աշխատող բոլոր անձերը, զարգացնելով անոնց մէջ գիտարարարութիւն եւ նորարարութեան նոր մոտեցումներն ու բարբերը: Այն կարծիքը որ գաղափար մը թուղթի վրայ դնելով եւ տեսական փաստարկներ կատարելով կստացուի նորարարութիւն պէտք է հիմնահատակ փոխուի: Գիտ մը կրնայ շատ լաւ ըլլալ, սակայն եթէ չփորձարկուի բազում անգամներ եւ փաստուի որ այն կաշխատի եւ կը կատարէ այն բոլորը որոնց համար ստեղծուած է, եւ թէ իր նմաններէն տարբեր է իր առաւելութիւններով, գիտ չի համարուիր:

Ինչ՞ են մարտահրաւերները քսան մէկերորդ դարու նոր սերունդին, որոնք պէտք է պատրաստել դիմակայելու զանոնք: Ապագայի ամենահրատապ հարցերէն մէկն է ուժանիւթի (էներգիայի) արտադրութեան նոր ձեւեր ստեղծելը: Երկրորդը, երկրին ստացուածքներն ու ստորգետնեայ հարստութիւնները իմաստութեամբ եւ ծրագրուած ձեւով օգտագործելն է: Երրորդը, ոչ պակաս կարեւոր՝ ուսեստեղենի եւ ջուրի ճիշտ կերպով մատակարարումն է: Աղբի եւ թափոններու կազմակերպումը եւս կարեւոր խնդիրներէն մէկն է: Սակայն եւ այնպէս, ամենակարեւոր խնդիրը դրուած մեր առջեւ նոր սերունդի ապագայի համար պատրաստումն ու կրթելն է: Եկող տասնամեակներուն, բժշկութիւնն ու բժշկագիտութիւնը այնպիսի նոր ուղղութիւններով պիտի զարգանայ որ այժմ անբուժելի նկատուած հիւանդութիւններ պիտի կենտրոնայի եւ կենսաբանական տեխնոլոգիաներու օգտագործումով բուժելի ըլլան: Դարձեալ կարեւոր բնագաւարներէն է կապի եւ յարաբերութեան նորանոր զարգացումները, որոնք նոր մոտեցումներու առիթ պիտի տան եւ նոր գործիքներու եւ գիտատեխնոլոգիական առաւելութիւններ պիտի ընծայեն մարդկութեան: Ռոպոտներու եւ ինքնաւար աշխատող գործիքներու եւ մեքենաներու, ինչպէս նաեւ օդային

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պարիկներու նորանոր յառաջդիմութիւնները, միկրոէլեգրոնային գործիքներու եւ սարքերու օր ըստ օրէն զարգացումն ու բերած նպաստները պիտի նոր կեանքի եւ ապրելակերպի ձեւեր եւ մոտեցումներ ստեղծեն, որոնց համար պէտք է նոր սերունդը պատրաստ ըլլայ եւ մասնակից դառնայ այդ բոլոր նորարարութիւններուն եւ գիտատեխնոլոգեական տուեալներուն: Տակաւին շատ մը ուրիշ կարելոր մարտահրաւերներ կան եկող սերունդներուն համար, ինչպիսիք են՝ երթելեկութեան, երկրի ճիշդ ուղղութեամբ

զարգացման, անցեալի պատմութեան եւ յուշարձաններու պահպանութեան, գիտութեան հեռաւար ուսուցման միջոցներու, բնակարանային, օդերեւաբանական, եւ այլն:

Վերոյիշեալ մարտահրաւերներուն պատրաստ սերունդ ունենալու համար ինչ է դերը համալսարաններուն, կառավարութեան եւ ժողովուրդին: Արդե՞ք ՅՅ բուհերը պատրաստ են դիմագրաւելու ապագայի մարտահրաւերները եւ պէտք եղած գիտութիւնն ու փորձարական տուեալները փոխանցելու նոր սերունդին:

ARPA Institute is now accepting applications for the 2014 Invention Competition

Please visit http://www.arpainstitute.org/Invention_Competition.html for details

ԱՐՓԱ Ինստիտուտը այժմ կ'ընդունի նորարարութեան յայտեր 2014 տարուան համար: Հանեցեք այցելել մեր կայքէջը. http://www.arpainstitute.org/Invention_Competition.html

ԱՐՓԱ Հիմնարկի նորարարության մրցույթ 2013 մասնակիցների ցանկ

«Տիտանի փրփուրի ստացումն այրման ռեժիմում օքսիդային հումքից» **Երկրորդ Տեղ**
Վիրակոյան Հասմիկ, Բաղդասարյան Անի
Ղեկավար՝ Սոֆիյա Այդինյան

«Հետերոանցումային ջերմաֆոտովոլտային տարրեր» **Երկրորդ Տեղ**
Զադոյան Օվսաննա
Ղեկավար՝ Գագիկ Ծմալոնյան

«Հեռակառավարվող հակակարկտային ակուստիկական կայան» **Զորրորդ Տեղ**
Վարդանյան Արման, Այվազյան Կարեն
Ղեկավար՝ Վահե Բունիաթյան

«Ֆերոէլեկտրիկ թաղանթների հիստերեզիսի հետազոտման սարք» **Զորրորդ Տեղ**
Դաշտոյան Հարություն

«Ինկուբացիա դրվող տոմսային ձվերի բեղմնավորվածության որոշումը և ճտահանության բարձացումը կենսատեխնոլոգիական մեթոդով»
Սարգսյան Արմեն, Զիթյան Վանուհի, Ավազյան Աշխեն
Ղեկավար՝ Հարություն Գևորգյան

“Environmental decision support system under ambiguity: irreversible investment and optimal timing”
Գրիգորյան Արման
Ղեկավարներ՝ Էդվարդ Կարսյան

«Վիճակագրական տվյալների մշակումը և կիրառումը ներածություն»
Հարությունյան Նարինե

«Ազատ էլեկտրաէներգիայի ստացման գեներատոր»
Մարկոսյան Վարդան

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Distance Learning Seminars For Armenia

One of the main goals of ARPA Institute is to help the graduate students and faculty members in Armenian universities increase their professional awareness and knowledge through on-line, real-time videoconferencing. The objective of these seminars is the transfer of current technology and information.

To that effect, in 2013 several Distance Learning seminars and lectures were organized with the help of scientists and top engineers residing in the United States. We take this opportunity and thank every one of the lecturers who volunteered and devoted their time and efforts free of charge.

In addition to lectures organized by ARPA, we have broadcast a lecture organized by AUA from Armenia and had audiences in several locations in the Los Angeles area participate on-line in real-time. The topic of this lecture was “Civil Society Development and Environmental Activism in Armenia” presented by Dr. Armine Iskhkanian.

Prof. Zaven Kaprielian: “Axon Guidance at the Midline of the Developing Central Nervous System” YSU; January 18, 2013

Abstract: The central nervous system (CNS) of higher organisms is bilaterally-symmetric. The transfer of information between the two sides of the nervous system occurs through commissures formed by neurons that project axons across the midline to the contralateral side of the CNS. Interestingly, these axons cross the midline only once. Other neurons extend axons that never cross the midline; they project exclusively on their own (ipsilateral) side of the CNS. Thus, the midline is an important choice point for several classes of pathfinding axons. Specialized midline cells play critical roles in regulating the guidance of both crossing and non-crossing axons at the ventral midline of the developing vertebrate spinal cord and the *Drosophila* ventral nerve cord. For example, these cells secrete attractive cues that guide commissural axons over long distances to the midline of the CNS. Furthermore, short-range interactions between guidance cues present on the surfaces of midline cells, and their receptors expressed on the surfaces of pathfinding axons, allow commissural axons to cross the midline only once and prevent ipsilaterally-projecting axons from entering the midline. Remarkably, the molecular composition of commissural axon surfaces is dynamically-altered as they cross the midline. Consequently, commissural axons become responsive to repulsive midline guidance cues that they had previously ignored on the ipsilateral side of the midline. Concomitantly, commissural axons lose responsiveness to attractive guidance cues that had initially

attracted them to the midline. Thus, these exquisitely regulated guidance systems prevent commissural axons from lingering within the confines of the midline and allow them to pioneer an appropriate pathway on the contralateral side of the CNS and project to brain targets. Many aspects of midline guidance are controlled by mechanistically and evolutionarily conserved ligand-receptor systems. Strikingly, recent studies demonstrate that these receptors are modular; the ectodomains determine ligand recognition and the cytoplasmic domains specify the response of an axon to a given guidance cue. Moreover, it appears that at least a subset of receptors for midline repellents can silence the actions of receptors for midline attractants to facilitate the switch in pathfinding behavior exhibited by post-crossing commissural axons. Despite rapid and dramatic progress in elucidating the molecular mechanisms that control midline guidance, many questions remain (adapted from Kaprielian et al., 2001).

