



Analysis Research & Planning for Armenia

ARPA Institute,
NEWSLETTER

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ԱՐՓԱ ՀԻՄՆԱՐԿ
ԼՐԱԲԵՐ

Դեկտեմբեր 2018, Թ 25

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**Շնորհալուր Նոր Տարի
եւ Սուրբ Ծնունդ**

**Merry Christmas
& Happy New Year**

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President's Message

Հայաստանի Պետք է Աննախաղէպ Վերակարգողական Աշխատանք Տանք:

Յակոբ Փանոսեան

Ժամանակն է որ Հայաստանի նոր կառավարութիւն կազմելու համար լրջօրէն քննարկել ՀՀ կարելորագոյն միջազգային եւ ներքին մարտահրաւերները եւ ըստ այնմ գտնել կամ նշանակել այնպիսի կարող եւ խելացի անձեր որոնք կրնան ազդեցիկ կերպով եւ դիվանագիտական ամենաբարձր նորմերով առաջ տանիլ Հայաստան երկիրը: Ընդդէմ է որ տնտեսութիւնը ամենակարեւորներէն մէկն է, սակայն Հայաստանի քաղաքական եւ միջազգային խընդիրները եթէ ծուռ հունի վրայ դրուին կրնայ ոչ միայն տնտեսական տագնապ, այլ նոյնիսկ քաղաքական, ընկերային եւ այլ տագնապներ ստեղծել: Պետք է աջալուրջ ըլլալ կատարուող միջազգային անցուդարձերուն, տրնտեսական վերիվայրուիներուն, ինտրիկային առ-ու-տուրներուն, դրացի երկիրներու միջեւ կատարուող նորանոր համաձայնութիւններուն եւ այլ տեսանկի ու անտեսանկի թշնամական ծուղակներուն: Նոր կառավարութիւնը պէտք է այնպիսի կազմ մը ունենայ որ կարողարացնէ «թաւշեայ» յեղափոխութեան բերած բարիքներն ու առավելութիւնները եւ ամենայն նախանձախնդրութեամբ, հեռանկարային հոգածութեամբ եւ լայնախող ու մըտածուած աջալուրջութեամբ կառավարել ներքին թէ արտաքին բոլոր գործունէութիւնները: Հայաստան այժմ «վթարային վիճակ» (Emergency Rule) պէտք է յայտարարել եւ նոր ծրագրաւորութեան, կրթական, գիտական, տնտեսական, ներքին եւ արտաքին քաղաքական, ընկերային (Սոցեալական) թէ ազգային հարցերու մէջ պէտք է թոյլատրել յատաշիւսաղացք արձանագրելու միտումով ծրագիրներ կազմել եւ գործունէութիւն ծաւալել: Սփիւռքը պէտք է իր կարելին ընէ որպէսզի թիկունք կանգնի ՀՀ կառավարութեան, Ազգային Ժողովին, հասարակական եւ մասնագիտական հաստատութիւններուն եւ կազմակերպութիւններուն որպէսզի ամէն հայ կարենայ հրպարտանքով յայտարարել իր հայ ըլլալը եւ Հայաստանի օգտակար աշխատանք տարած ըլլալը: Բոլոր արտասահմանի հայերուն արձակուրդի վայրը պէտք է Հայաստան ըլլայ եւ ոչ թէ այլ երկիրներ: Նպաստեցէք ձեր ներդրումներով, ձեր այցելութիւններով, ձեր նուէրներով եւ ձեր մասնագիտութիւններով: Ժամանակը շատ սուղ է եւ ապագան անգնահատելիօրէն արեղծուածային: Յառաջ դէպի հայրենիք!

Nano-Technology Initiative

The Nano-Technology Initiative is progressing slowly but steadily. Several meetings were held in Armenia with the Ministry of Education and Science, Ministry of Diaspora, the FAST team and its Director in Armenia, and Directors of Institutes and university Rectors. The discussions were around the location, structure, management, organization, operation and proper instrumentation of the center. Various

options were evaluated and the general consensus was to try to carry out a Feasibility Study in order to objectively determine the best approach for such a major undertaking.

A proposal is underway for submission to the Asian Development Bank and the European Bank to solicit their assistance in implementing the study. In the meantime, ARPA Institute continues to work with nano-technology scientists in Armenia, providing them with necessary instrumentation to carry out their studies effectively. Thus far, a Shimadzu 1800 Photo-spectrometer and a Magnetic Hypothermia device have been purchased and will be delivered to the proper research institute on the condition that the instrument will be transferred to the future Nano-Technology Center.

ARPA Institute Supported Four Startup Small Businesses in the Berkaber Border Village

The main objective of this venture is to keep villagers in their villages and to help them provide for their families. The process of funding is simple, but efficient and effective. A proposal is written by the villager who has a business idea (with help from professionals in the SAHMAN group), and submitted with a business plan and a promise to pay a certain percentage of the total cost. The

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proposal and business plan are evaluated, discussed with the individuals involved, and a plan is made on its implementation. The best proposals are funded and assistance is provided at the implementation stage, such as providing tools, materials and equipment to the individuals in charge. Progress is monitored regularly; potential problems are discussed and rectified until the business is in good condition and profitable.

In 2018, ARPA Institute funded four new small businesses in the Berkaber village in the Tavush region in northeast Armenia. This village has a large number of repatriates who are all looking for new sources of income, different from traditional agriculture, since their arable lands are dangerous and scarce. The project was announced within our network in the village and the interested parties were interviewed. Four business ideas were selected which we believe would work and have a sustainable market in the nearby villages and cities. The business ideas were briefly discussed with their owners and the respective budgets were calculated and plans were developed.

Selected Four Families:

Sonya Khutavertyan: Textile-Tailorship Workshop

Vahe Alikhanyan: Persimmon Orchard

Edgar Abazyan: Mushroom Cultivation

Hagop Vardanyan: Hydroponics System

Business Tasks Accomplished:

Textile Workshop (<https://youtu.be/gqxsfSvPxdE>) The tailor's room was renovated by the family; the equipment, sewing machines and irons were purchased and brought to their shop in the village. Ms. Sonya was trained on the new equipment, and she started operations on March 15, 2018. They named the workshop NANSON and the business was officially registered in July. Ms Sonya's son is supporting her in sales. After working some time, a 4th sewing machine was necessary and the family purchased it from their own income. She has received orders and is doing quite well; she has hired a couple ladies from the village and trained them to work with her. Since then, the workshop is receiving regular orders. Ms. Sonya's first large order was school kids' uniforms, which she made free of charge. Nowadays she is working on making table and chair covers.

Persimmon Orchard (<https://youtu.be/fQ3LLFgPJFE>) The land was cleaned and plowed, the drip system and related accessories were purchased and installed, the seedlings have been purchased and planted, the pump and pipes were installed and are being used since mid June 2018. The family gets water from the nearby reservoir using pumps. The over-a-thousand trees are already about one meter tall.

Mushroom Cultivation (<https://youtu.be/94AFITuPnUM>)

The room was built and cleaned. Edgar visited the large mushroom cultivation company near Yerevan and received a lot of know-how. Mushroom containers were purchased and in early July, the first batch of mushrooms was harvested and sold locally. The operations continue but, to get a more productive operation, the owner needs a humidifier to control the humidity of the mushroom environment.

Hydroponics System (<https://youtu.be/JdXVSi9FC0U>)

Hagop visited the Institute of Hydroponics in Yerevan and was provided with a lot of information on how he should proceed with his vegetable production. Then, the pilot hydroponics unit was designed, constructed and put in operation. The first harvest of tomatoes was in August.

Distance Learning Seminars For Armenia During 2018

One goal of ARPA Institute is to help graduate students, young scientists, and faculty of the universities in Armenia increase their professional awareness and knowledge through on-line, real-time video-conferencing via the WebEx system. The objective of these seminars is transfer of current technology and information. On September 18 and 22, 2018, the following presentation was made to the researchers and faculty of the Molecular Biology Institute of the NAS Armenia, as well as to the students and faculty of the M. Heratsi Medical School in Yerevan, Armenia.

“Neuromodulation and Neural Prosthesis” by Dr. Artin Petrossians

Abstract: In the past few decades, the use of implantable microelectronic devices in human body to cure different diseases such as Parkinson's disease, epilepsy, deafness, blindness etc. has shown enormous growth and remarkable technological achievements. All implantable biomedical microelectronic devices communicate with nerve cells of the body, 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. Implants can also record neural activity for controlling artificial limbs and detecting epileptic activity. Electrodes are the functional interface between these devices and neural tissue. One of the largest challenges to date has been the size of all implantable microelectronics that has a major role on the efficiency, efficacy and the risk of the surgery. As a result, all medical device companies try to miniaturize the size of the devices and the microelectrodes to increase the performance of the implant and make them more precise and less invasive. However, by shrinking the size of the microelectrodes, the strength of the electrical signal must be reduced, to stay within the

accepted safety limits. Inefficient electrode materials are a critical barrier to progress in the field of electronic implants in general, particularly as the field moves towards more electrodes per device, smaller electrode sizes, and closed feedback systems. An improved electrode material will have a significant impact on the capabilities of the devices and the effectiveness of treatment by enabling the use of microfabricated electrodes for chronic stimulation at higher charge density and by reducing stimulus artifact and increasing signal to noise ratio of biopotentials, thus improving detection of important biomarkers needed for stimulation and recording strategies.

Dr. Artin Petrossians obtained his Ph.D. in 2012 from the Mork Family Department of Chemical Engineering and Materials Science, University of Southern California. He is currently principal investigator (PI), co-founder and chief technology officer (CTO) at Platinum Group Coatings, LLC and former adjunct assistant professor at the Department of Ophthalmology, University of Southern California. Dr. Petrossians' research field is focused on the performance of brain implants and optimization of signals on the brain/machine interfaces. His current research is directed to investigate the neural activities in Parkinsonian mice, rats and monkeys' brains by using high-performance implantable electrode materials.

