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President's Message

Roadmap for the Economic Growth of Armenia

You probably all agree that science, research and technology developments are the foundations for the recent technological advancements and economic expansions of the modern era. In this increasingly competitive world, the leaders of Armenia need to consider the impact of their every policy decision on the ability of existing or new

potential businesses to grow, create new jobs and compete in a world market. Businesses are the foundation for economic growth through creation of jobs, and innovations in manufacturing and services that drive the economy. Moreover, the driving force for modern businesses are technology, expertise and capital, all of which play a pivotal role in economic growth. In simple words, a country is as fit as the level of marketable products it produces.

Education, starting with as early as kindergarten all the way through university, is the mine that provides the raw material for innovation, creativity, and technology development. Innovation and technological advances achieved through research and development have long been responsible for major increases in economic growth and worker productivity. Hence, both business and academic leaders should work with lawmakers to help achieve a common understanding of the unforeseen consequences that poorly considered regulation and legislation can have on the competitiveness of Armenian businesses and on their ability to reach global economic levels and create new and high-standard jobs. Our economic security and future standard of living depend on managing down our deficit and debt, and curtailing the growth in spending by consolidating our resources, retraining our workforce and academics, as well as by creating effective and efficient organizational structures.

The Economic Fitness of a country is a new term, which refers to Complexity of Science applied to Economics, evolving into a systematic and mathematically sound and testable framework. It was proposed by an Italian physicist, Luciano Pietronero, and presented to the World Bank and the IMF. It forecasts long-term or structural growth better than the IMF World Economic Outlook process, characterizes diversification strategy better than existing measures and identifies complexity of goods and services. This approach can help the government and private sector understand the paramount importance of science, and upgrading of and diversification in industrial production. In addition, it points out the constraints to sustainable growth and the need for a sustainable legal framework.

Armenia, even with all its progress in the IT sector, has stayed behind (I dare say, at least 30 years) in following the trend of advanced economies. Our resources are scattered all over the place. There are over 60 Institutes, in which there are multiples of the same essential fields, such as biology, chemistry, physics and physiology, just to name a few. Each of these has its own instrumentation and facilities, which are rarely used; some even avoid using them in fear of causing damage. FEAR, the most damaging characteristic of all in Armenia, is abundant: fear from one's supervisor, fear from one's senior, fear from aggressive neighboring countries, and fear from "friendly" nations, etc. Moreover, most researchers do not contribute to

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President's Message Continued...

teaching the younger generation and spend their time in seclusion with “their own” labs. The mentality of cooperation and teamwork is completely absent. However, this can all change if we organize and restructure the whole research and academic system into a more productive, efficient and modern working machine by consolidating all redundant resources, developing a system of central laboratories with fully equipped instrumentation and tools, (re)retaining professors and researchers for the proper use of all the modern equipment, and giving them such world-class problems to solve that would force every individual scientist/researcher to cooperate and work in teams. This approach will lead to mutual respect and trust, production of cutting-edge products and innovative technologies, as well as diversification of the industry. Thus, all the biologists work on issues such as the Armenian Genome, or creation of new and advanced drugs/medicines for humans, animal, plants, etc. The result will be significant reduction of cost, increased efficiency, advanced science and technology and economic growth. The definition of problems should come from a group of experts from various fields who study the local capabilities, retrain for a cadre of advanced specialties, and even bring in experts to create the right environment and proceed with skilled leadership and capable management.

One of the side benefits of such large and well-equipped facilities will be the possibility of attracting foreign/diaspora experts who would be willing to come to Armenia, do their own research, and cooperate and work with the locals. This will create an atmosphere of true higher learning and diasporan participation. Moreover, it will help create new startups in diverse industries, leading to unprecedented economic growth. Take the examples of Singapore, Ireland and others, who worked well with advancing science, technology and the legal environment and thus created significant economic growth.

It is always big research centers and big facilities that solve big problems and produce big results. Our targets should be high and our expectations from people should be hard work, respect for others, team spirit, trust for each other and professionalism. Only then can we be a nation of high technology and advanced science. Let our neighbors be jealous of our successes and not ridicule our failures.

Armenia has many needs to develop cutting edge technologies, such as quantum and nano technologies, and create the means necessary for production of complex and competitive products to enter global markets.