Zaven Kaprielian is Professor in the Department of Pathology and Dominick P. Purpura Department of Neuroscience at the Albert Einstein College of Medicine. Previously he was Associate Professor, and before then, Assistant Professor in the Department of Pathology and Dominick P. Purpura Department of Neuroscience both at the Albert Einstein College of Medicine. He has performed his postdoctoral fellowship at the California Institute of Technology, has received his Ph.D. from Johns Hopkins University, and Masters and Bachelors degrees from Boston University.

Prof. Armen Kocharian: “Modeling and Simulations of Many-Body Physics in Nanoclusters and Nanomaterials” SEUA

Abstract: Our studies are focused on the understanding of pairing and magnetism arising from local electron correlations in nano-clusters, assembled clusters of various geometries, nano and hetero-structured materials, atomic scale experiments in inhomogeneous high T_c cuprates, manganites and other concentrated transition metal oxides. This bottom-up approach is motivated by a number of recent advances, both in experiments and theoretical studies of imperfect ceramic cuprates and inhomogeneous nanostructures. Interpretation of many body physics and local density state anomalies in a real space will be given for electron charge and spin pairing instabilities. We review experimental and theoretical descriptions of electron instabilities and inhomogeneities in ensemble of clusters, ultra-small nano-particles, nano-materials and eventually bulk materials, which require modifications or extensions of the standard theories to include the effects of local electron correlations, local geometrical structure and

level discreteness in novel spatially inhomogeneous and non-stoichiometric nano-materials. The theory provides important insights into several many-body problems in condensed-matter physics. At the proximity to the quantum critical points, the lowest energy levels control the physics of spontaneous phase separation instabilities, spatial inhomogeneities, and electron pairing that can be the important steps in deciphering the mystery of high T_c superconductivity in YBCO. The phase separation and electron pairing, monitored by electron doping and magnetic field, surprisingly resemble incoherent electron pairing in the family of doped high T_c cuprates, spontaneous ferromagnetism in magnetites, ferroelectricity in multiferroic materials and ultracold fermionic atoms. The predictions can be exploited in the nanoscience frontier by synthesizing novel nanoclusters or nanomaterials with unique substantially beforehand given properties, which can often provide a solution of many challenging problems in fundamental physics and applied technology. Applications are ranged from molecular electronics and magnetism, optical lattices to development of assembled clusters having applications for design of new materials for superconductor and semiconductor industries.

Armen N. Kocharian received his Solid State Physics diploma (summa cum laude) from Moscow State University and Candidate of Science (Ph.D.) degree in theoretical physics from the Tamms Department of Theoretical Physics in the Lebedev Physics Institute, Moscow, in 1972 and 1977, respectively. Prof. Kocharian earned the D.Sc. degree from Yerevan Physics Institute, Theoretical Division, Yerevan (1991), where he was the Principal investigator of a number of projects funded by ministry of Atomic Energy on applications of synchrotron radiation sources for studies of rare earth materials and transition metal oxides. In 1993 he was invited to teach and work as a Visiting Professor at the Union College, Schenectady, USA. Since 1996 he was working at the department of physics in California State University, Northridge (CSUN) at the W. M. Keck Computational Materials Theory Center on a wide variety of problems in theoretical physics developing analytical and numerical computations techniques to study electronic, magnetic and optical properties of materials with strong electron correlations. Currently, Prof. Kocharian works as a professor at the department of physics in California State University, Los Angeles (CSULA). Prof. Kocharian's teaching responsibilities include major graduate and undergraduate courses on many-body theory, classical and statistical mechanics, mathematical methods in physics, solid state physics, quantum mechanics, modern physics, general physics, etc. His research encompasses critical phenomena in condensed matter, nanomaterials and

nanoscience, such as superconductivity, magnetism, quantum entanglement and phase transitions, statistical theory and information. Among his major current accomplishments in nanoscale science and technology is development of bottom-up approach for studies of electron instabilities in nanoclusters from exact calculations of electron properties in finite size clusters for understanding the role of electron interaction on fundamental microscopic phenomena, such as phase separation instabilities, Bose Einstein condensation, superfluidity, and superconductivity, ferromagnetism in nanomaterials, critical behavior of seismic system and dynamics in ensemble of strong earthquakes, entanglement and phase transitions in nanoscale, accumulation and transmission of the light energy in nonreciprocal multilayer systems, spin-dependent scattering, spin-polarized properties of semiconductors with nano elements in spintronics including heterojunctions and inhomogeneous materials, magnetism in transition metals and compounds. Prof. Kocharian performs collaborative research with the scientists at the center for integrated Nanotechnologies, Los Alamos National Laboratory and Sandia National Laboratories, center for functional nanomaterials, Brookhaven National Laboratory, etc. Prof. Kocharian is an editor and peer reviewer of a number of international journals, and advisory board of member of international conferences. He has published review articles, book chapters and more than 200 papers in peer-reviewed journals and proceedings of international conferences. Prof. Kocharian is a senior member of American Physical Society, a member of New York Academy of Sciences and has received honorary scholar Diploma in Residence award from New York University, a Mayer Foundation award, etc. Prof. Kocharian was elected as a foreign member of National Academy of Sciences in Armenia in 2011. He is a member of Alumni and Friends of Armenian Studies Program at CSUN (2004), and a board member of ARPA Institute. He also contributed to educational and instructional reforms in undergraduate and graduate studies in physics in Armenian universities and colleges by donating contemporary scientific books, instructional materials, and educational publications from personal library to the library of National Academy of Sciences of Armenia and Yerevan State University

Dr. Artin Petrossians: “Electrodeposition of Platinum-Iridium Coatings and Nanowires for Neurostimulating Applications”
SEUA; April 29, 2013.

Abstract: Neurostimulating/recording implantable devices have been extensively used for effective treatment of the functionality of disabled human body organs. All implantable medical devices communicate with nerve cells

of the body called device/tissue interface, where the microelectronics transfer electrical signals to the neurons through microelectrodes. The properties of the interface material are one of the most important parameters to be considered during the design of the device. The talk will focus on a range of investigations and challenges on the development of an efficient and reproducible electrochemical deposition method for fabrication of thin-film platinum-iridium alloys to be used in implantable microelectronics on the device/tissue interface. The developed method for production of dense films was then modified to produce very high surface area coatings with ultra-low electrochemical impedance characteristics. The high-surface area platinum-iridium coating was applied on microelectrode arrays for in-vivo and chronic in-vitro stimulation. Using the same method of producing dense films, platinum-iridium nano-wires were fabricated using Anodized Aluminum Oxide (AAO) templates for hermetic packaging applications to be used in implantable microelectronics. The implantable microelectronics will be used to perform data reception and transmission management, power recovery, digital processing and analog output of stimulus current. Finally, in-vivo electrical stimulation tests were performed on an animal retina using high surface-area platinum-iridium coated single microelectrodes to verify the charge transfer characteristics of the coatings.

Artin Petrossians received his B.S. in Materials Engineering from the Azad University of Najaf Abad, Iran (1998) and his M.S. in Materials Engineering from the California State University, Northridge (2005). After 3 years in industry with Fralock, he returned to school to earn his Ph.D. in Materials Science from the University of Southern California (2012). He joined the department of Ophthalmology at University of Southern California in 2012 as a postdoctoral fellow. Dr. Petrossians' research field has been focused on the optimization of machine/brain interfaces. His current research is directed to electrochemical approaches for surface modification of microelectrodes used in Retinal and/or Neural implants. He is a Member of the IEEE EMBS and the Materials Research Society Engineering Society.