Science Fairs In All Schools of Armenia

Science Fairs allow students to work individually or in teams to investigate everything from discovering how plants breathe in carbon dioxide and breathe out oxygen, to green energy solutions, to cancer research, to how airplanes fly. Winners have invented ingenious ways, e.g., of building bridges, robots, imaging devices, and high strength materials. The Science Fair process also builds essential skills for success in 21st-century careers, such as critical and creative thinking, communication, teamwork, ethical decision-making, and presentation of oneself.

Գիտահետազոտական հանդես-մրցումները աշակերտներուն առիթ կուտան որ՝ առանձին եւ կամ իրարու հետ գործակցաբար փորձարկումներով գտնեն պատասխանը խրդին հարցերու, սկսեալ բոյսերու թթուածին ներառնլու եւ ածխաթթու արտածելու գործողութենէն մինչեւ նորարական նոսրոններ, արեգակնային մարտկոցներ կազմելը: Շահողներ երբեմն հնարած են նոր մօտեցումներ կամուրջներ եւ շարժիչներ շինելու, եւ նոյնիսկ նոր եւ զօրաւոր նիւթեր ստեղծած են: Գիտահետազոտական հանդես-մրցումներն ու գործընթացն աշակերտներուն մէջ կը կազմաւորէ կարեւոր հմտութիւններ 21-րդ դարու յաջողակ աշխատանքային շուկային պատրաստման համար: Ան նաեւ քննական մտածողութիւն, ստեղծագործ մտածելակերպ, լաւ յարողակցելու եւ գործակցելու ու ճշգրիտ որոշումներ առնելու ունակութիւններ կը սորուէցնէ:

ARPA Institute has been working in Armenia since 2017 training a cadre of teachers to organize and implement a successful school science fair, to help and guide students to select good science projects, and to organize the judging process of the science fairs. This has been done in collaboration with the School Clusters' Union and the Ministry of Education and Science in Armenia, and by trying to coordinate this effort with various organizations in order for Armenia to reach the level of qualification required to compete in the annual Intel sponsored annual International Science and Engineering Fair (ISEF). *The fact is that all nations surrounding Armenia take part in the ISEF. Armenia does not, and this is unacceptable!*

Thus far, we have been able to get five (5) good projects from five (5) schools in Armenia and we are working towards having these projects approved by a "Science Review Committee", recognized by ISEF, so that we can register Armenia as a qualified entity to participate. We are hoping that it can be achieved during 2019.

We need people who know how science fairs work and who can help us in Armenia by working with schools and guiding them for the implementation of the science fairs. Please contact us at info@arpainstitute.org if you can help.

Classical Armenian Dictation

ARPA Institute organized an on-line discussion on July 1, 2018 at 8:00 pm in Merdian, with invited experts from the Los Angeles area to exchange ideas on the subject of reverting back to classical Armenian dictation in Armenia. The conference was between the ARPA Institute and the Instigate Educational Foundation in Armenia. Present were Prof. Hagop Gullujian, Prof. Vahram Shemmassian, Mr. Vatche Semerjian (Nor Or Weekly), Dr. Agop Aintablian (Iranahay), Aram Martirosian (Connect-To), Dr. Hasmig Baran, Dr. Vahagn Poghossian (Instigate), and Dr. Hagop Panossian. Suggestions were made to propose to the government of Armenia to initiate discussions on reverting back to classical Armenian dictation. The on-line meetings will continue in the future to come up with a strategy.

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ԱՐՓԱ Ինստիտուտը այժմ կ'ընդունի նորարարութեան յայտեր 2019 տարուան համար:
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2nd Prize “Natural anti-aging compound”

Gohar Tsakanova, Anna Ayvazyan, Nelli Babayan, Dr. Arsen Arakelyan;
Molecular Biology Institute, NAS of Armenia, and CANDLE SRI

2nd Prize «Օպտիկապես մաքուր 1,2,3-տրիազոլային օղակ պարունակող ոչ սպիտակուցային ամինաթթուների ստացման տեխնոլոգիա»

Hovhannes Adonts, Prof. Ashot Saghyan; Yerevan State University

3rd Prize «Ջրային համակարգերից մետաղների կորզումը ՄԱՆ-մոդիֆիկացված ցեոլիտների կիրառմամբ»

Lena Tangamyanyan, Prof. Lusine Harutyunyan; Yerevan State University

4th Prize «Mo-Cu նանոկոմպոզիտի ստացումը նոր եղանակով եւ եռակալումը 3-D տեխնոլոգիայով»

Hasmik Kirakosyan, Khachik Nazaretyan, Prof. Sofya Aydinyan;
Institute of Physical Chemistry, NAS of Armenia

“One-step, cheap, ecologically clean and universal non-conventional nanotechnology for mass production
of two-dimensional atomic materials”

Derenik Javadyan, Gayane Shmavonyan, Prof. Gagik Shmavonyan;
National Polytechnic University of Armenia

«Փոքր հաստատուն հոսանքների անկոնտակտ չափիչի մշակումը»

Tatul Meliqyan, Prof. Boris Mamikonyan; National Polytechnic University of Armenia, Gyumri Campus

“Phage based express test for pathogen identification and proper treatment selection”

Mkhitar Mkrtychyan; Molecular Biology Institute, NAS of Armenia

“Synthesis of new enantiomerically enriched unsaturated nonproteinogenic (S)- α -amino acids sources”

Anna Mkrtychyan, Liana Hayriyan, Spartak Saghyan; Yerevan State University, and NAS of Armenia

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ARPA Institute Donations in 2018

Custom Probiotic; Mr. Hroun Bronozian	\$6,000	Mr. Arshavir Grigorian	\$250	Dr. Hasmig Baran	\$100
Dr. & Mrs. Armen & Azniv Goenjian	\$300	Dr. Meher Babian	\$150	Dr. Adrin Gharakhani	\$50
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“An Innovative Human Genome Project Covering Ethnic Regions in Armenia” by Wayne W. Grody, M.D., Ph.D.

Abstract: ArmGenia is a joint US/Armenia initiative to determine the genetic variants specific to the Armenian population. Given the unique historical features of this genetically isolated population, this initiative will provide scientific and health benefits for both the Armenian and

international communities. From initial results of whole-exome sequencing cohorts of Armenian individuals traced to Bayazet, Erzurum, Artsakh and Kharpert, DNA sequence comparisons showed that American/European Caucasians and Ashkenazi-Jewish genomes were genetically most related to Armenian individuals, while appearing distant from Mexican/Hispanic, Indian, and African populations. Known mutations in the MEFV gene causing familial Mediterranean fever were detected at frequencies expected (17.5%), but surprisingly, mutations for recessive disorders more typical of other ethnic groups, including Gaucher disease, Fanconi anemia type C, and phenylketonuria, were identified. Analysis of these genomes for disease-causing and modifier variants for other disorders of public health importance to Armenia will be continued, while working to transfer some of UCLA’s genomic technology to our collaborators in Yerevan.

Wayne W. Grody, M.D., Ph.D. is Professor in Departments of Pathology & Lab Medicine, Pediatrics,

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and Human Genetics, Inst. for Society and Genetics, UCLA School of Medicine. He is the director of the Molecular Diagnostic Laboratories and the Clinical Genomics Center within the UCLA Medical Center. He is also an attending physician in the Department of Pediatrics, specializing in the care of patients with or at risk for genetic disorders (with a special interest in familial Mediterranean fever, among others), and director of the UCLA Intercampus Medical Genetics Training Program. In addition, he is heavily involved in basic molecular genetics research in gene expression of arginase and related enzymes in hereditary arginase deficiency and cancers, population genetic screening, and artificial human mutation. He has been one of the primary developers of quality assurance and ethical guidelines for DNA-based genetic testing for governmental and professional agencies including the FDA, AMA, CAP, ACMG, ASHG, NCCLS/CLSI, CDC, AMP, VA, ACGME, and the NIH-DOE Human Genome Project. He served as a member of the NIH-DOE Task Force on Genetic Testing and was the working group chair for development of national guidelines for cystic fibrosis and factor V-Leiden mutation screening. He was the founding chair of the Advisory Committee on Genomic Medicine for the entire VA healthcare system, and President of the American College of Medical Genetics. Recent awards are: Lifetime Achievement, College of American Pathologists; Ward Burdick for Distinguished Service, American Society for Clinical Pathology; Bowes Lectureship, Harvard Medical School; and many others. As a sidelight, Dr. Grody is active in film and television, as film critic for MD Magazine, and as technical advisor and sometime writer for a number of feature films, TV movies, and television series including *Life Goes On*, *Hope*, *CSI*, and others. He did his undergraduate work at Johns Hopkins University, received his M.D. and Ph.D. at Baylor College of Medicine, and completed residency and fellowship training at UCLA. He is double-board-certified by the American Board of Pathology and the American Board of Medical Genetics.



[The following 4 presentations were organized jointly with Naregatsi Chair in Armenian Studies at UCLA.](#)

“The Political and Scientific-Educational Activities of the Armenian Patriarchate of Jerusalem, 1909-1949” by Arman Khachatryan, Ben Gurion University of the Negev (Israel)

Abstract: The research aims to study the political and scientific-educational activities of the Armenian Patriarchate of Jerusalem from 1909-1949, with reference to the political relations between the Armenian Patriarchate and the late Ottoman and British Mandatory

administrations on the one hand, and the State of Israel administration, on the other. It is focused on the investigation of the transformation in the Patriarchate’s political attitude towards the changing authorities, especially after the collapse of the Ottoman Empire followed by the occupation of Jerusalem by the British. It specifically concentrates on the role of the Patriarchate “as one of the many political actors of Palestine and as an Armenian national-religious institution” in the process of shaping a new Armenian identity in Palestine. Consequently, the interest is in the relationship between the Armenian Patriarchate and the Armenian community of Jerusalem and Palestine as a whole, with reference to cultural, social and educational aspects. The main hypothesis is that the Armenian Patriarchate of Jerusalem, apart from its religious activities, was deeply engaged in national activities, reshaping the new Armenian identity and arranging the educational issue of the Armenians living in Palestine. And in order to succeed in all its initiatives, the Patriarchate used its political relations with the changing authorities of Jerusalem. The presentation is mainly qualitative and is based on large archival data from six archives, including the archive of the Armenian Patriarchate of Jerusalem. Most of the data of this archive are studied for the first time within the framework of the presenter’s research.