Please visit our website (<http://www.ARPAINstitute.org>) to learn more about our projects. You can personally help support these long-term projects that can boost innovative economic growth in Armenia! Please make a tax-deductible donation to ARPA Institute through the website or by sending in your checks to the ARPA Institute: 18106 Miranda St., Tarzana, CA 91356.

We need people who know how science fairs work and who can help us in Armenia by working with schools to guide them for the implementation of science fairs.

Please contact us at info@arpainstitute.org if you can help.

ARPA Institute Lecture Series and Panel Discussions during 2021

ARPA Institute organizes lectures and panel discussions on various topics related to Armenia or Armenians. If you are willing to make a presentation, please contact us at info@arpainstitute.org

What Are the Technological Needs for a Strong Post-War Armenia? by Yervant Zorian & Raffi Kassarian

Abstract: With the start of post war recovery era, this panel addressed the following questions: How information and communication technologies responded to the needs of Armenia during the war? How did Armenia fair in defense technologies and what improvements are needed? Will technology it of itself be enough to make the military more competitive? What are the technological capabilities of Armenia, the various companies, universities and research centers? What role can the Diaspora play in the technological advancement of Armenia, including defense or other areas and in what ways can the government of Armenia benefit from it?

<https://youtu.be/UF8A53OMT7E>

Dr. Yervant Zorian holds an MS in Computer Engineering from the University of Southern California, a PhD in Electrical Engineering from McGill University, and an MBA from Wharton School of Business, University of Pennsylvania. Dr. Zorian is a fellow and the Chief Technologist of Synopsys Corp, and the President of Synopsys Armenia. Previously he was 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 350 scientific papers, four books and holds 42 US patents. A Fellow of the Institute of Electrical and Electronic Engineers (IEEE), he was selected by Electronic Engineering Times among the top 13 influencers on the semiconductor industry in the past fifty years. Dr. Zorian was the recipient of the prestigious Industrial Pioneer Award, the IEEE Hans Karlsson Award for diplomacy, and he was the recipient of the National Medal of Science from the Republic of Armenia. He served as the General Chair 50th Design Automation Conference and of the 50th International Test Conference. Since 2008, he has served as a member of the AGBU Central Board; served as the chair of AGBU Silicon Valley, the President of the AGBU Armenian Virtual College, and a trustee of the American University of Armenia.



Raffi Kassarian has earned a BA in International Relations and an MBA from Stanford University. He and his family moved to Armenia from San Francisco in 2008. Currently, he is Executive Director of the Union of Advanced Technology Enterprises (UATE), the leading business association representing technology companies in Armenia. He is also the CEO and Principal Advisor at Sensyan LLC, a boutique advisory firm focused on the growing Armenian technology sector. Previously, he was the Senior Vice President of Internet of Things, and a member of the Senior Leadership Team at TeamViewer GmbH, and CEO of Monitis. Before joining TeamViewer, Raffi served as the Head of Product Management, Marketing and Retail Banking Services for Converse Bank. Raffi also served as CEO of iCON broadband wireless service provider. Prior to moving to Armenia, Raffi served as Vice



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President and General Manager at Fair Isaac Corporation (NYSE: FICO), where he launched the company's first internet service. Prior to this, Raffi was Senior Manager in the Strategic Services Group at Accenture. He holds Board positions at Repat Armenia Foundation, Impact Hub Yerevan and EVN Report. Communications, Armenia's first broadband wireless service provider. Prior to moving to Armenia, Raffi served as Vice President and General Manager at Fair Isaac Corporation (NYSE: FICO), where he launched the company's first internet service. Prior to this, Raffi was Senior Manager in the Strategic Services Group at Accenture. He holds Board positions at Repat Armenia Foundation, Impact Hub Yerevan and EVN Report.

Daniel Varoujan at the University of Ghent, 1905-1909 by Simon Payaslian

Abstract This presentation focused on Daniel Varoujan's life and studies in Ghent. Although works on Varoujan often refer to his years in Ghent, there is to date no publication focusing on his studies at Ghent University. This is the first study to employ the archives of Ghent University and the archives of the city of Ghent to offer a detailed examination of Varoujan's life and studies in Ghent. Varoujan first audited courses in literature and philosophy but soon changed his field to political economy and sociology, in addition to taking courses in history, psychology, and law. Upon completing his studies in 1909, he returned to his hometown Brgnik as a mature intellectual deeply influenced by his education at Ghent University.