Prof. Gregory Chirikjian: "Stochastic Models in Robotics"

MBI; November 21, 2013

Abstract: Many stochastic problems of interest in engineering involve random rigid-body motions. In this talk, a variety of stochastic phenomena that evolve on the group of rigid-body motions will be discussed. These include mobile robot path planning, and robot-arm inverse kinematics. These topics lead to our current work on multi-robot team diagnosis and repair, information fusion, and

self-replicating robots. Videos of the latter robots developed by undergraduate student researchers and high school students during summer internships will be shown. These toy models in turn have led us to a deep mathematical investigation. Namely, in order to quantify the robustness of such robots, measures of the degree of environmental uncertainty that they can handle need to be computed. The entropy of the set of all possible arrangements (or configurations) of spare parts in the environment is such a measure, and has led us to study problems at the foundations of statistical mechanics and information theory.

Gregory S. Chirikjian received his undergraduate degree from Johns Hopkins University in 1988, and his Ph.D. from the California Institute of Technology in 1992. Since 1992, he has been on the faculty of the Department of Mechanical Engineering, Johns Hopkins University, where he has been a full professor since 2001. During 2004-2007 he served as Department Chair. His research interests include robotics, applications of group theory in a variety of engineering disciplines, and the mechanics of biological macromolecules. He is a 1993 National Science Foundation Young Investigator, a 1994 Presidential Faculty Fellow, and a 1996 recipient of the ASME Pi Tau Sigma Gold Medal. In 2008 he became a Fellow of the ASME, and in 2010 he became a Fellow of the IEEE. He is the author of more than 200 journal and conference papers and primary author on three books: Engineering Applications of Non-commutative Harmonic Analysis (2001) and Stochastic Models, Information Theory, and Lie Groups, Vols. 1+2. (2009, 2011).

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ARPA Institute Lecture Series During 2013

“Armenia in International and Armenian Old Maps, Its geography And Cartography” by R. Galichian

Abstract: This talk showed how, during the past 2,600 years Greco-Roman, Islamic and Western geographers, historians and cartographers saw and wrote about Armenia and how they depicted the country in their maps. The story was told with maps made by the Greek, Islamic and European cartographers. These maps form part of the World geographic and cartographic heritage, the



originals of which are kept in various well-known libraries and museums, such as the Library of Congress, the British Library, National Library of France, Municipal Library of Berlin, and libraries of Bologna, Istanbul, Yerevan and many others. The maps come to prove that, in the territory of the South Caucasus and the Middle East, there are only two countries, Armenia and Iran that could claim an existence of over 2,000 years and how our neighboring countries, such as Turkey and Georgia became to be known as they are now, only after some 2,000 years. It also confirms that the country known as the Republic of Azerbaijan, north of the Arax River was born only in 1918, copying its name from the Iranian north-western Province of Azerbaijan, south of the river Arax. The Armenian language maps of 14-18th centuries will also be discussed.

Rouben Galichian (Galchian) was born in Tabriz, Iran, to an Armenian family who had fled Van in 1915 to escape the Genocide. They arrived in Iran via Armenia, Georgia and France. Rouben attended school in Tehran and then received a scholarship to study in the UK. He received his degree in Electronics Engineering with honors, from the University of Aston, Birmingham, in 1963. Rouben's interest in geography and cartography peaked in the 1970s. In 1981 he moved to London with his family, where he had access to a huge variety of cartographic material. His first book entitled “Historic Maps of Armenia: The Cartographic Heritage” (I. B Tauris, London & NY, 2004) contained a collection of world maps and maps of Armenia over a period of 2600 years, as created by various mapmakers. It became a bestseller in its kind. The following year, an expanded version of the book (in English, Russian and Armenian) was published in Armenia (Printinfo Art Books, 2005). His third book, “Countries South of the Caucasus in Medieval Maps: Armenia, Georgia and Azerbaijan” (Gomidas Institute, London, 2007), provides more detailed cartographical and geographical information of this area. His fourth book,

“The Invention of History: Azerbaijan, Armenia, and the Showcasing of Imaginations” (Gomidas Institute-London and Printinfo Art Books-Yerevan, April 2009), documents the native Armenian pedigree in Nagorno-Karabagh through the centuries as opposed to the Azerbaijani claims. His latest book is entitled “Clash of the Histories in the South Caucasus. Redrawing the map of Armenia, Azerbaijan and Iran”, where the Azerbaijani falsifications, their reasoning and methods used are discussed, and 44 old and medieval maps from all over the world are analyzed, proving the truth about the present-day Azerbaijani falsified historiography (Bennett & Bloom, London, 2012). All the books are available through Amazon.com and other sources. For his charitable work done in Vanadzor, Armenia, Rouben was presented with the “Freedom of the city of Vanadzor” awarded in 2006. For his services to Armenian historical cartography Rouben was awarded an Honorary Doctorate by the National Academy of Sciences of Armenia in November of 2008. In 2009 he was the recipient of “Vazgen I” cultural achievements medal. He is married with a son and grandchildren and shares his time between London and Yerevan.

“The Splendor of Artsakh, its History, People and Landscape” by G. Danilova

Abstract: In this lecture presented was a brief overview of the history of Artsakh, pictures showing the living conditions and life in major cities and villages today, an intimate discussion of the struggle that people go through every day and the progress made during the last 20 years. Also discussed was the humanitarian landmine clearance efforts in the border regions, directed towards the complete elimination of the tremendous hazard these mines present. Beautiful photographs were also shown, depicting the splendor of the land of our brave ancestors and taking you on a brief journey from Lachin to Hadrut in the south, to Martakert in the north east, Kalbadjar in the northwest and Aramas and more. An attempt was made to provide a unique experience of the history, culture, beautiful scenery and humanitarian efforts to save lives of Karabagh.

Gala Danilova has graduated from the Mesrop Mashtots University in Stepakanert, where she studied History and International Relations. She joined the Hazardous Area Life-support Organization (HALO) in September 2002 as a Mine Risk Education (MRE) coordinator in Stepanakert. After several years in the MRE program she was given responsibility for Logistics and then Statistics in the Nagorno Karabakh office of HALO. Gala has also supported the MRE team of HALO in Abkhazia, as well as the USA office of HALO, carrying out several fundraising efforts in the United States, during her three trips through the years 2007-2008. In May of 2009 she was promoted to her current assignment, as the Director of Finance of

HALO. Ms. Danilova was born in Baku. Her family moved to Stepanakert in 1988 and she currently works and lives there.

“The Journey Of Creating The First Travel Guide Of Armenia” by M. Karanian

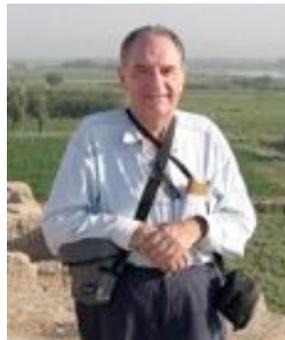
Abstract: In this presentation Armenia and Artsakh was showcased from the perspective of an author-photographer who is creating the first travel guide of Armenia. Through the beautiful photographs which were created during many years of travels, the national heritage of Armenia was highlighted. This heritage is multi-faceted and includes cultural heritage, which is depicted through photographs of monasteries, fortresses, natural beauty, which takes the form of the environmental wonders of Armenia. The cultural heritage of Armenia was further presented in the form of the heroic people of the nation, who will be depicted in splendid portraiture. The presentation took the audience to ancient sites that are rarely seen by tourists, including to G’Tchivank, Tsitsernavank, and Dadivank, which are all in Artsakh, and to Kirants and Meghri, in northern and southern Armenia, respectively. The commentary explained the significance of these sites to Armenian history. Also presented were the environmental wonders of Shikahogh, which is near the Iran border, and Teghut, which is in northern Armenia, and their significance to Armenia will be highlighted. Because Diaspora is inseparable from the Armenian nation, included will be images from the historic and ancient Diasporan community of Jerusalem, which is the subject of a future book by Karanian. The role of Armenians in sharing or controlling almost every Christian site in the Holy Land will be discussed. These photographs were created during nearly two decades of research for ARMENIA AND KARABAKH: THE STONE GARDEN TRAVEL GUIDE. In the process of documenting this heritage, the splendor and beauty of the Republic of Armenia, of the Artsakh Republic, and of the Armenian nation was revealed.