Arman Khachatryan is a PhD candidate in interdisciplinary studies at Ben-Gurion University of the Negev, Israel. He holds a BA and an MA in cultural studies from Yerevan State University and a master’s degree in Israel studies from Ben-Gurion University. Since 2014, Arman has been a collaborating researcher for the Open Jerusalem Project. He is currently working on his dissertation, which focuses on the activities of the Armenian Patriarchate of Jerusalem during 1909–1949. His interests include Israel studies, Armenian studies, nationalism, and ethnic and religious studies.

“The Policy of Small States in the Strategies of the Great Powers” by Marine Sargsyan, Leiden University (Netherlands)

Abstract: More than ever, Armenia’s economic ties with the Russian Federation are strengthening, reinforced by bilateral agreements and the establishment of an economic union. This research project investigates how Armenia has charted its political course, spanning the declaration of independence in 1990 until the U-turn decision of September 2013. It examines how the competing interests of major political and economic powers such as the EU and Russia impact on the economic relations and political alliances of the Republic of Armenia from the collapse of the Soviet Union. From a theoretical point of view, this work evaluates how small states formulate and maintain

their policy priorities in the context of interaction with, and between, larger and stronger powers. Why study Armenia as a case for small states' politics in relation to the major powers? With the fall of the Iron Curtain and the dissolution of the Soviet Union, global politics entered a new era of power play and international relations. The formation of a multipolar world order raised the importance of small states in big politics, uncovering new ground to study the policies of small states and investigate how they conduct relations with the great powers. In the last decade of the 20th century, the European Union came into the political arena as a major power, becoming Russia's second rival after the USA in the race for economic dominance in Eurasia. In this context, Armenia, a country located at the crossroads of Europe and Asia, is a pertinent case for studying the politics of small states caught between the competing interests of the EU and Russia. It vividly illustrates aspects of competition, power struggle, policy and decision making in regional geopolitics.

Marine Sargsyan is a graduate of Yerevan State University, Faculty of History. She is an alumna of the The Fund for American Studies, AIPES academic program of Georgetown University, Class of 2009. In 2011, as a participant of the European Forum Alpbach, a well known Austrian Foundation, she established the Initiative Group of Alpbach in Armenia. In 2015, Marine continued her academic career at Leiden University, Faculty of Humanities, having already a strong background and expertise in EU-Armenia relations, with study visits to Sweden, Latvia, Poland, the Netherlands and Russia. Most recently, she was a visiting fellow at Columbia University. Both her appointments at the Harriman Institute and the Davis Center for Russian and Eurasian Studies are funded by the Calouste Gulbenkian Foundation (Portugal) and the National Association for Armenian Studies and Research (USA).

“The Four Portraits of Het‘um II: New Observations on The Royal Portrait of the Lectionary of 1286” by Emma Chookaszian, Université Paul-Valéry (France)

Abstract: The subject of this paper is devoted to one of the most mysterious characters in the history of Armenian Kingdom of Cilicia - King Het‘um 2nd. A king who has never been coronated and became a Franciscan monk, never married and has been stoned by the Armenian historians. Anyhow, Het‘um acts as a commander of Manuscripts and is known to be a well-educated person who was a big connoisseur of Art. Discussed will be the 4 portraits of Het‘um, which represent the king in different ages. The portraits are preserved on different works of art, 2 of them on the pages of Manuscripts, on a 13th century silver reliquary, and the last one as a mural on the walls of

a Franciscan convent in Venice. In this paper we are going to show for the first time the discovery that we have made concerning the royal portrait in the Lectionary ordered by Het‘um 2nd in 1286, which is in reality showing the portrait of the Dynasty of the Het‘umids, beginning with Het‘um 1st (who was considered not to have a portrait of himself that has come down to us). Our discovery is based on the comparative analysis of all the portraits of Het‘um 2nd showing him in different ages and on the texts of the colophons of the contemporary manuscripts. This analysis permits making a psychological portrait of the Franciscan king and the better understanding of his tastes in art.

Emma Chookaszian is a doctor of medieval history and art history, a medievalist, and a specialist of Armenian art and miniature painting. She received her BA and MA degrees from Yerevan State University and her doctoral degree from Université Paul Valéry in France. Her dissertation was titled “The Iconographical, Historical and Theological Analysis of the Manuscripts Commanded by the First Three Kings of the Hethumid Dynasty.” She has received scholarships from the Government of France, the Calouste Gulbenkian Foundation, the Sirarpie Der-Nersessian Fund, and the AGBU.

“Armenian Paleography and Handwritten Armenian Character Recognition” by Chahan Vidal, École Nationale des Chartes (France)

Abstract: Armenian Paleography is a recent field of study, which emerged at the end of the 19th century with the Mekhitarist Y. Tashean. He, first, provided a truly detailed description of Armenian letters and an academic argument of their evolution. Many authors have since debated and enhanced his works : H. Ačarean (1928), A. Abrahamyan (1940, 1958, 1973), and foremost D. Kouymjian and M. Stone (2002) who turned their attention to 193 extracts of whole and dated manuscripts. However, they strictly focused on dated manuscripts. Yet, between the supposed invention of the Armenian script in 405 AD and the first complete and dated manuscript in 862, there is a time gap of more than 450 years. From this era have only subsisted lapidary inscriptions and fragments of manuscripts. Armenian Paleography's conclusions are suffering from this very gap. The uniqueness of my PhD research stands precisely on the study of those fragments of manuscripts, in order to cover this hiatus period, thanks to an overall vision of Armenian handwritten characters thanks to the databases of the Calfa.fr, and comparison with Latin paleography. This research aims several purposes. It is about, on one hand, bringing to light a new perspective on Armenian writing (a representation of the letters development, dating criteria for manuscripts, etc.). On the other hand, I intend to study purely paleographical criteria, enabling to streamline the specific problems of

handwriting automatic recognition. This PhD is based on a multidisciplinary approach, including fields of cognitive sciences and artificial intelligence.

Chahan Vidal-Gorène is pursuing a PhD in Armenian paleography at the École Nationale des Chartes with the support of Paris Sciences et Lettres Research University and the Calouste Gulbenkian Foundation. He previously studied mathematics at the Université Pierre et Marie Curie and Armenology at the Institut National des Langues et Civilisations Orientales. His fields of research include the evolution of Armenian handwriting, manuscript dating, and automatic recognition of handwritten characters.

“The Book of Whispers” by Dr. Prof. Varujan Vosganian, Famous Romanian Minister and Author

Abstract: The Ottoman Turks started the Armenian genocide in 1915, systematically exterminating 1.5 million Armenians during and after 1915. The *Book of Whispers*, though Armenian in subject, is equally set in southern Romania. Vosganian’s ancestors escaped the Genocide from western Armenia in 1915 and settled in Romania. Armenians have played a large role in the cultural history of Romania; the book is as much about Romania as Armenia and is translated into more than 20 languages, including English. This poignant work is a great homage to those Armenians who either did not survive the genocides or lost family and home, and how they coped (or did not cope). The central character is Garabet, Vosganian’s grandfather, whose suffering and storytelling eventually form much of the author’s own psyche. The book reads as a novel narrated both in the first and third person, but sometimes the author breaks form and speaks directly to his reader—a startling effect, to be sure. At times, *The Book of Whispers* can be a confusing read. “For me, the storyteller,” he admits, it is quite “hard to keep to the thread of the story.” Vosganian’s ethereal prose is at its best when describing wartime atrocities. It becomes a detached voice when grisly details are not spared. The sheer brutality of it all produces numbness in the reader. Perhaps detachment is the only way to endure such terror.

Dr. Varujan Vosganian was born in Craiova, Romania, in 1958. He is an Associate Professor in the Academy of Economic Studies. He received his Ph.D. in economics in 1998, from the Academy of Economic Studies, His MS in 1991 from the Faculty of Mathematics, and his BS in 1982 from the Faculty of Commerce, Academy of Economic Studies; all from University of Bucharest. Prof. Vosganian was the Minister of Economy (2012-13). He also served as Chair of Economic, Industries and Services Committee, Romanian Senate, Minister of Economy and Finance, Minister of Economy and Commerce, Chair



Budget, Finance, Banking and Capital Market Committee, Romanian Senate, Member of Council of Europe Parliamentary Assembly, Member of Senate and of the Chamber of Deputies. Dr. Vosganian has received numerous prestigious awards, such as: “Ordine della Solidarieta Italiana” awarded by President Giorgio Napolitano of Italian Republic, Medal “Movses Khorenatzi” awarded by President Serge Sargsyan of Republic of Armenia, Romanian Academy Award for the contribution to the development of Romanian science and culture, and many, many more. He serves as the Prime VP of the Union of Writers of Romania and is an honorary member or member of many other civic and international organizations, serving various responsible posts. He is a prolific writer of poetry, novels and article related to political, civic and humanitarian issues, as well as books in economics. His most publicized and well-known novel is *The Book of Whispers*, for which he has been nominated for the Nobel Prize, a splendid depiction of the Armenian Genocide.

Laudatio sent to the Nobel Prize Committee - Hebrew Writers Association in Israel, (among many others)
“Awarding the Noble Prize for Literature to Mr. Varujan Vosganian will be both a formal recognition of his special and rare literary gift, and a testimony and a remembrance of the Armenian genocide.”

“Women in Contemporary Armenian Society: Cultural and Socioeconomic Predicaments, and Opportunities for Empowerment” by Dr. Shakeh Kaftarian & Dr. Hasmik Khalapyan

Abstract: What is the status of women in contemporary Armenian society? What are some of the approaches to women’s empowerment that will give them a chance for meaningful participation and contribution in society? Dr. Hasmik Khalapyan will give a historical overview of “Woman’s Question” in Armenia from Soviet to post-Soviet times. She will discuss the debate and reformulations of the “traditional” views on women’s “proper” societal roles, and how the new national identity has informed the cultural, social and political status of women in the contemporary Armenian society. Dr. Shakeh Kaftarian will then present the results of her study about the status of women; their unfair and unequal treatment in all arenas of life; and their diminished role, participation, and value in family and society. A variety of empowerment approaches will then be discussed that are relevant to women from high-risk backgrounds; rural communities; and academic settings.