<https://youtu.be/Pla6pX0Yzvc>



Professor Simon Payaslian holds the Charles K. and Elizabeth M. Kenosian Chair in Modern Armenian History and Literature at Boston University. He is the author of *The Political Economy of Human Rights in Armenia* (2011); *United States Policy toward the Armenian Question and the Armenian Genocide* (2005); "The Downing of a C-130 and Host-State Utilization of the American Armenian Community," *International History Review* (2019); and most recently "Daniel Varoujan l'Université de Gand, 1905-1909," *Revue Belge de Philologie et d'Histoire / Belgisch Tijdschrift voor Filologie en Geschiedenis* (2019/2020).

Rethinking the Economic Model of Armenia by Vahan Zanoian

Abstract: Armenia is a small country in a bad neighborhood. This, however, does not mean she has to remain economically or even militarily weak. While small countries do not have the economies of scale enjoyed by larger ones, they can be much more agile, more adaptable, and suffer from fewer and more manageable social challenges. There are proven ways of compensating for small size, such as high and increasing productivity of labor and capital; synchronization of various economic spheres to create synergies and positive economic externalities; technological innovation and efficiencies built into the system of production and distribution of goods and services. But, as a prerequisite to the above, Armenia needs a competent government and a culture of statehood. This discussion focused on some of the key measures that would allow Armenia to overcome the disadvantages of its small size relative to its trading partners and to establish a culture of statehood and good governance.

<https://youtu.be/R3BR-OBIGKw>

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Vahan Zanoian has graduate degrees in Economics and Political Science from the American University of Beirut and University of Pennsylvania. He is an author, traveler, global energy consultant and anti-trafficking advocate. For thirty-five years, he has been a strategic advisor to numerous governments and multinational companies, focused on global competitiveness and energy strategies. He has published two volumes of poetry in Armenian and four novels in English. He currently divides his time equally between Armenia and southern California.

The Environmental Security Risks of Armenia and Its Impact by Irina Ghaplanyan

Abstract: The presentation discussed the environmental security risks that Armenia is facing today and the potential means by which to mitigate and tackle these risks most effectively. The talk covered the larger context of security, and issues related to the development of a sound legal doctrine, which would feed into effective foreign policy and strategy development for Armenia. Having faced a loss on the battlefield and in the diplomatic playing field, the legal instrumentary and the potential for effective legal diplomacy is something that Armenia can and should capitalize on.

https://youtu.be/-znav_pJYdk

Dr. Irina Ghaplanyan is a political scientist, climate negotiator and published author. Irina holds a Ph.D. in political science from the University of Cambridge. Her main areas of expertise are political leadership, states in transition, climate politics, environmental management, gender and gender-in-conflict as well as security studies. Her previous education includes a MA in Diplomatic Studies from the Diplomatic Academy of London and a BA Degree in International Relations from the University of Malta. Dr. Ghaplanyan served as Deputy Minister of Environment for the Republic of Armenia and is currently teaching at the American University of Armenia. She has worked in numerous international organizations and think tanks around the world, including UNDP, Georgetown University, Eurasia Foundation, and Chatham House. Irina has been a catalyst for change in the field of sustainable business and social entrepreneurship in Armenia. She was awarded as one of the top social venture entrepreneurs by the Global Good Fund Leadership program in Washington DC in 2015. Dr. Ghaplanyan has academic and media publications, among which the most recent is a Routledge book titled "Post-Soviet Armenia: The New National Elite and the New National Narrative".



The Artsakh War & COVID: Lessons Learned in Healthcare by Armen Hagopjanian, Vicken Sepilian, and Shant Shekherdimian

Abstract: This discussion focused on the healthcare system in Armenia and Artsakh, the lessons learned from the difficulties in medical care during and after the Artsakh war. Moreover, the discussion highlighted the successes and/or examples of new approaches to the response of the Diaspora to COVID and the war, as well as on how things could be improved in the future including the ways and means for better Armenia Diaspora collaboration and the role of the Armenia Ministry of Health.

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Dr. Armen Hagopjanian, D.P.M. attended Yerevan State Medical Institute in Armenia and then moved to the USA, where he received his BS in Microbiology and Molecular Genetics from University of California Los Angeles (UCLA) and later graduated from California College of Podiatric Medicine earning his Doctor of Podiatric Medicine. Dr. Hagopjanian completed his surgical residency at Western Medical Center in Orange County. He is Board Certified in Foot and Ankle Surgery and in Reconstructive Rearfoot and Ankle Surgery. He is a member of the American Podiatric Medical Association, California Podiatric Medical Association, and the American College of Foot and Ankle Pediatrics, as well as a Fellow of American College of Foot and Ankle Surgeons. Dr. Hagopjanian is a former Vice President of the Los Angeles Society of Foot and Ankle Surgeons, Former Chief of Podiatry at Providence Saint Joseph Medical Center and Northridge hospital. He is the first podiatric surgeon who started Total Ankle Replacement program in Los Angeles and still trains many surgeons around the country to perform this difficult but rewarding procedure.