Matthew Karanian is an attorney, and he practices law in Pasadena. He researched and wrote ARMENIA AND KARABAKH: THE STONE GARDEN TRAVEL GUIDE. He also created many of the book’s photographs, along with co-photographer Robert Kurkjian. Matthew was born and raised in Connecticut. He first traveled to Armenia in 1995, to work at the American University of Armenia (AUA). He later served as Associate Dean of the law program at AUA, and as Director of the university’s Legal Research Center. He and his law students founded Armenia’s first English-language law journal, the Armenian Law Review. Matthew has also served on the editorial board of the Armenian International Magazine (AIM). As a legal scholar, Matthew served as a Caucasus

specialist in the Republic of Georgia with the Institute for the Study of International Migration, a Georgetown University research center. He is a co-author of a scholarly treatise about the internally displaced people of Georgia, published by Lexington Books. Matthew graduated with honors from Georgetown University Law Center and from McGeorge School of Law, and he has studied law at the Inns of Court in London, and at the University of Salzburg, in Austria. ARMENIA AND KARABAKH: THE STONE GARDEN TRAVEL GUIDE is the fifth book that Matthew has published about Armenia. The book is dedicated to his parents, Henry and Agnes Karanian, both of whom are the children of genocide survivors.

“The Armenian Genocide on the Battlefields of Archaeology” by G. Areshian

Abstract: The genocide of the Armenian population in the Armenian Highlands and Anatolia started in 1915 and continued later on in different forms. It was actually after the establishment of the Turkish Republic in 1923 that the ideological and cultural genocide of Armenians started in earnest, but one must admit that if the Armenian Genocide during World War I was a policy directed specifically



against the Armenians, the ideological and cultural genocide in the Turkish Republic was not. The latter was a result of the Kemalist nationalist policy of ethnic homogenization of Turkey, the re-writing of Turkish history and destruction of Turkish historic memory, and of the decisive break-up with long-term Ottoman traditions. The eradication of Armenian cultural heritage in Turkey was an organic part of the massive attack launched by the Kemalists on the realities of the Turkish Ottoman past. Within the framework of those broad anti-Ottoman policies, the Armenian cultural heritage became an essential target of the consecutive governments that ruled the Turkish Republic during the 20th century, who feared that the archaeological sites of Turkey related to Armenians will, at some point, remain the only tangible material evidence of the Armenian indigenous presence in the Armenian Highlands and Anatolia. Those governments assumed that the material cultural heritage could become the central issue in case of restitution to the victims of the Armenian Genocide. Governmental policies toward the cultural heritage of minorities in Turkey during the last decade underwent drastic transformations. It was induced by the 2002 Revolution and spearheaded by the Adalet ve Kalkınma Partisi (AKP, Justice and Development Party), the magnitude and importance of which is not yet

adequately recognized neither by the Armenian society in the Republic of Armenia and in the Armenian Diaspora, nor in the majority of countries around the globe. With regard to the Armenian cultural heritage in Turkey specifically, this shift entailed a major change from the policy of destruction of Armenian sites to the policy of misrepresentation. Today a massive effort is put in place to preserve, study, and restore the material cultural heritage in Turkey, which does not exclude the Armenian heritage. However, the policy of the current Ministry of Culture and Tourism of Turkey is to keep the interpretation and presentation of that heritage under strict control. At Ani, which represents the ultimate pinnacle of the Armenian civilization, explanation boards do not mention the very name "Armenian," and during the last few years the Ministry of Culture and Tourism expelled or placed severe restrictions on the activities of many European and American archaeological institutions, at the same time strengthening its control over Turkish archaeologists. These policies impede an adequate study and representation of the multicultural character of civilizations, which blossomed in the territory of contemporary Turkey. Also the nationalistic component, which still is present in these policies, does not allow the development of a proper view of long-term trends in Turkish history. Therefore, it is imperative that Armenian Studies develop joint projects with those among Turkish scholars who have a genuine, interest in the exploration and preservation of multicultural heritage of Anatolia.

Dr. Gregory E. Areshian received his Ph.D. from the Saint-Petersburg (formerly Leningrad) Institute of Archaeology of the Academy of Sciences of the USSR. He directed the excavations of several archaeological sites and participated in other archaeological field projects in Armenia, Syria, Georgia, Egypt, and Central Asia. He is the author of more than 130 publications mostly concerning Near Eastern, Armenian, and Caucasian history and archaeology from Late Prehistory to the Modern times, and also social theory. He authored and edited four books. During the late 1970s and 1980s Dr. Areshian served as a Professor of Archaeology and History at Yerevan State University, the First Vice-President of the Department of Antiquities of the Republic of Armenia, and as the Associate Director of the Institute of Archaeology and Ethnology of the Academy of Sciences of Armenia. In 1991 - 92 he served as the Deputy Prime Minister in the first government of the independent Republic of Armenia. In 1993 he was invited as a Visiting Professor to UCLA, and, after moving to the USA, he taught at the University of Wisconsin, and the University of Chicago. He is currently the Director of the Armenian Research Program of the Cotsen Institute of Archaeology at UCLA. Since 2007 he co-directs the Dvin and Areni UCLA Joint Projects in Armenia and continues participating to the

Moazan-Urkesh Project in Syria. His principal area of interest is the anthropological history of Armenian, Iranian, and Mesopotamian civilizations from Prehistory to the Modern times. Other areas of his research are social complexity, imperialism, nomads and sedentary civilizations in the Near East and Eurasia, and the reconstruction of Ancient Near Eastern, Indo-European, and Classical mythology.

“Grigor Tat’ewac’i and the Modernization of the Armenian Church” by S. La Porta

Abstract: Grigor Tat’ewac’i (1344-1409) lived during a tumultuous time for Armenia and the Armenian Church. During his lifetime, Greater Armenia was ravaged by the invasions of Tamerlane and the kingdom of Cilicia was brought to an end. The Armenian Church was wracked by schism and



scandal, and the Roman Catholic Church had made great headway in converting Armenians. The leaders of the Glajor-Tat’ew school, and Grigor Tat’ewac’i, in particular, realized that the Armenian Church and education system needed reform in order to maintain its relevance. The Tat’ew monastery is one of the oldest in the world, students of which studied humanities, sciences, music, art, calligraphy and miniature painting, among other subjects. The university was of great importance, inspiring creation of similar education centers at almost all the monasteries in Siunik, such as Gndevank, Tsakhats kar and Bgheno-Noravank. Stepanos Orbelian wrote, Tat’ew housed 500 monks, philosophers "deep as the sea," able musicians, painters and calligraphers. A great number of valuable manuscripts were created here, distributed throughout the entire Armenian world. Following the closure of Gladzor University (1291-1384) during the Mongol internecine wars, Tat’ew became the last working university in eastern Armenia. Destroyed during 14th-15th centuries by the forces of Timur Lenk (Tamerlane), the university was closed in 1435 when the monastery was burnt down. Tat’ew's golden age is traced to the tenure of two of Armenia's most erudite and talented teachers, academicians, scientists, historiographers and artists: Hovhan Vorotnetc’i (1315-1388) and Grigor Tat’ewac’i (1346-1409). Using his experience at Gladzor, Vorotnetc’i improved the curriculum at Tatev, and regulated student admissions and teacher qualifications. His most brilliant student was Grigor Tat’ewac’i, who took up his teacher's position when Vorotnetc’i died, raising the university's level to a new height. His were the most productive years of the institution, contributing to the kingdom's culture and political strength. Tat’ewac’i was given the title “Yeramets

Vardapet” which literally means “thrice a great teacher”. This talk will highlight how Grigor was able to modernize the Armenian Church and her teaching while keeping its unique status within the Christian world.

Dr. Sergio La Porta is the Haig and Isabel Berberian Professor of Armenian Studies at California State University, Fresno. He received his PhD in Armenian and Near Eastern Studies from Harvard University in 2001. His areas of research include medieval Armenian intellectual and political history, philology, and apocalyptic literature. Dr. La Porta’s recent publications include a three-volume study on Armenian commentaries on the works of Dionysius the Areopagite (Peeters, 2008) and several articles on political legitimacy and cultural developments in Armenia during the Seljuk period, as well as on aspects of Armenian spirituality.