Hasmik Khalapyan, Ph.D., teaches Armenian History at the American University of Armenia. She is the Academic Director of AGBU Armenian Virtual College and Editorial Director of the Virtual College’s Multimedia E-Book

Series. After earning her MA from Miami University, she received her PhD in History from Central European University, Budapest, Hungary. She has carried out research in Ottoman history in archives and libraries in Armenia, Austria, France, and Turkey. Her research interests include concepts and histories of social change in local/global perspective; Ottoman history (19th and 20th centuries); women's movements worldwide in comparative perspective; theories and histories of empires and colonialism; gender and international law. She has been published in international journals and edited volumes in English, and has been translated into Turkish.



Shakeh Kaftarian, Ph.D., is a medical psychologist. She has served as research scientist on women's health and gender research at the National Institutes of Health of the U.S. Department of Health and Human Services; senior advisor at the White House Office of National Drug Control Policy; and research professor at the School of Medicine of the Uniformed Services University of Health Sciences. Recently she served as a Fulbright Scholar at the American University of Armenia, where she conducted research on the status of women of Armenia, and chaired an international conference titled "Empowerment of Girls and Women in Armenia."



"Icon Trafficking in Cyprus and Turkey" by Tasoula Hadjitofi

Abstract: One of the largest art trafficking cases since World War II will be presented and discussed. Tasoula Hadjitofi will present her new book, *The Icon Hunter*, and share the gripping story of "The Munich Case", incessantly pursued by this remarkable woman, which captivates any reader. She will also talk about similar phenomena in Turkey regarding Armenian iconic and heritage related artifacts in trafficking. This is a playbook to be used for eradicating the illegal practice of looted heritage artifacts and a step towards stopping cultural genocide. This inspiring and empowering book has been hailed by the famous author of *Eleni and Greek Fire*, **Nicholas Gage**, as follows: "In a memoir that reads like a high-stakes mystery, Hadjitofi struggles to find her rightful place in the world and return the religious treasures of her homeland to theirs. Along the way, her compelling personal tale illustrates the devastating cultural, historic, spiritual and moral consequences of illegal art trafficking".

Tasoula Hadjitofi was born in Famagusta, Cyprus. In 1974, she and her family were forced to flee their home due to the Turkish invasion of Cyprus and the outbreak of

war. Tasoula has served as the Honorary Consul of Cyprus in the Netherlands, and while holding this office she spent more than two decades recovering the stolen cultural and religious heritage of her homeland. She is the founder of *Walk of Truth*, a non-governmental organization, the mission of which is to raise awareness about the importance of preserving cultural heritage in conflict areas.



"Quest for the Future: Armenia Transformed" by Dr. Armen Baibourtian

Abstract: The national dynamics of the incredible and far-reaching political transformation in Armenia, the root causes leading to it, and the entire spectrum of factors fostering this in-depth process will be presented and discussed. The political power of moral imagination and its profound impact on the Armenian statesmanship will be highlighted. The analysis of the evolving context where visions for change emerged and the fortitude of the Armenian people manifested are going to be supplemented with projections for the future and the nation's rediscovered true identity.

Dr. Armen Baibourtian is a Professor of Political Science at U. Mass. Amherst since January 2014. He presently lives in Glendale, CA, and teaches online at U. Mass. Prof. Baibourtian holds two PhDs - in International Studies from Jawaharlal Nehru University (2010) and Modern World History from Yerevan State University (1990). He has also received graduate certification from Harvard and M.I.T. Dr. Baibourtian earlier combined his professorship with the job of Director of Administration at the Armenian Diocese in New York (2016-2017). He also worked as Senior Adviser to the United Nations Resident Coordinator & UNDP Resident Representative in Armenia (2008-2013). He taught for five years at the Center for European Studies at Yerevan State University. As Armenian diplomat, Ambassador Baibourtian served twice as the Deputy Foreign Minister of Armenia (1997-2000 and 2004-2008), simultaneously being the Chief Negotiator with the European Union. Along with the U.S. Deputy Assistant Secretary of State, he co-chaired the U.S.-Armenia Security Dialogue. Ambassador Baibourtian also co-chaired bilateral Inter-governmental Cooperation Commissions with China and India. He became the first Armenian Ambassador in India and, concurrently, Nepal, Sri Lanka, and Indonesia (2000-2004). He was also Deputy Permanent Representative to the UN in New York (1993-1995) and the first (1995-1997) and current Consul General in Los Angeles.



«Հայրենիք ծագումով հայ Արբասեան Խալիֆաներու շրջանին» Պետրոս Թովմասեան

Ամփոփում Արբասեան Խալիֆայութիւնը (750-1258) կը համարուի Միջին Արեւելքի ժողովուրդներու պատմութեան կարեւոր պատմաշրջաններէն մէկը: 37 խալիֆաներէն շատերուն մայրերը Պարսիկ, Թուրք, Յոյն, Հաբէշ, Վրացի, Ռուս էին: Արաբական աղբիւրներու համաձայն՝ Արբասեան խալիֆաներէն երեքին մայրերը հայուհիներ էին: Խալիֆաներու պատմութիւնը, իրենց կատարած կարեւոր աշխատանքները եւ անոնց կապերը Հայաստանի եւ Հայ Ժողովուրդին հետ ներկայացուեցաւ: Յիշեալ Արբասեան խալիֆաներէն երեքին՝ Ալ-Վալըմ (1031-1075), Ալ-Մուկթադի (1075-1094), Ալ-Մուսթադիը (1170-1180), կ'ակնարկենք որպէս «Հայկական Ծագումով Արբասեան Խալիֆաներ»: Պիտի պարզուի չորրորդի մը ծագումը՝ ալ-Մուսթադիը (1094-1118), որ ալ-Մուկթադիի զաւակն էր. թէեւ անոր մայրը հայուհի չէր, սակայն ան իր մէջ հայկական արիւն ուներ: Տակաւին հինգերորդ մը եւս ալ-Նաս ր (1180-1225), որ ալ-Մուսթադիըի զաւակն էր: Հայոց Պատմութեան բազմաթիւ խոսքերէն դաշտերէն մէկուն մէջ քաղելով, չբացուած եւ չուսաբանուած կէտեր ներկայացուեցան:

Պետրոս Թովմասեան Ծնած է Իրաքի Բասրա քաղաքը 1954-ին: 1971-ին աւարտած է Բաղդադի Հայոց Ազգային Միացեալ Երկրորդական Վարժարանը եւ 1976 աւարտած Բաղդադի Համալսարանի Երկրաչափական բաժանմունքը եւ ստացած է Պսակատր Գիտութեանց: 2012-ին հետեւած է Երեւանի Պետական Համալսարանի Պատմութեան ամբիոնի Մագիստրոսական դասերուն: Դասաւանդած է պատմութիւն Իրաքի, Յորդանանի, ԱՄՆ-ի եւ Բրիտանիոյ մէջ: Հեղինակն է «Անցեալին Այս Օրը» յօդուածաշարքին, «Հայկական Լեռնաշխարհը եւ Միջագետքը (հին ժամանակներէն մինչեւ 1 թ. Ք.ե., Երեւան, Զանգակ, 2006) «Արարատ Ուրարտու Աստուածաշունչի Ընդմէջէն» (Երեւան, Զանգակ, 2012), «Արբասեան Խալիֆայութեան Վերջին Պատմաշրջանը եւ Հայրենիքը» (991-1258 թթ, Երեւան 2016). եւ «Վարագավանքը Պատմութեան Քառուղիներուն» (Երեւան 2018):



“ARMENOPOLIS: The Armenian/Romanian City Built by Armenians” by Garo Mergegian

Abstract: A film about a city erected in Romania during early 17th century by Armenians who had arrived from Crimea (via Moldova). Armenopolis, present day Gherla, erected its Solomon Church, the Karatsony House, the City Hall, the orphanages, the high school and the park. Armenopolis-Gherla houses are more than 250 years old. This documentary film is about this Baroque city, its authentic museum, a place designed for the future, for family, with love and passion. Directors: Izabela Bostan Kevorkian and Florin Kevorkian.

Garo Mergegian was born in Bucharest, Romania, from survivors of the Armenian genocide. Garo received his higher education at the Academy of Economic Sciences and got a degree in international trade and marketing. During the 1970s Garo came to the Americas with his parents. Garo was manager of ITT Cannon – Connectors Commercial Division, and for the last 30+ years he is the Regional Sales Manager for a company based in Brugg, Switzerland, in the manufacturing and sales of machine tools for various industries, including the aerospace industry. He is fluent in seven languages.