Dr. Vicken Sepilian is the founder and director of American Fertility Specialists Medical Group in Los Angeles, California and is a board-certified physician specializing in Reproductive Endocrinology and Infertility. Dr. Sepilian has been an active member of the Armenian American Medical Society (AAMS) serving as President from 2009 to 2013. He served as the Chairman of the 11th Armenian Medical World Congress which took place in Los Angeles, California in 2013 and brought together healthcare experts from all over the world. In 2017, Dr. Sepilian was elected the president of the Armenian Medical International Committee, a nonprofit organization with chapters all over the world, with the aim of coordinating global efforts in improving healthcare in Armenia.



Dr. Shant Shekherdimian holds a medical degree from Drexel University in Philadelphia, Pennsylvania, and a master's in Public-Health with an emphasis on global health from the University of California, Los Angeles (UCLA). He has completed a residency in general surgery at UCLA and a fellowship in pediatric surgery at the Hospital for Sick Children in Toronto, Canada. He is currently an Assistant Professor of Surgery at UCLA. Shant's clinical interests include neonatal surgery and pediatric surgical oncology. His research interests are in intestinal lengthening as a potential treatment of short bowel syndrome. Dr. Shekherdimian has participated and lectured at several international conferences pertaining to his surgical specialty and public health. He is involved in several projects with the aim to improve pediatric care in Armenia, including spearheading a novel model of effective diaspora contribution to healthcare systems in home countries.

How Can Education, Science & Technology in Armenia Be Modernized? by
Mary Papazian, Ani Aprahamian, Naira Hovakimyan, and Ara Nazarian.
Moderated by Bruce Boghosian

Abstract: The educational system in Armenia has undergone some reforms, nevertheless it still requires a major overhaul. Modern education is based on Science, Technology, Engineering and Mathematics

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(STEM), which promote innovation, problem solving and decision-making skills. Universities in Armenia lack the necessary laboratories and modern instrumentation, and would benefit from new innovations in curricula. The research institutes have outdated laboratories and infrastructure, which cannot support progressive research and innovative technologies, at the level of the leading educational/research institutions of the world. This panel addressed the current situation of and limitations on the educational and research institutions and the urgent reforms needed to improve the status quo in Armenia. Moreover, the improvement in administration, curricula, and research facilities necessary to accomplish any reforms were highlighted. Finally, plans/suggestions for the immediate future were proposed, as well as longer-term evolutionary reforms that will establish a path to high standards and competitive educational, research, and technological developments in Armenia highlighted.

<https://youtu.be/SqSGCnWvgE0>

Dr. Mary A. Papazian has been serving as president of San José State University, Silicon Valley's public university, since July 2016, during which time she has developed the Interdisciplinary Science Building as part of a planned Science Park. Under her leadership, SJSU launched a ten-year strategic plan that positions it for long-term excellence in the 21st century. Dr. Papazian writes and speaks frequently about higher education issues in television news broadcasts, podcasts, national and international conferences, and other venues. She has written extensively about state and federal budget matters related to higher education. Before coming to San José State, Dr. Papazian served as president of Southern Connecticut State University, Connecticut, for five years. She strengthened programs and established a vision for SCSU's first-ever comprehensive philanthropic campaign. Under her leadership the university opened its new Academic Laboratory and Science Building and increased research opportunities for students. Previously, Papazian was provost and senior vice president for Academic Affairs at Lehman College of The City University of New York, dean of the College of Humanities and Social Sciences at Montclair State University in New Jersey, and as associate dean of the College of Arts and Science at Oakland University in Rochester, Michigan. A native of Los Angeles, Dr. Papazian holds B.A., M.A. and Ph.D. degrees in English from UCLA.