“Connected Revolutions: Armenians and the Russian, Ottoman, and Iranian Revolutions in the Early Twentieth Century” by H. Berberian



Abstract: In 1907, a skilled bomb maker and one of the three founders of the Armenian revolutionary party (Dashnaktsutiu) of the late 19th century, Rostom (Stepan Zorian) sat with Iranian constitutionalist leaders and agreed to a deal. He consented to place the party at the service of the

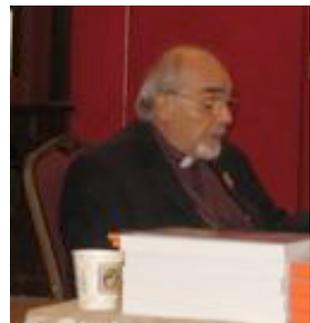
Iranian Constitutional Revolution (1905-1911). Months later, Armenian revolutionaries took up arms against royalists trying to halt the progress of the constitutional revolution. Only two years earlier, Rostom had been in the Caucasus, during the Russian Revolution (1905), convincing his party comrades there to include the Caucasus in their revolutionary struggle. Fast forward three years to 1908, and Rostom took part in important discussions with Ottoman revolutionaries involved in the reinstatement of the constitution of that year. His geographic mobility, his sudden appearance at pivotal moments in three different states' revolutionary struggles, and his remarkable ease when operating in varied and dramatically different milieus are nothing short of striking. Yet Rostom was only one of many Armenians who made their way through the early twentieth-century revolutions in the Ottoman, Russian, and Iranian region, often participating in two or three of the revolutions. Their involvement points to a fascinating and heretofore unexamined and important feature of modern revolutions: the critical circulation of not just ideas but of individuals and material. A review of the biographies of these

individuals, political party documents, and correspondence demonstrates how mobile, active, and dynamic many were in connecting all the major revolutions at the dawn of the twentieth century. Drawing on a “connected histories” approach, I argue that the history of the region and its revolutionary struggles must be explored through the flow of elites, their ideas, and experiences. In that sense, the fact that Armenian revolutionaries and intellectuals, as both local and “global” agents, were literally (and at times figuratively) “all over the place,” collaborating in revolutionary activities, being influenced by, and influencing political culture as well as social and political ideologies, points to the connectedness of these revolutions as well as the need to study them “through one another, in terms of relationships, interactions, and circulation”. Through the examination of the circulation of individuals and ideas as exemplified but not limited to Armenians, the picture that emerges is one of trans-imperial connections and “connected revolutions.”

Dr. Hourii Berberian is Professor of Middle Eastern History at California State University, Long Beach, where she also serves as Director of the Middle Eastern Studies Program. She is the author of a number of articles and a book, Armenians and the Iranian Constitutional Revolution of 1905-1911: “The Love for Freedom Has No Fatherland” (2001). She is currently working on a book project connecting the early twentieth-century revolutions in the Russian and Ottoman empires and Iran through the circulation of Armenian revolutionaries and ideas.

«Հայաստանեայց Եկեղեցւոյ Զասներորդ Դարու Առաջին Կիսու Վերապրումն ու Երկրորդ Կիսու Չարթօսքը» 2. Արգումանտակ

Ամփոփում. Նիւթը նախ կը կեդրոնանայ քասներորդ դարու առաջին յիսնամեակի քաղաքական վերիվայրումներու վրայ երբ մէկ կողմէն Յեղասպանութիւնն ու միւս կողմէ Սովետական կարգերը գրեթէ անեացուցին Հայոց Եկեղեցին: Արմաշու Դպրեվանքը քասնհինգ տարիներ միայն պտղաբեր եղաւ եւ քար ու քանդ դարձաւ 1915-ին թուրքին ձեռքով, նահատակուեցան ընտիր հոգեւորականներ, Կ. Պոլսոյ Պատրիարքութիւնը դարձաւ գործելի եւ Ազգ. Սահմանադրութիւնը ջնջուեցաւ: Կիլիկիոյ Աթոռը գրաւուեցաւ: Սակայն մնացորդաց ափ մը նուիրեալները վերականգնեցին Հայ Եկեղեցին: Նսեմացաւ Մայր Աթոռը եւ Գեորգեան Ճեմարանը որ տուած էր պատկարելի հունձք մը՝ փակուեցաւ Սովետական 40 տարիներ: Հոս եւս



քանի մը նուիրեալներ բաց պահեցին Մայր Աթոռը նուազագոյն աստիճանով: Դարու երկրորդ յիսնամեակի սեմին մեռաւ Ստալին եւ երկու տարի ետք Յայրապետ մը Նախախնամական մեծ դեր կատարեց 40 տարիներու գահակալութեամբ եւ հիանալի զարթօնք արձանագրեց Յայ Եկեղեցւոյ վերակերտումով Յայրենիքէն ներս եւ Արտասահմանի մէջ, անձամբ դիմաւորելով ՀՀ նոր արշալոյսը 1991 թուականին:

S. Չաւէն Զինյ. Արզումանեան ծնած է Գահիրէ: Անթիլիասի Կիլիկիոյ Կաթողիկոսութեան Դպրեվանքը ընդունուած է 1949-ին եւ 1954-ին արեղայ ձեռնադրուած է: Հոլովական ծառայութիւն կատարած է Եթովպահայ գաղութին եւ 1958-ին, հրաւերովը Ամենայն Յայոց Ս.Տ. Վազգէն Ամենայն Յայոց Կաթողիկոսին, այցելած է Յայրենիք եւ Մայր Աթոռ եւ Էջմիածնի Մայր Տաճարին մէջ ստացած է Վարդապետի չորս աստիճանները եւ լանջախաչ: Ծայրագոյն Վարդապետի աստիճանները ստացած է Արեւելեան թեմի Առաջնորդ Թորգոմ Արքեպս. Սանուկեանէն Ֆիլատելֆիոյ մէջ 1967-ին երբ իր առաջին Մագիստրոսի վկայականը ստացաւ տեղւոյն համալսարանէն: Ուսանած է Լոնտոնի համալսարանին մէջ երեք տարի, որմէ ետք 1962-ին եկած է ԱՄՆ եւ մաս կազմած Արեւելեան Թեմին՝ ծառայելով 40 տարիներ, Սիոն, Թորգոմ եւ Խաժակ Արքեպս. Տարիներուն, Ֆիլատելֆիոյ երկու համալսարաններուն, եւ ապա Մոնթրիալի եւ Ֆլորիտայի համալսարանի 20 տարիներ, մինչեւ 2003 թուականը, որմէ ետք հաստատուած եւ հովուած է Փասատիսայի Ս. Գրիգոր Լուսաւորիչ համալսարանը: Արժանացած է երկու Մագիստրոս եւ մէկ Դոկտոր աստիճաններու Ֆիլատելֆիոյ Թեմբըլ եւ Նիւ Եորքի Գոլումպիա համալսարաններէն: Գրած է ամբողջական Կիրեղ Աղեքսանդրեցիի «Պարապմունք» երկի մասին եւ անգլերէնի թարգմանած եւ հրատարակած է Դելոնդ Երեցի «Արաբաց Արշաւանքները ի Յայաստան» երկը որպէս դոկտորական թեզ: Թարգմանած եւ հրատարակած է նաեւ Ուիստանէս Պատմիչի երկու գիրքերը: Հրատարակած է շարք մը երկեր եւ ցուցագրած է Ամերիկեան գրադարաններու մէջի տասնեակ նը հայերէն ձեռագիրներ: Իր գլուխ գործոցն է «Ազգապատում»ի յաւելեալ երեք հատորները, որպէս շարունակութիւն Մաղաթիա Օրմանեան Պատրիարքի համանուն գործին, շարադրելով քսաներորդ դարու եկեղեցական եւ ազգային պատմութիւնը՝ 1910-1999: Դոկտ. Չաւէն Ա. Զինյ. Վերջերս հրատարակեց Աստուածաբանական եւ մատենագիտական շարք մը երկեր թե՛ հայերէն եւ թե՛ անգլերէն լեզուներով: Իր յիսնամեայ ծառայութեան առիթով Ս.Տ. Գարեգին Ամենայն Յայոց Կաթողիկոսը պարգեւատրած է զինք Յայրապետական Կոնդակով եւ «Ս. Սահակ եւ Ս. Մեսրոպ» պատուոյ շքանշանով:

“Genetic Disorders in the Armenian Population: Genomic Center of Excellence in Armenia” by M. M. Moradian

Abstract: The Armenian population, being one of the oldest in the world, through the centuries has accumulated a unique Genetic makeup, with specific mutations in their DNA. Some of these mutations could be the cause of different diseases. This presentation introduced some of the Genetics disorders that are prevalent among Armenians and discuss the need to create a Genetics and Genomics Center of Excellence in Armenia. In addition, the significance and impact of such a center on the general health of all Armenians in Armenia and Diaspora was highlighted. The health and wellness of Diaspora Armenians could also be enhanced, since all Armenians share the same genes and mutations.