«60-թ զարթօնքը: Մարտիրոս Սարեան և Մինաս Ավետիսեան» Ռուզան Լազարի Սարյան

Ամփոփում 1962-ին կայացաւ սովետական նկարիչների և քանդակագործների ցուցահանդէսը Մոսկվայի Մանեժում: Մասնակցող արվեստագետների հանդէպ կիրառվեցին հետապնդումներ: Մտավորականներ գրեցին Խրուշչովին, պաշտպանելով արվեստագետների ազատ ստեղծագործելու իրավունքը, սակայն իզուր: Անհնազանդները, հայտնվեցին ոչ բարենպաստ պայմաններում, իրավունք չունենալով երկրից դուրս գալ և այլն: Խօսուեցաւ Մարտիրոս Սարյան և Մինաս Ավետիսյան արվեստագետների միջև գոյություն ունեցող ներքին խոր համակրանքի և փոխադարձ հարգանքի մասին, Մարտիրոս Սարյան մեծագույն երևույթի մասին, նրա անցած ուղու, պայքարի և հաղթանակի մասին: Ներկայացվեց նրանց բարեկամության մի քանի փաստեր, հուշերի պատասխիկներ: Դասախոսության ավարտին ցուցադրվեց «Մարտիրոս Սարյան» վավերագրական ֆիլմը, որը նկարահանվել է 1965 թվականին ռեժիսոր Լաերտ Վաղարշյանի կողմից: Այս ֆիլմը պատմում է պայքարի և հաղթանակի մասին: Այսօր, վերջապէս, երկար պայքարից հետո Մ. Սարյանի տուն-թանգարանին հաջողվեց ձեռք բերել այս հրաշալի ֆիլմի տարածման և հանրահռչակման իրավունքը:

Ռուզան Լազարի Սարյան Բանասեր, արուեստաբան, բանասիրական գիտութիւնների թեկնածու 2014 թվականից: Մարտիրոս Սարեանի տուն-թանգարանի տնօրէն 2004 թուականից: 1981-1994 թթ, եւ 1999 թ. մինչ այսօր աշխատում է ՀՀ ԳԱԱ Արուեստի ինստիտուտի կերպարուեստի բաժնում որպէս աւագ գիտաշխատող: Դասախոսութիւններով հանդէս է եկել Սորբոնի, Լոս-Անջելէսի (UCLA) համալսարաններում, 2003 թուականից աշխատել է Սարեանի տուն-թանգարանում որպէս փոխտնօրէն, իսկ 2004 թվականից տնօրէն: Կազմակերպել է Մ. Սարյանի բազմաթիւ ցուցահանդէսներ: Հրատարակել է բազմաթիւ աշխատութիւններ, գրքեր, կատալոգներ եւ պլոններ: Արժանացել է Ֆրանսիայի



Հանրապետության Արուեստի եւ գրականության
ասպետի շքանշանին:

“Armenian-Syriac Cultural and Literary Relations In the Armenian Kingdom of Cilicia During 12th-14th Centuries” by Onnik Kiremitlian

Abstract: The large influx of Armenians into Cilicia due to the Seljuk-Turkic invasions of Greater Armenia, as well as the Byzantine coercions during the 11th century put the Cilician Armenians in close contact with the Syrians. The latter supported the Rubenid Armenian hegemony over Cilicia and its wresting from the domain of Byzantine influence. Close cultural and translation activities developed and flourished between these two churches. Notable figures in this period are Catholicos Gregory II the Martyrophile († 1105), Catholicos Nerses IV the Gracious († 1173) champion of Church unity, the erudite polyglot Nerses Lambronatsi († 1198), as well as the prolific scholar Vardan Areveltsi († 1271). Works of inestimable scientific, historical, literary, and theological value were put into circulation, but the Syriac originals of some of these survive only in Armenian. Recent manuscript studies show that there are literary and theological works, such as those by Marutha of Tagrit that were most probably translated from Syriac into Armenian, part of which did not survive in Syriac. Important translation works, the scholars, their translation methods, their importance for the mediaeval world and relevance today were presented. Syriac works translated into Armenian surpasses in volume and scope those of the Armenian “Golden Age” of the 5th-6th century literature.

Onnik Kiremitlian is from Beirut, Lebanon. He is a graduate of the Gevorkian Theological Seminary of Ejmiatsin, Armenia, and holds graduate and postgraduate degrees in Biblical Studies and Languages, Theology and Patristics from the London University in UK. He is currently a doctoral student in the Oriental Institute of the Catholic University of Louvain, Louvain-la-Neuve in ancient philology, languages and literatures, and is in the final phase of defending his doctoral thesis. The topic of his thesis is on the Armenian and Syriac works of the 7th century Syriac church father Marutha of Tagrit. His areas of interest are primarily in Armenian-Syriac literary, cultural, and ecclesiastical relations, and also mediaeval literature and theology of the Christian East (in the Syriac, Coptic, Arabic, and Ethiopic traditions), as well as Armenian Christianity.



“How Armenia Can Cycle and Scoot Its Way To Prosperity” by Terenig Topjian

Abstract: In the most unlikely turn of events, Armenia, plagued with decades of corruption, emigration, high unemployment, and economic blockades, danced its way to a revolution in a matter of weeks. For anyone familiar with the country, this phenomenon was a near miracle. Yet, after the initial euphoria subsides, Armenia will need a series of miracles if it is to survive and thrive given its frail geopolitical and economic situation. As unlikely as dancing was to a political revolution, so can cycling be for an economic revolution. Over the past few years, the humble bicycle has begun evolving into a whole new class of vehicle: micromobility. Investigations into urban design and mobility have shown the automobile to be an extremely inefficient, expensive, and harmful mode of transportation that takes a heavy toll on people, cities, and the planet. So, can Armenia leverage micromobility to foster a brand new economic sector and gain energy independence?

Terenig Topjian received his BA from Cal State Northridge in 2008, where he studied Graphic Design and Marketing. In 2012, he completed the world’s largest technology accelerator, the Founder Institute, as a Top Graduate. Since then, he has worked in various technology startups. Today, he is the founder of *Have A Go*, whose mission is to transition the way we move in our cities away from expensive, polluting, deadly, stressful, and anti-social modes of transportation to fun, safe, accessible, affordable, extremely sustainable, and healthy modes of mobility. Having learned to ride a bicycle at the age of 3 and being allowed by his parents to ride unsupervised on the streets of Khobar, Saudi Arabia and Glendale, California, the bike offered him freedom, independence, and neighborhood exploration. This is in stark contrast to the larger reality of Los Angeles, where convenient mobility is limited to only those who can afford an automobile, can legally drive, and are physically capable of operating a car.



“A Tribute to Those Who Perished, Gyumri: 30 Years of Challenges and Recovery” by Gegham Mughnetsyan

Abstract: 30 years ago, on December 7, 1988, Gyumri, as well as the whole northern region of Armenia, were struck by a powerful earthquake, leaving behind 25,000 dead and thousands disabled and homeless, thus paralyzing the region. During the past three decades the recovery effort has been very slow. The whole area and, especially, Gyumri are still bearing the scars of the quake. Several issues, right at the onset, the immediate aftermath and even decades following the quake, have created serious

challenges for recovery. The larger geopolitical shifts, on the other hand, complicated the process further and created a juggernaut in need of serious strategic approaches. The presentation shed light on some of the past, present, and ongoing challenges and how these challenges make it harder to smooth out the catastrophic effects of the tremors and their detrimental impact on the course of life in the city, the region, and the whole country.

Gegham Mughnetsyan was born in Gyumri in the aftermath of the earthquake and some years later his family emigrated to the United States while he was still in his teens.



Gegham is a researcher at the University of Southern California Institute of Armenian Studies. His primary interest includes post-Genocide Armenian Diaspora, present-day Republic of Armenia and Nagorno Karabakh. Mughnetsyan earned his undergraduate degree from the University of California, Berkeley, majoring in Peace and Conflict Studies, with a focus on US foreign policy toward Nagorno Karabakh (Artsakh), and his Master’s Degree from the American University in Washington DC in International Affairs, focusing on global governance, politics and security.

ՆԱՆՕՏԵՒՆՈՒՈՒԳԻԱ ՀԱՅԱՍՏԱՆԻ ՀԱՄԱՐ

ԱՐՓԱ Հիմնարկը տարիներ է իվեր կը սատարէ Հայաստանի գանազան Հիմնարկներուն, նուիրելով կարելոր սարքաւորումներ եւ գիտահետազոտական գործիքներ՝ ինչպէս Համալսարաններուն եւ ՀԳԱԱ-յի Մոլէկուլային Կենսաբանութեան, Ֆիզիկայի, Ֆիզիքական Քիմիայի, Ֆիզիքական Հետազոտութիւններու Ինստիտուտներուն: Տակաւին Դեկտեմբեր 2018-ին Shimadzu UV 1800 Photo-spectrometer մը տեղադրուեցաւ Աշտարակի Ֆիզիքական Հետազոտութիւններու Հիմնարկին որպէսզի կատարեն կարելոր գիտական ուսումնասիրութիւններ: Հիմնական նպատակ որպէս, ԱՐՓԱ Հիմնարկը յատուկ առաջարկութիւն ներկայացուցած է ՀՀ Գիտութեան եւ Կրթութեան Նախարարութեան որպէսզի Հայաստանի մէջ կատարուի Feasibility Study Նանօտեխնոլոգիայի գիտահետազոտական եւ արտադրական կեդրոն մը ստեղծելու նկատմամբ: ԱՐՓԱ Հիմնարկը կը հաւատայ որ այս (Նանօ-տեխնոլոգիան) ամենանոր հետազոտական եւ տեխնոլոգիական մարզը, կրնայ շատ կարելոր յառաջիսադաջ արձանագրել ՀՀ գիտա-տեխնոլոգիական ապագային: Այս մարզը կը ներառնէ եւ կօգտագործէ գրեթէ բոլոր գիտական մասնագիտութիւնները եւ գիտութիւններու հիմունքները: Այս գիտական մօտեցումով ապագայի ամենանոր մօլէկուլային չափի սարքերն ու ամենա զօրաւոր եւ ինքնայատուկ նիւթերը պիտի կարելի ըլլայ ստեղծել: ԱՐՓԱ-ի յառաջիկայ աշխատանքները կը կարօտին հսկայական ծրագրաւորումի, մեծ գործակցութեան եւ օգնութեան ու, ամենակարելոր մեծածախս զումարներու, որուն համար աշ-

խարհի բոլոր հայերուն նիւթական եւ բարոյական օգնութեան կարիքը ունինք: Սատարեցէք մեր գործունեութեան եւ միացէք մեզի որպէսզի յաջողինք Նանօ-Տեխնոլոգիայի արդիական կեդրոն մը ստեղծել Հայաստանի մէջ:

Shimadzu UV 1800 Սպեկտրաֆոտոմետրի ՀՀ ԳԱԱ Ֆիզիկական հետազոտությունների ինստիտուտում տեղակայման և օգտագործման հիմնավորումը