Dr. Mike Mkhitar Moradian has received his Bachelors of Science degree in Microbiology and Medical Technology, with honors from the California State University, Los Angeles, his Masters of Science degree in Bioinformatics and Ph.D. in Molecular Genetics from University of California, Los Angeles. Dr. Moradian is a Board Certified Clinical Laboratory Bio-analyst with the State of California, a Molecular Genetics Scientist from American Board of Bio-analysis, a High Complexity Laboratory Director and Clinical Consultant from ABB. He has worked as research scientist and laboratory Director for over a decade, developing Genetics assays and setting up complex Genetics laboratories. He is currently the Director of operations at Kaiser Permanente Regional Medical Genetics Laboratories. He also serves as a senior scientist and consultant for Morava Inc. scientific and technology services, leading a research project on FMF aka the Armenian disease. His latest works on FMF in a large cohort of Armenian population were published in prestigious scientific journals, such as Nature's Journal of Human Genetics in 2010 and recently in Nature's Genetics in Medicine. Dr. Moradian is the leading expert for the ARPA institute in the implementation of the Genomics Center of Excellence, to be established in the Institute of Molecular Biology of the National Academy of Sciences of Armenia.

“Armenian virtual College” by Y. Zoryan

Abstract: The AVC is AGBU’s newest educational project. It is an online learning institution for Armenian studies. It was initiated in 2004 by Dr. Yervant Zorian, who had long noted the need for an educational program that

better addresses the current demands of the Armenian nation in the Diaspora and the Homeland. Through the use of both synchronous and asynchronous online communications, AVC allows students to learn new material at their own pace, but also to confer face-to-face with their virtual teachers and classmates. Furthermore, with the latest advances in the world of virtual education, AVC's mission also is to create a virtual learning community that can foster cultural education and social communication, otherwise out of the reach to most Armenian students across the globe.

Dr. Yervant Zorian is a Fellow and Chief Architect of Synopsys Corp, Mountain View, CA. Previously was the Vice President and Chief Scientist of Virage Logic Inc, and a Distinguished Member of the Technical Staff at AT&T Bell Laboratories. He has authored more than 300 scientific papers, four books, holds over 30 US patents, and received numerous best scientific paper awards. A Fellow of the IEEE, he was selected by Electronic Engineering Times among the top 13 influencers on the semiconductor industry in the past 50 years. Dr. Zorian was the 2005 recipient of the Industrial Pioneer, and the 2006 recipient of the IEEE Hans Karlsson Awards. He served as the General Chair of the 50th Design Automation Conference, held in June 2013, in Austin, TX. He is also a member of the AGBU Board of Directors, serves as the chair of AGBU Silicon Valley Chapter, and a trustee of the American University of Armenia. He is a Diasporan member of the National Academy of Sciences of Armenia.



“Why is Armenia “Poor?”” by A. Eisaian

Abstract: In the modern age of abundant information and education, collaboration is at the heart of true innovation and market success. Commitment, Competence and Connectedness are the keys to increasing the probability of success. The presenter's experiences derived from a 40-year ukhd (pledge) in 1999

to visit Armenia every year and help Hayasdan develop into a sustainable and prosperous country. Now in the 14th year of this ukhd, what the experiences in Armenia have shown and the probable answers to one important question: Why is Armenia “poor”? was discussed. The presentation responded to the following questions: Is it due to lack of natural resources? No. Is it due to the twin blockades of Turkey and Azerbaijan? No. Is it because of



lack of proper support from Diaspora and the international community? No. Is it due to inadequate governance? No. Is it due to inadequate and out dated educational systems at all levels? No. Is it due to an improper mindset, left over from Soviet times? No and yes. Is it due to lack of strategic planning? No. These and similar issues were addressed and discussed, in light of his 14 year experiences with Armenia. The conclusion was that, not all are bad in Armenia and there are a lot of positive signs of developments. There are a lot of problems as well. However, if each one of us does his or her share, Armenia will solve most of her problems and become a economically viable country.

Al Eisaian is the Founder and Chairman of IconApps, a mobile data platform company, and the developer of the popular “Intuition: Mom’s Personal Assistant” app on the AppStore. Al served as the Global Head of Product Strategy and Marketing for Opera Solutions, a global Big-Data analytics company based in NY from 2010-2011. In 2005 he Co-Founded and served as Chairman and CEO (until 2008) and Executive Chairman of the Integrien Corporation--until its acquisition by VMWare in 2010. Eisaian Co-Founded CreationPoint Systems, a systems management consultancy, from 2001-2005. He served as the SVP and General Manager of LowerMyBills, Inc., later acquired by Experian Corporation, from 2000-2001. Al has also served as Associate Partner at USWebCKS, Business Development Director at LaunchPad (an idealab company) and Business Unit Manager at NMB Corporation. Al is the author of three staged plays, “Who Gives a Damn?” staged in 1992, “Chaos Unlimited!” staged in 1996, and “Emptiness” staged in 2004-2005. He has earned an MBA from Pepperdine University and a BSEE from Oklahoma State University. An avid traveler, hiker and yoga practitioner, he has witnessed human kindness and oneness in nearly 30 countries in 4 continents.

“Human Trafficking & Armenia” by V. Zanoian

Abstract: In 2008, the United Nations estimated that nearly 2.5 million people from more than 125 different countries were being trafficked into some 135 countries around the world. Trafficked women and children are often promised work in the domestic or service industry but, instead, are taken to brothels where they are forced into prostitution, and their passports and other identification papers are confiscated. Vulnerable populations in former Soviet states, such as Armenia, are particularly susceptible to this global phenomenon. Since Armenia's independence, thousands of



Armenian women and girls have been taken -- to Russia, Turkey, and some Arab states of the Persian Gulf -- to be initiated into prostitution. The presentation focused on the newly published crime novel, "A Place Far Away," which, in addition to sex trafficking, explores the underlying socio-economic enablers of that crime in Armenia. The novel uses gripping fiction to expose the horrific reality of this phenomenon, and focuses on the story of Lara Galian, a 16-year-old girl from a poor village in Armenia who is forced into prostitution after a corrupt oligarch murders her father. Soon after, Lara finds herself in Moscow and then Dubai, as part of a human trafficking ring. Along with the help of a Swiss investigative journalist, she fights to free herself and to be reunited with her family in Armenia. The presentation also touched upon how young Armenian women are taken and sold into the sex trade. The story is based on real characters and events, although names and sceneries are altered for safety. Stressed was the importance of prevention of such inhuman activities in Armenia.

Vahan Zanoian is a poet, author and global energy expert with over thirty-five years of experience serving as a consultant to numerous international and national oil companies, banks, government agencies, and other public and private organizations. He has graduate degrees in Economics and Political Science from the American University of Beirut and University of Pennsylvania. He has travelled extensively throughout the world in both his professional and personal life. Zanoian has published two volumes of poetry in Armenian (Վերադարձ and Երկու Դուրս), in addition to his debut novel, A Place Far Away, which has received very favourable reviews and recognition through several professional channels. For more information on A Place Far Away, visit:

1. The book's fan page: <https://www.facebook.com/APlaceFarAway>
2. Interview with Civilitas: http://www.youtube.com/watch?feature=player_embedded&v=2xo8rTJS-fQ
3. Article in Peoples' Voice: <http://www.thepeoplesvoice.org/TPV3/Voices.php/2013/08/23/women-exploited-author-zanoian-spotlight>
4. Interview with HETQ: <http://hetq.am/arm/news/30244/inchu-enq-aysqan-antarber-ays-poqr-erkri-apagayi-handep.html>
5. Article/Interview in Aztag Daily: <http://www.aztagdaily.com/archives/122040>
6. Reader Reviews on Amazon: <http://tinyurl.com/k79r6xv>
7. KIRKUS Review (<https://www.kirkusreviews.com/author/vahan-zanoian/>)

Zanoian currently divides his time between Southern California, Armenia and the Middle East and is actively involved in numerous philanthropic activities in Armenia.