Խառնուրդային իոններով ակտիվացված պինդմարմնային լազերային ակտիվ և ոչ գծային բյուրեղների, սցինտիլյացիոն բյուրեղների, կառուցվածքավորված բարակ թաղանթների և նանոկոմպոզիտների, ինչպես նաև հեղուկ և գազային միջավայրերի սպեկտրադիտական հատկությունների մանրակրկիտ և համալիր ուսումնասիրությունները Ֆիզիկական հետազոտությունների ինստիտուտի (ՖՀԻ) հիմնական ուղղություններից են:

Բացի մշակված նյութերի համապարփակ հիմնարար հետազոտությունների կատարումից, որի ուղղությամբ ստացված արդյունքները հաջողությամբ տպագրվում են տեղական և միջազգային գրախոսվող ամսագրերում, այս ուսումնասիրությունները նպատակ ունեն զարգացնել ինստիտուտում աճեցվող մարդու և լեզրված բյուրեղների, սինթեզված կառուցվածքավորված թաղանթների, նանոկոմպոզիտների և նանոկառուցվածքների կիրառությունները՝ ֆունկցիոնալ նոր հնարավորություններ ընձեռող նյութերի, տվիչների և սարքերի մշակման համար:

Shimadzu UV 1800 սպեկտրաֆոտոմետրը, որն աշխատում է ուլտրամանուշակագույն, տեսանելի և մոտիկ ինֆրակարմիր սպեկտրային տիրույթներում (190-1100 նմ), թույլ կտա ժամանակակից սարքավորման միջոցով վերոնշյալ հետազոտությունները իրականացնել սեղմ ժամկետներում՝ միաժամանակ ապահովելով ստացված տվյալների հավաստիությունը և ճշգրտության բարձր աստիճանը:

Shimadzu UV 1800 սպեկտրաֆոտոմետրը ՖՀԻ-ում տեղակայելու դեպքում այն լայնորեն և անսահմանափակ կօգտագործվի ոչ միայն ինստիտուտի մի շարք գիտական լաբորատորիաների կողմից՝ գիտատեխնիկական և կիրառական աշխատանքներ կատարելու համար, այլև կօգտագործվի ՖՀԻ-ում իրականացվող գիտակրթական ծրագրերում, ինչպես նաև անհրաժեշտ հետազոտություններ կատարելու հնարավորություն կտրվի ՀՀ այլ գիտական և գիտակրթական կազմակերպություններին:

Նշենք, որ նման սարքի (Varian ընկերության Cary 5000 UV-Vis-NIR սպեկտրոֆոտոմետր) ձեռքբերման համար ՖՀԻ-ն վերջին տարիներից երկու անգամ հայտ է ներկայացրել ՀՀ ԿԳՆ Գիտության պետական կոմիտեի հայտարարած սարքավորման ձեռքբերման մրցույթներին, սակայն չի ստացել ֆինանսավորում: Այդ հայտերում որպես հնարավոր համատեղ օգտագործման շահագրգիռ կազմակերպություններ են հանդիսացել ՀՀ մի շարք գիտական կազմակերպություններ և բուհեր՝ ԵՊՀ, ԵրՖԻ, ՖԿՊԻ, ՌՖԵԻ, ՀՊՄՀ:

ՀՀ ԳԱԱ Ֆիզիկական հետազոտությունների ինստիտուտի տնօրեն՝ Ա. Պապոյան

23 նոյեմբերի 2018թ.

ARPA Institute has been helping the universities and the Academy of Sciences of Armenia acquire key instruments and laboratory equipment to advance science and technology in Armenia. Thus, ARPA has provided the Institute of Molecular Biology, the Institute of Physics, The Institute of Physical Chemistry, the Institute of Physical Research, the Polytechnic and others with important research and development instrumentation and laboratory equipment, helped train experts and, through our “Distance Learning Program”, organized numerous online and local presentations by experts to transfer the latest developments and knowledge in various fields. The newest initiative is to establish a Nano-technology R&D Center in Armenia. To achieve this, we have written a technical proposal that will be sent to either the Asian Development or the European Bank for Restructuring and Development for a feasibility study in this regard. We believe that Nano-Technology is very important for Armenia in its future

economic and technological development, since it requires knowledge from essentially all fields of science for its advancement. Currently there are a couple of dozen scientists who work in Nano-Technology and they need our help. To make this initiative a success we will need the help of as many experts as possible and as many philanthropists as possible, for the instrumentation required for such a R&D center will be in the millions of dollars. So, please let us know if you would like to help in any way you can.

ԱՐՓԱ հիմնարկը, ԱՄՆ

և ԱՅԼԸՆՏՐԱՆՔ հետազոտական կենտրոնը, ՀՀ

Հոկտեմբեր 26, 2018-ին

Կլոր սեղանի շուրջ քննարկում
Մարիոթ – Արմենեյ հյուրանոց

Տնտեսապես անվտանգ և մրցունակ Հայաստան.
մարտահրավերներ և հնարավորություններ

Կարծիքներու փոխանակում կատարուեցաւ, մասնագէտներու կողմէ, Հայաստանի տնտեսութեան տարբեր ճիւղերուն կայունութեան եւ զարգացման նկատմամբ անհրաժեշտ քայլերու եւ բարեփոխումներու անհրաժեշտութիւնը շեշտելով: Կրթութեան, արժուրթային, շուկայական, արդիւնաբերական, հետազոտա-նորարարական եւ գիտա-տեխնոլոգիական ոլորտներու հիմնական վերատեսութեան եւ ուսումնասիրութեան խիստ կարեւորութիւնը ընդգծուեցաւ: Կը խնդրենք այցելէք յետևեալ ցանցը <https://youtu.be/brCAKvzGwiM> վիտիոյի համար:

Քննարկմանը մասնակցեցին

Յակոբ Փանոսեան – ԱՐՓԱ հիմնարկի նախագահ

Թաթուլ Մանասերյան – Այլընտրանք հետազոտական կենտրոնի ղեկավար

Կարեն Վարդանյան – Տեղեկատվական տեխնոլոգիաների միության նախագահ

Ա. Միսյան – Հայաստանի արտահանողների միության նախագահ

Երվանդ Թարվերդյան – Սարգիս Կարողինա ընկերության նախագահ

Գագիկ Մակարյան – Հայաստանի գործատուների միության նախագահ

Գագիկ Աբրահամյան – Ջեյ Սի Էյ ընկերության նախագահ

Վարդան Արամյան – ՀՀ ֆինանսների նախկին նախարար

ՀՀ Գյուղատնտեսության նախարարության ներկայացուցիչ

ՀՀ Տնտեսական զարգացման և ներդրումների նախարարության ներկայացուցիչ

ՀՀ Կենտրոնական բանկի ներկայացուցիչ

ՀՀ Վարչապետի աշխատակազմի ներկայացուցիչ
ՀՀ Արտաքին գործերի նախարարության ներկայացուցիչ
Անահիտ Սիմոնյան – ՄԱԿ-ի Արդյունաբերության զարգացման կազմակերպության ՀՀ ներկայացուցիչ
Արժույթի միջազգային հիմնադրամի ներկայացուցիչ
Համաշխարհային բանկի ներկայացուցիչ
Մամվել Ավետիսյան – տնտեսագիտության դոկտոր, պրոֆեսոր
Արման Մարտիրոսյան – տնտեսագիտության դոկտոր
Գագիկ Վարդանյան – տնտեսագիտության դոկտոր, պրոֆեսոր
Սարգարիտ Եղիազարյան – տնտեսագիտության թեկնածու, դոցենտ
Արմեն Օրուժեան, FAST Կազմակերպութեան Գործադիր Տնօրէն
Յավհաննէս Ղազարեան, ՄԱԿ-ի Ներկայացուցիչ

**Trip Report on ARPA Activities in Armenia
September-October 2018**

Report By Hagop Panossian

Every year, Dr. Hagop Panossian travels to Armenia to take care of ARPA Institute business. The following Trip Report summarizes the important discussions and meetings:

September 23, 2018

I had a meeting with Aram Manukyan of the Ashtarak Physical Research Institute. He had a request for an instrument that will provide him with a high-pressure environment for his production of nano particles. I suggested to him to write a proposal to ARPA describing his need and applications.

September 25, 2018

The Invention Competition Awards Ceremony took place in the National Polytechnic University of Armenia. There were around 25 attendees. Two teams were absent for some reason. The Deputy Minister of Education and Science, Hon. Hovhannes Hovhannisyan, handed out the certificates and awards. He also gave a speech, whereby he congratulated the winners and everyone for their participation, as well as thanked ARPA for organizing such an important event for Armenia.

September 26, 2018

A meeting was held with Dr. Aram Hajjian, the Dean of the Zaven & Sonia Akian School of Engineering of the American University of Armenia (AUA), Dr. Amalya Kostanyan, Professor of Nanotechnology at AUA, and Dr. Mikael Aznauryan, the Director of BioPhysics Lab in the University of Bordeaux in France. Discussed were the possibilities/options for establishing a nanotechnology

research and development center in Armenia and the potential for having it at AUA. Although, in principle, Aram was for such an endeavor, he argued that it needs to be justified as a high priority project in order for the AUA Board to consider it. However, they all recognized the importance and the significant impact it could have on scientific research in Armenia, if organized, instrumented, and maintained properly.

September 28, 2018

1. A meeting was held in the office of the Union of School Cluster (USC) of Armenia on Tigran Medz. Present were Ms. Ruzanna Muradyan, Member of Parliament, and her secretary, Armine. Discussed was the wide scale implementation of Science Fairs in schools in Armenia. I informed her that I will be meeting with the Minister of Education & Science of Armenia and that I will try to get his approval and cooperation. She suggested that the USC is ready to help if asked to do so.

2. A meeting was held in the offices of the Fund for Armenia Science and Technology (FAST) in the Mergelian complex near Baregamoutyoum Circle. Present were Amalya Kostanyan, Mikael Aznauryan and myself from the ARPA side and Armen Orujian, the Executive Director of FAST. The nanotechnology R&D center in Armenia was discussed and questions such as “how can we prove that nanotechnology is the right technology of the future and it will not fizzle away in a few years” was raised. Questions on the organizational structure, location, administration, etc. were discussed. However, no clear suggestions were brought forward. Armen suggested to have a round-table discussion with his team of experts and discuss the issues involved.