Trip Report on ARPA Activities in Armenia Hagop Panossian and Hrachoohi Boghossian

During my trip to Armenia from September 30 to November 9, 2013, I (and Hrachoohi Boghossian in some cases) had the opportunity to meet with the Minister of Diaspora, Mrs. Hranoush Hakobyan, and Deputy Minister of Culture, Mrs. Arev Samuelyan. Meetings were also held with the Head of the State Science Committee of Armenia, Dr. Samvel Harutunyan; the Presidents of the State Engineering University of Armenia (SEUA), Dr. Ara Avetisyan and the Yerevan State University (YSU), Dr. Aram Simonyan; the Vice Presidents of the YSU, Dr. Ruben Markosyan and Dr. Alexander Grigoryan, and of the SEUA, Dr. Areg Gregorian; as well as the President of the American University of Armenia (AUA), Dr. Bruce Boghossian. Especially important were the meetings with the Director of the Molecular Biology Institute (MBI), Prof. Anna Boyajyan and her staff. Throughout the stay we also met with several university officials, professors, heads of associations and others. The following summarizes the important discussions during the various meetings:

October 1, 2013

1) Dr. Areg Gregorian, SEUA, was visited to discuss the Distance Learning Program, the Invention Competition and the Energy Efficiency Laboratory. He suggested that we present the list/abstracts of the potential seminars for the Distance Learning Program early on, so that the SEUA can have lead-time to organize them.

2) A meeting was held with the head of the Energy department of the SEUA, Prof. Mary Ghazaryan to discuss the Energy Efficiency Laboratory. Also present were L. Hovhannisyann and N. Harutunyan. They were told that this project has been dragging on for too long and it is time that we initiate something concrete. They indicated that the room is already set aside for the laboratory and there already are two "Materials" panels hanging on the walls, which show students various materials that are used in construction and are known to be insulation and energy saving materials. They insisted on first of all purchasing a gas analyzer that can measure CO, H₂, N₂ and CO₂ with ~1% accuracy. The rest of the tools; e.g., software and equipment, can be purchased later.

October 2, 2013

3) A meeting was held with the ARPA "Armenia Team", Madlene Minassian, Nazareth Seferian and George Tabakian, with Hrachoohi Boghossian and myself. Discussed were the issues related to the MBI, such as what the team should be doing to help achieve the best operational system for the ARPA donated sequencer, which will arrive MBI soon. It was agreed that a good operational protocol should be developed and distributed to all the

centers interested in using the sequencer. In addition, there should be periodic visits to MBI to assess the operational efficiency, as well as to discuss any potential issues with the staff. It was suggested to invite all the stakeholders, just as was done two years ago in the State Science Committee office, to discuss these issues and get some feedback on what the general needs are, as well as see if there are any concerns.

October 4, 2013

4) Digitec-Armtec: The annual Digitec Exhibition was attended, which had a significant participation by SEUA. Also attended was the Armtec Conference, which had presentations by the Prime Minister and some representatives from Industries in Armenia, who discussed some generalities about what Armenia is doing in the IT industry and what needs to be done in addition.

October 5, 2013

5) There was a conference at AUA on WIKI Media. Quite a few young men and women were participating and presented their works. The works involved over 6000 articles about Armenia, the Armenian culture, history, etc. An amazing amount of enthusiasm was exhibited by these young participants.

October 7, 2013

6) Hrachoohi Boghossian and myself paid a visit to the Rector of the SEUA, Dr. Ara Avetisyan. Discussed were the annual Invention Competition of the ARPA Institute and what needs to be done to increase the participation of the university students in Armenia. It was suggested to include the young, newly graduated scientists who are already performing research and will have new ideas and have a better chance of participating. Also discussed were the Distance Learning Program and the Energy Efficiency Project. Dr. Avedisyan's suggestion was to engage more people in presenting new fields in science and engineering/technology. As for the Energy Efficiency Project, he suggested to work with Mary Ghazaryan.

7) Hrachoohi Boghossian presented a lecture on Innovation, Invention and Entrepreneurship to the faculty and students of the SEUA, as part of the monthly lecture series that the administration holds. Unfortunately there were a few students present and about 35 professors and staff representatives. The presentation was received very well and there were numerous questions and comments. They all seemed to agree that a fundamental shift in mentality is necessary in Armenia, and everyone needs to update their knowledge and to think in a more expanded fashion. The old Soviet mentality and way of thinking needs to change for the global, especially in regards to methodology in science and engineering.

October 9, 2013

8) There was a Young Scientists' conference, organized by the SEUA, which was attended by Hrachoohi and myself. There were quite a few research projects presented by over 20 students. Some of them were well done.

9) Dr. Pavel Avetisyan, the head of the Institute of Antiquities and Ethnography, was visited to discuss the e-Archeology project. He was presented with a new initiative, namely to present the project to the US Ambassador and see if they can help fund part of it and start at the Institute. He agreed with the idea and promised to get back with me, but never did.

10) Dr. Nelly Hovannisian's lab was visited to see the progress they are making. Nelly is doing a tremendous job in her lab and working hard to do research in various botanical and grain genetics.

11) Dr. Aram Simonian, the Rector of the SEUA was visited to discuss the Invention Competition and the Distance Learning Programs. He suggested to discuss issues related to the Distance Learning Program with Dr. Alexander Gregorian, and to meet with Dr. Ruben Markosyan for the Invention Competition. They were both visited right after the meeting with the Rector. Both promised to help. ARPA will send the seminar announcements to Dr. Grigorian and he will organize the seminars with the right departments. Dr. Markosyan will promote the Invention Competition via e-mails, the Internet and the YSU website.

October 11, 2013

12) Hrachoohi and I met with the Director of the MBI and her staff. Present were Hasmik Davtyan, Gayane Manougyan, Christine Piroumyan, Hovakim Zakharyan, Arsen Arakelyan (Deputy Director), Christine Markaryan, Lousine Jamharyan, Roxana Zakharyan, and Garine Mayelyan. The needs for each of the various experts were discussed and suggestions were made to prepare plans for their upcoming sequencing tasks in order to assess the material (reagents) needs. Also suggested was to prepare plans for the sequencer's proper maintenance, operation and sharing.



October 15, 2013

13) Hrachoohi and I met with Vigen Sargsyan, the Chief of Staff of the President of Armenia. We presented the issues we face with various Ministries, the lack of participation by the university students in the Invention Competition, as well as the difficulties we have organizing Distance Learning Seminars for YSU and other universities. His suggestion was to join hands with the Young Scientists of Armenia Fund organization (Arusyak Poghosyan) for wider promotion of the Invention Competition. We suggested for the President to pay special attention and promote the Invention Competition, just as he does the Synopsys competition. However, the suggestion was not received very well.

October 16, 2013

14) We had an excursion with friends to Norahovid, an enchanting mountaintop south east of Areni in Armenia, which has a breathtaking view of mountains and gorges, with colorful horizons.

October 17-19, 2013

15) Hrachoohi presented her lecture on Innovation, Invention and Entrepreneurship to the graduate students of the SEUA and impressed upon them that innovation is the way to achieve inventions, and entrepreneurship leads to economic gain for Armenia.



16) We attended sessions of the conference organized by the National Academy of Sciences of Armenia, entitled: Second International Congress on Armenian Studies “Armenian Studies and Challenges of Modern Times”. Quite a few sessions on various topics related to the Armenian Language and culture were simultaneously held. The results of my mini-survey revealed that there was not much new material presented.

October 18, 2013

17) The 80th Anniversary Celebration Conference of the SEUA was attended, where I delivered a speech stressing the importance of innovations, inventions and entrepreneurship for the young generation in Armenia and the role of the universities. I also suggested that the

professors should always try to update their knowledge and keep the students informed about the new developments in engineering, science and technology.

18) The ARPA Institute Invention Competition Awards Ceremony was held in the YSU Balyan Hall. Present were the participating students and their advisors, as well as the Deputy Minister of Diaspora, Mr. S. Srabyonyan and the Pro-Rector of the YSU, Dr. R. Markosyan. The Awards were handed to the winners and certificates to all participants. Then, Mr. Srabyonyan and Dr. Markosyan made a few comments and thanked ARPA for organizing the competition and encouraged the students to be more active and advertise the competition. Also present was Dr. Mark Grigorian who made a few comments and encouraged the students.



October 20, 2013

19) I had a meeting with the head of the Union of Information Technologies in Armenia, Mr. Karen Vardanyan. He was interested to learn about ARPA activities and possibilities of cooperation with the union. Moreover, he promised to provide any assistance he can if we ever need it.

October 21-22, 2013

20) The MBI International Young Scientists Conference, “Perspectives for Development of Molecular and Cellular Biology” was attended. They had a formal opening and several well-known scientists were on hand presenting their research.

21) We had a meeting with the Coordinator of the Young Scientist’s Fund (which is sponsored by the Prime Minister), Ms. Arusyak Poghosyan, and discussed ways and means of expanding the participation of the Invention Competition. Arusyak promised to notify all the members on the Board of the YSF and give them the flier, as well as ask them to distribute the information to all graduate students on their list.

22) Civilitas had an interview with me, both in English and in Armenian, which was distributed worldwide. Discussed were my impressions on the science and technology in Armenia, as well as the ARPA Institute activities.

October 23, 2013

23) I had a meeting with Prof. Vanya Barseghyan, the head of the Diaspora Division of the National Academy of Sciences, and discussed the ARPA activities, especially the MBI sequencer and the cooperation to advance the DNA technology.

October 24, 2013

24) A meeting was held with the Minister of Diaspora, Mrs. Hranoush Hakobyan. She expressed her regrets for not being able to attend the Invention Competition Awards Ceremony due to unforeseen events. She was eager to help in teaching the students about innovation, invention and entrepreneurship and asked his deputy, Mr. Srabionyan to organize two different lectures for the students at the YSU. As for the e-Archeology program, she suggested for Vicken Abajian, the engineer who has developed the software in Syria, to write a personal letter to the Minister and she will present it to the President of Armenia for funding.



25) I briefly attended the conference on Renewable Energy, held in the Hrazdan Hotel. They had quite a turnout, especially younger generation attendees. The program was also quite varied. Unfortunately most of it was in Russian.

October 25, 2013

26) I had a meeting with the YSU Armenological Research Institute's Director, Dr. Mher Hovhannisyan, upon the suggestion of Rector Simonyan, to discuss the Distance Learning program. His suggestion was to visit the 8 websites of the Institute for a host of information on everything related to Armenia and Armenians.

27) Mr. Thomas Chanian, Mr. Gagik Harutunyan and I had a meeting with Mr. Areg Grigoryan, Pro-Rector of the SEUA. Mr. Chanian owns a software/design company in Armenia that employs 25 engineers and is looking for more. They were introduced to Mr. Grigoryan in order to cooperate with the SEUA and have their engineers work for the company.

October 26, 2013

28) I was given an interview with the Hetq on-line newspaper. The interview was published on Monday, October 28.

November 1, 2013

29) Mark Grigorian and myself had a meeting with the MBI Staff and representatives from 13 different organizations in Armenia who deal with DNA and would be using the sequencer. They were asked to present their needs, concerns and suggestions. There were a lot of comments and suggestions regarding the proper use of the sequencer and they all agreed that there should be an established protocol that describes the requirements and conditions for using the sequencer. Moreover, there will be four staff members from the MBI who will be trained to operate the sequencer and they will be the only ones who will be operating it. No one else will be allowed to operate the sequencer, under no circumstances. Present were: T. Seferyan (Biophysics Inst.); A. Hambartsoumyan (Biotechnology Inst.); L. Aslanyan (Information Tech. Inst.); A. Setragyan (MBI); V. Hakobyan (Acad. Of Sciences Representative of the president); A. Boyajyan (MBI Director); N. Hovhannisyan (Biotechnology Inst.); G. Manoukyan (MBI); Z. Khachadryan (MBI); H. Vartabedian (Slavonik Univ ProRector); R. Harutunyan (YSU, Head of Genetics Dept.); C. Margaryan (MBI); O. Zakharyan (MBI); L. Jamharyan (MBI); Y. Dalyan (YSU, Molecular Physics Dept Head); and A. Arakelyan (Deputy Director of MBI).

30) A separate meeting was held with the four operators of the sequencer, Christine Margaryan, Oxana Zakharyan, Garine Manougyan and Anahit Setrakyan. Also present were Arsen Arakelyan and Mark Grigoryan. Suggestions were made to pay special attention to the operational and administrative rules and procedures. It was suggested to write a set of steps that should always be used and checked every time the sequencer is being operated. Also suggested was to prepare a detailed protocol, whereby all requirements and conditions to do any sequencing by an outside organization would be clearly stated.

November 4, 2013

31) A meeting was held with the Chair of the Diaspora Studies Department of the YSU, Dr. Arman Yeghiazaryan, to discuss ways and means of cooperation with the ARPA Institute. It was suggested to start with holding/organizing distance learning seminars by inviting Diaspora experts to present their lectures. In addition, they suggested that their technical papers be sent to ARPA Institute and have members edit and transform them in accordance with international standards.

32) A lecture was presented to the staff of the Knightsbridge corporation, which employs 25 engineers, some of whom are Ph.D. students. The topic was "Innovation, Invention and Commercialization". They were encouraged to participate in the ARPA Institute Invention Competition and advertise it to their peers.

November 5, 2013

33) A meeting was held with the Head of the State Science Committee, Dr. Samvel Harutunyan. Discussed were the ARPA Institute Invention Competition and ways in which we can get higher participation. His suggestion was to combine efforts with other organizations, such as NSEF or even their organization.

November 6, 2013

34) I attended the NAS of Armenia conference on “90 Year of Turkey: Ataturk to Erdogan”. There were papers on the Kurds, Armenia-Turkey relations, and other related topics.

35) I met with Dr. Aram Hajian and Dr. Alen Amirkhanian of the AUA and discussed ways in which we can coordinate “Distance Learning” seminars. It was agreed to start with the November 22 seminar by Prof. Chirikjian and see the response from the students. Also, we could try to accommodate requests for special topics by finding the right speakers.

36) I met with Meroujan Karapetyan, the head of the Digilab of the AUA. He presented the extensive work they are doing on digitizing all the important literature related to Armenia and Armenians, as well as input data in Wikipedia.

November 7, 2013

37) I had a meeting with the ARPA “Armenia Team”: Madlene Minassian, Nazareth Seferian, Maro Aghazarian and Mark Grigorian. Discussed were the role of the members in Armenia in coordinating the smooth and proper operation of the sequencer. They will periodically visit the MBI and talk with the operators and the administrators, find out about issues/difficulties and problems and try to help resolve them. It was suggested to fund the first year for reagents on a per project basis.

38) I had a meeting with Ms. Arev Samvelyan, the Deputy Minister of Culture and Mr. Armenag Sargsyan, the head of the Cultural Heritage Committee. It was suggested to apply for funding under a new program and Mr. Sargsyan will help achieve that.

39) I presented a lecture to the graduate students of the State Medical University of Armenia. There were over 150 students and the lecture was received enthusiastically with many interesting questions. The topic was “Innovation, Invention and Commercialization”, and the main thrust was to encourage students and young scientists to create new and competitive products in Armenia and help in advancing the economy. The lecture was organized by the Ministry of Diaspora jointly with the Vice Rector of the medical university, Dr. Samvel Avetisyan.

November 8, 2013

40) A lecture on “Innovation, Invention and Commercialization” was also presented to the Armenia State University of Economics students and professors. The stress was placed on the commercialization process, since these students were mainly interested in the economic sector. A meeting was also held with the Rector of the AUSE, Dr. Koryun Atoyan and discussions were held on ways and means ARPA can be involved in helping the university. There was a suggestion to sign a memorandum of understanding between ARPA and the AUSE.

ARPA Institute Has Purchased A DNA Sequencer for the “Genomics Research Center” In Armenia

We are delighted to report to our donors that the fundraising for the “ARPA Institute DNA Project” was highly successful, thanks to all of you who donated. We have already purchased a refurbished “ABI 3130 Genetic Analyzer” and sent it out, via the United Armenia Fund, to the Molecular Biology Institute of the National Academy of Sciences of Armenia. The Molecular Biology Institute has received the sequencer and is ready to install it. Special arrangements are being made to send a specialist to Armenia to install the sequencer and to train a cadre of technicians to operate the instrument properly.

Thank you again for your generous donations. [The list of donors is provided on the next page.](#)

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