September 29, 2018

I met with Avetik Kerobyan, head of the new Razmartiunaperoutyan Gomide. Discussed were options to help them.

October 1, 2018

1. The Robotics and Drones Laboratory of the National Polytechnic University of Armenia was visited upon the invitation of its Director, Prof. Oleg Gasbaryan. The laboratory has a couple of students who will be trained to work on the donated model helicopters and learn the development of software to control the drones. Prof. Naira Hovakimyan is a member of the Board and helps develop programs to advance the drone technology in Armenia. Oleg showed a video that described the various features of drones/robots that will be explored and used for training students.

2. I visited TUMO and toured all its different labs and activity centers. A meeting with TUMO Board Member Pegor Papazian was arranged and discussed were ARPA activities and the prospect of developing a promotional

video that will be used to teach students and teachers in Armenia the process of organizing and implementing Science Fairs in all schools in Armenia. Aram Gyumishyan was assigned to lead the effort and it was suggested to have a video-conference with him in order to discuss the details.

October 2, 2018

A meeting with the Minister of Education and Science of Armenia had been scheduled earlier. However, due to an emergency meeting, ordered by Prime Minister Pashinyan had forced Minister Arayik Harutyunyan to postpone the meeting at the last minute.

October 4, 2018

Our Armenia Board Member, George Tabakian, drove us to the Berkaber Village in the Davush region, north-east Armenia, where ARPA Institute had sponsored 4 villagers to start their own small businesses. Berkaber is located right at the border with Azerbaijan, where a part of the land of the village was occupied by the enemy in 1994 and is still held hostage. The line across the middle of the small lake right at the border divides the two countries and there is constant sniper attacks on the village. The first individual who was working on developing and selling mushrooms, Edgar Abazyan, showed us his small facility and the way he has organized his business, as well as the containers in which he packages the mushrooms and takes them to the market. The second business was the “Hydroponics” production of tomatoes by Hakop Vardanyan. Two plastic pipes of 5-in diameter is being used with similar sized holes on its upper side, small planters with natural pot soil is placed in these holes and tomato seedlings are planted in the pots. Drip system irrigation is installed and the tomatoes grow with natural feeds. The third business visited was the two orchards of persimmons planted by Vahe Alikhanyan. The trees have already grown to about two feet tall and seem to be well taken care of. It is expected to produce fruit in a couple of years. The final small business visited and videotaped was the tailor shop owned by Sonya Khudaverdyan. She worked in a small room with three sewing machines, where she and her two new employees were sewing seat covers for a restaurant. She was very happy and thankful for ARPA’s donation. She promised to work hard and hire even more employees to create new jobs in the village and train young women the trade of sewing.

October 5, 2018

1. I visited the DIGITEC annual Expo and made sure that the “Innovation, Invention and Entrepreneurship” seminar was scheduled and the hall was ready.

2. A meeting was held with the head of the Science Committee of Armenia, Dr. Samvel Harutunyan, in his office on Orbely avenue. Discussed were ARPA activities

in Armenia, especially the Nano-Technology initiative. He indicated that the U.S. State Department has allocated more than \$10 million for the advancement of education and research in Armenia, which included purchase of important instruments. I suggested to him to make sure that in their list of demands for instrumentation a high resolution Electron Microscope is included. He promised to add that on their list. He expressed great enthusiasm and promised to make sure that facilities will be provided and may be even participate in the purchase of instruments and equipment for the Nano-Facility. Also discussed was the water irrigation pipeline repair project and he promised to write an invitation to Prof, Karl Ulrich Rudolph of Germany to come to Armenia and present a workshop to teach the local engineers the steel-pipe internal coating technology, so that they can perform the repairs. We will meet with the Head of the Water Resources Board, Ms. Inessa Gabayan, to get her approval for such a project from the Government of Germany.

October 6, 2018

The “Innovation, Invention and Entrepreneurship” seminar was held in the second hall on the third floor of the Mergelyan Institute during the DIGITEC Expo. Hrachoohi Boghossian of the ARPA Board presented the main subject, followed by Ms. Lilit Khachatryan, a lawyer in Armenia, who presented the legal aspects of forming a startup and the Intellectual Property Rights in Armenia. An excellent discussion on starting a new business in Armenia was presented by Vahagn Poghossyan, the Chief Technologist and Co-Owner of Instigate Armenia. At the end, Hovhannes Adonts and Lilit Ayyvazyan, the two second-place winners in the ARPA Institute’s annual Invention Competition, presented their innovations. There were over 40 mostly young attendees who showed a great deal of interest with their questions and comments.

October 7, 2018

1. A round-table discussion was held on the ARPA Institute Nano-Technology initiative in the new office of FAST at the Mergelyan Institute, with the Executive Director of FAST, Armen Orujian and 4 representatives of his team of experts. Also participating were Hrachoohi Boghossian and myself from ARPA, Amalya Kostanyan of AUA and Mikael Aznauryan of the University of Bordeaux in France. The discussions led to question on the appropriateness of adopting nano-technology for Armenia and the ways and means of including nano-technology in the FAST master areas of Science. It was agreed that it is a part of “Materials Science”, which is one of their main areas; however, the mechanisms that are required to include it are not developed yet. It was suggested to have FAST send ARPA their template for proposing a new initiative and ARPA submit a proposal to FAST for consideration.

2. A meeting was held with Tatoul Manaseryan, the head of Alternative Research Center of Armenia, and the economic situation of Armenia was discussed. It was agreed to organize a round table discussion on the general subject of “Economic Development of Armenia, Challenges and Opportunities”. It was decided to invite 25-30 leading experts, economists and Government representatives to present their short analyses and suggestions, which will then be conveyed to the proper individuals and broadcast on video.

3. A “Hightech-Nano” meeting was attended, which turned out to be organized solely by Prof. Gagik Shmavonyan of NPUA, with the objective of starting a new society of nanotechnology. This would be under the umbrella of the Union of Information Technology Enterprises (UITE). Karen Vardanyan, the Executive Director of UITE, had given his blessing. However, none of the nanotechnology experts in Armenia were consulted beforehand. I was the one sending out the invitations to our team of nanotechnologists. Gagik was criticized by virtually all present, including his professor (under which he had studied in his early years) who told him that it is inappropriate to start such an organization without consulting the right people. I, in turn, agreed with prof. Panossyan and suggested that he should have started by first consulting all the people who are in any way involved with nanotechnology, had received their consent and blessing, and then started the organizational matters. Now, they are placed in an unusual situation to approve an already formed bylaws and a board.

October 8, 2018

A meeting was held with the Minister of Education and Science of Armenia, Hon. Arayik Harutyunyan. ARPA activities were presented, including the past and present initiatives and programs, and the annual Invention Competition, the Distance Learning Program, and cooperation with the universities and the National Academy of Science of Armenia were stressed. Also, the Nano-Technology initiative and the implementation of Science Fairs in schools in Armenia were introduced. He suggested the development of plans and conceptual frameworks together with the ministry in order for the ministry to work with us. As for the Science Fairs, he was informed that ARPA already implemented the program by training 24 school teachers, with the help of the head of the School Clusters in Armenia, Ms. Ruzanna Muradyan, whereby a Science Fair was held in the National Academy of Sciences, main building, and selected judges interviewed students and the best four were given awards. He indicated that it would be better if the ministry organizes the training and the fairs and promised to meet with me once more and discuss the details.

October 9, 2018

1. A meeting was held at AUA with Aram Hajian, the Dean of the School of Engineering, Amalya Kostanyan, the new full time professor on nanotechnology at AUA, and Mikael Aznauryan, the young scientist who was a professor in a university in Denmark and now is moving to Bordeaux, France, to develop his physical chemistry lab on nanotechnology. We had worked with Mikael last year and tried to convince him to move to Armenia and start a nanotechnology lab, but it did not work out. Discussed were the various options of creating the nanotechnology center and providing instrumentation and equipment for it, to make sure all scientists in the field who live in Armenia can utilize them according to some preset rules and regulations. Once again, the question of whether the GoA will consider nanotechnology as a field of high priority for Armenia was raised. The answer given was that, it being a multi-disciplinary field, which is advancing very quickly in the world, would not only serve the nanotechnology scientists but will also be an important asset for all physicists, chemists and the like, as well as provide a good teaching/training environment for university. Two options are possible: if funds are found through AUA to help purchase the right instrumentation and provide the facility and maintenance, with the help of ARPA, then it will be best to have the center at AUA and develop a special arrangement for the use of the facility by outsiders who are doing research. On the other hand, if the GoA provides the most important instruments, like a high-resolution microscope, and the facility, then it is appropriate to have the center in a Government facility. Then the GoA will be the responsible body to operate and maintain the facility.

2. A meeting was held at the National Polytechnic University of Armenia (NPUA) in the Rector's Office with Prof. Vostanik Maroukhyan. Discussed were the invention competition and why there only was one invention from NPUA, as well as how it can be distributed/advertised more efficiently. His suggestions were: they need to make sure all students are aware of it and have the professors encourage the students to participate. As for a nanotechnology center, his suggestion was that, if we want a facility that will be used by all the different organization in the country, it will be better to place it in a neutral location with a special administrative system. He encouraged increasing the number of on-line seminars and on a wider range of topics.

October 10, 2018

I visited Prof. Zhozeph Panossyan of the NPUA in his lab. Discussed was the "High-tech Nano" initiative. He was of the opinion that no evidence of any novel approach or even technological achievements was presented. His suggestion was to not take the initiative seriously.

October 11, 2018

A meeting was held with Kadjazen Toumanian, the expert from Germany who wants to repair the water irrigation pipeline in Armenia. His new approach is to get an invitation from the Science Committee of Armenia, Dr. Samvel Haroutunyan, addressed to the ministry of Education in Germany, inviting Prof. Karl Ulrich Rudolph of Witten, Germany, the expert in water systems, to give a workshop in Armenia to teach the local scientists/engineers the technology of pipeline repair and water works. The approach he proposes will be to work in partnership with the Armenian Tree Project to develop a several hectare tree plantation and to implement the new repair technology as a pilot program. If that convinces the GoA successfully, then the pilot project, which was started several years ago to repair 10 kilometers of the pipes in the Ararat region of Armenia, can become a reality. After that, a proposal would be sent to the EBRD to fund the repair of the complete pipeline system in Armenia. To that end, we will meet with the head of the water resources in Armenia, Ms. Inessa Gabayan, next week to try to get her approval.

October 12, 2018

1. A meeting was held in the Ani Plaza Hotel with the former Minister of Economy, Ardzvig Minassyan, and his advisor, Areg Gharabegian, to discuss the pipeline repair initiative. Kadjazen described the approach and presented some documents to try to get their feedback. Their response was to review the proposed initiative and then give us feedback.

2. A meeting was held with Maro Aghazarian, Hrachoohi Boghossian, Nazareth Seferian, and George Tabakian, our Board Members in Armenia, in the Melody Cafe. Discussed were the nanotechnology initiative, the Science Fairs issues, the pipeline repair, the micro-funding businesses and the various meetings. The suggestions were that Hrachoohi, Maro, and I should meet to evaluate the Science Fairs issue and try to come up with resolutions. For the nanotechnology center, the consensus was to create the center in a location where the maintenance and use of equipment are performed very well. Moreover, a proposal was made to establish legal mechanisms to ensure the use (free or with a symbolic charge) of the equipment and tools by all parties involved.

October 13, 2018

Arthur Harutunyan, the representative of the Armenian Tree Project (ATP) in Armenia, drove Kadjazen and I to Ashtarag, where one of the nurseries and the educational center of ATP is located. Arthur gave us a good tour of their facilities and operations and informed us about the kind and extent of their activities. ATP works in the following areas: Planting Trees at Urban and Rural Sites, Environmental Education, and Sustainable Development and Poverty Reduction. They have thus far planted 5.5

million trees in Armenia with an average loss of 30%, yielding 3.85 million trees during the last 25 years. The cost of their operation, which includes a staff of 88 people, is an average of \$1 million/year, totaling \$25 million thus far. That amounts to a cost of around \$6.5 per tree. He also indicated that there is a Government organization called Forestry Administration (FA), which has nurseries and plants trees in forests of Armenia. However, he reported that they are very inefficient and that ATP can produce up to 200,000 trees a year, while the FA cannot produce half of that. Asked whether they help FA become more efficient, his response was that they do not want to have any direct relations with FA. My impression is that the huge amounts that the ATP spends in Armenia can be spent more effectively elsewhere and have a much higher impact on the economy of Armenia.

October 15, 2018

Kadjazen Toumanian and I met with the deputy chair of the State Water Committee of Armenia, Mr. M. Hovhannissyan and his advisor, Mr. Garen Dadoyan, in their office to discuss the issue of approving the invitation to Professor Karl Ulrich Rudolph of the University of Witten, Germany, to come to Yerevan and present a workshop on water resources and environmental issues, as well as teach local engineers pipeline repair technology and environmental management as a means of capacity building and technology transfer. They were highly enthusiastic and promised to report to the head of the committee, Ms. Inessa Gabayan, and ask her to approve, so that Dr. Samvel Haroutiunyan can write the letter of invitation to Prof. Rudolph.

October 16, 2018

1. I was invited to attend the 85th Anniversary of the NPUA. A mini-conference was the format they had and all discussions were in Russian. Hence, I stayed only for a little while.

2. I met with Armen Avakyan, the head of the Development Fund for Armenia, to discuss the nanotechnology and the water irrigation pipeline repair issues. His suggestion for the nanotechnology was to ask the Ministry of Education and Sciences to propose the KfB or the ADB banks to fund and implement a feasibility study and report their findings. Only then can their office help develop the nanotechnology R&D facility as a potential resource for startups. They will not be able to help in the water pipeline repair activities.

October 17, 2018

1. I attended the 7th Anniversary Jubilee of the NAS of Armenia in the main hall of the Academy on Baghramyan. Once again, 90% of the proceedings were in Russian; even the speech by the President of the Academy was in

Russian. This is outrageous! Why don't they speak in Armenian and translate for the Russians?

2. Kadjazen and I met with the World Wildlife Organization representatives on Proshyan avenue to discuss the potential for their help in planting trees in selected lands, if need be. Their response was that they are willing to work with us to present a program and try to get funding. However, since the funding of the project will be coming from the German Government, it is out of their field. Apparently, they also plant a few hundred thousand trees a year and have other types of wildlife protection programs in Armenia since 1998.

October 18, 2018

1. I had a telephone conversation with Ms. Inessa Gabayan and she informed me that she is ready to write a letter indicating the State Water Committee's willingness to invite Professor Rudolph to Armenia. We sent her a draft letter and she signed and stamped it and Kadjazen took a copy with him to give to Professor Rudolph to expedite the process.

2. A celebration was held in the Opera house of Armenia with two hours of boring speeches by the President of Armenia, the Catholicos and other dignitaries, followed by a fantastic musical program of selections ranging from Gomidas and Chekijian to Khachaturian, performed by the Academic Choir and conducted by the famous Maestro Chekijian himself. The jubilee continued in the Mergelyan Carpet in Shengavit with a nice dinner and performances by a well-known group of ethnographic dancers.

October 19, 2018

1. A round-table discussion on the topic of "Economic Development of Armenia; Challenges and Opportunities" was held in the Marriott Hotel in Yerevan, Armenia, in the Levon-Cilicia Room. Present were 25 experts in economics, industrial development, entrepreneurship, management, banking, agriculture and other areas from the World Bank, IMF, The University of Economics of Yerevan, the Central Bank of Yerevan, Deputy Ministers, Professors of the Yerevan State University, and heads of organizations. The event was jointly organized by the ARPA Institute and the Alternative Center for Education and Analysis in Yerevan. Each speaker was given 5 minutes to present their ideas and then, during the second round, they were asked to make their comments and suggestions. This two-hour round-table was highly productive and everyone thanked the organizers for the well-organized discussions. The video is placed on Youtube <https://youtu.be/brCAKvzGwiM> for everyone's view. Summaries will be placed on the websites of the two organizations for the public and Government officials to read and view as soon as they are received.

2. I was invited to meet with the Deputy Minister of the Diaspora, Mr. Aramayis Grigoryan, the head of the USA/ Diaspora Department, Ms. Hasmik Manukyan, and her advisor, Haig Yengibaryan. They were interested to learn about the ARPA activities and were willing to help in any way they can. I asked if they could suggest to the Minister of Education and Sciences to initiate a feasibility study for the Nano technology R&D center, and they promised to do so. They were interested to get ideas on how to attract the Diaspora experts to help Armenia. I suggested for them to come up with proposed specific projects, with well-written expectations/targets and then specialists willing to help can be found. They were also interested in helping with the Science Fairs. They promised to try to help organize a training session for teachers in order to help start the process.

October 20, 2018

I attended the conference dedicated to the 175th anniversary of Pazmaveb, the Journal of the Mkhitarian convent that publishes research articles on Armenian issues. It was held in the NAS Armenia on Baghramyan avenue.

October 22, 2018

1. I had an interview with Tatoul Hakopyan in the Civilnet facility. We discussed issues related to the ARPA Institute activities, and the economic, educational, and political situation in Armenia.

2. I met with teachers from the following schools in Armenia: School no. 87, Heratsi Avak School, School no. 78, and Artashak Avak School. We studied each of their projects and I informed them of their weaknesses and how they can improve on their projects.

October 23, 2018

1. I met with the Deputy chief of the Science Committee, Dr. Vardan Sahakyan, and discussed the issues of the invitation letter to Prof. Rudolph and the nanotechnology R&D center. He was familiar with both issues and promised to ask Dr. Haroutunyan on his return to write the invitation letter as soon as they receive an approval from Inessa Gabayan, the Chair of the State Water Committee. As for the nanotechnology issue, he thought that the GoA will be highly interested to establish such a center for the advancement of science and technology in Armenia and to train new cadre of scientists.

2. I had a meeting with Amur Margaryan, Emma Arakelian (patent attorney in NY), Aram Tarumyan (National

Instruments) and Samvel Mkhitaryan in the Alikhanyan Physics Institute. The subject was the patent ownership of Amur on his invented optical device. My suggestion was to study the laws in Armenia related to intellectual property and see if the Institute owns the patent or not.

3. I paid a visit to the Institute of Molecular Biology and talked with Arsen Arakelyan, the Director. He was very satisfied with the work the Institute is doing and the capabilities that the sequencer and the other equipment that ARPA provided are giving the scientists. I also discussed my DNA analysis with Prof. Levon Yepiscoposyan, who indicated that the analysis is yet to be carried out.

4. I met with Antoine Terjanian, a gentleman who has a non-profit organization that works in Armenia and helps in border villages, as well as in education. He inquired about participation in funding new businesses in the border villages. He was told they could.

October 24, 2018

I was invited to meet with the Deputy Minister of Education and Sciences of Armenia, Mr. Hovhannes Hovhannisyan, in his office. We discussed ARPA activities, including the Invention Competition (he promised to distribute the announcement in all universities and the NAS Armenia Institutes), the distance-learning program, nanotechnology, helping scientists and the Science Fairs. He promised to talk with Minister Haroutunyan about the feasibility study to be asked by the Ministry to the ADB, the Science Fairs (which he thought he can rely on Hrachoohi and Maro to organize the training sessions) as well as cooperation with the ARPA Institute in reforms of the educational system of Armenia. He was suggested to proclaim an “Educational Emergency” in Armenia, create expert committees and evaluate the current situation of the school system, the universities and the academy of the sciences and to come up with a plan.

October 25, 2018

Anushik Khachatryan from the H1 TV station in Armenia wanted to do an interview. So, Hrachoohi made arrangements to have the interview at the AUA. It was carried out in the Entrepreneurship and Product Innovation Center, where Hrachoohi made some introductory remarks and stressed the potential cooperation with AUA on nanotechnology and then I was asked to make statements about ARPA Institute and its activities in Armenia and Los Angeles.

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