Professor Ani Aprahamian was appointed Director of A.I. Alikhanyan National Science Laboratory (Yerevan Physics Institute) in April 2018. She is the first woman, and the first Diasporan Armenian, to hold this position. Aprahamian holds a B.A. and Ph.D. from Clark University, Worcester, Massachusetts. She was also named the Frank M. Freimann Professor of Experimental Nuclear Physics at the University of Notre Dame. Professor Aprahamian has been a professor at Notre Dame since 1989. She has mentored over 15 Ph.D. students, given over 225 invited talks at various National and International Conferences and published over 200 papers in refereed journals, book chapters, and more. She is active in numerous international and national advisory committees in nuclear science. She is on the scientific councils of GSI-FAIR in Germany, JINR in the Russian Federation, and GANIL in France. Among the many honors recognizing her achievements, she is an Elected Fellow of the National Academy of Sciences of the Republic of Armenia, the American Association for the Advancement of Science, and the American Physical Society.



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Professor Naira Hovakimyan has an MS in Theoretical Mechanics and Applied Mathematics from the Yerevan State University in Armenia, Ph.D. in Physics and Mathematics from the Institute of Applied Mathematics of Russian Academy of Sciences in Moscow. She has been a research scientist at Stuttgart University in Germany, French Institute for Research in Computer Science and Automation (INRIA) in France, Georgia Institute of Technology and Virginia Tech. She is a W. Grafton and Lillian B. Wilkins Professor of Mechanical Science and Engineering and the inaugural director for Intelligent Robotics Lab of Coordinated Science Laboratory at the University of Illinois, Urbana Champaign. She has co-authored two books, six patents, and more than 400 refereed publications. She received the SICE International scholarship for the best paper of a young investigator in the VII ISDG Symposium (Japan, 1996), the AIAA Mechanics and Control of Flight Award, the SWE Achievement Award, the IEEE CSS Award for Technical Excellence in Aerospace Controls, and the AIAA Pendray Aerospace Literature Award. In addition, she was awarded the Humboldt prize for her lifetime achievements and the UIUC Engineering Council Award for Excellence in Advising. She is Fellow and a life member of AIAA, a Fellow of IEEE, and a member of SIAM, AMS, SWE, ASME and ISDG. She is a co-founder and chief scientist of IntelinAir. Her work in robotics for elderly care was featured in the New York Times, on Fox TV and CNBC. Her research interests are in control and optimization, autonomous systems, machine learning, neural networks, game theory, and their applications in aerospace, robotics, mechanical, agricultural, electrical, petroleum, biomedical engineering, and elderly care.



Professor Ara Nazarian is Associate Professor of Orthopaedic Surgery at Harvard Medical School. He is the Vice chair of Research Affairs at the Carl J Shapiro Department of Orthopaedic Surgery and Director of the Musculoskeletal Translational Innovation Initiative at Beth Israel Deaconess Medical Center. He has mentored more than 170 undergraduate and graduate students and post-doctoral fellows and is the author/co-author of over 150 peer-reviewed publications, 2 books, more than 15 patents and patent applications, and a co-founder on 5 startups. His primary focus is on translational musculoskeletal studies to identify and address unmet clinical needs. His extensive biomechanics, bioimaging and animal models expertise and partnerships with clinical and research collaborators has been a hallmark of his work to date. He serves on the editorial Board of 2 journals, an ad hoc reviewer for 17 journals and has lectured extensively in the United States and abroad.



Professor Bruce Boghosian is Professor of Mathematics at Tufts University with secondary appointments in Computer Science and Physics. He also co-directs the Data Analytics program in the School of Arts and Sciences. Bruce received BS and MS degrees from MIT (1978), and PhD from the University of California, Davis (1987). He was elected to Fellowship in the American Physical Society in 2000, named a Distinguished Scholar of Tufts University in 2010, a Fellow of the Jonathan M. Tisch College of Civic Life in 2018, and a Fellow of Tufts' Data Intensive Studies Center in 2019. He served as Chair of the Department of Mathematics at Tufts University from 2006 to 2010, and as President of the American University of Armenia from 2010 to 2014. He has been Research Associate Professor, Center for Computational Science and Department of Physics, Boston University, Senior Scientist, Mathematical Sciences Research Group, Thinking Machines Corporation, and Scientist,

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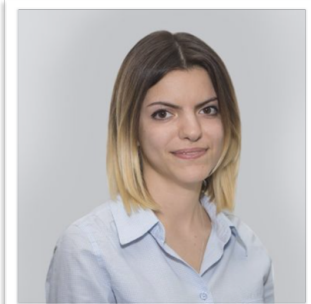
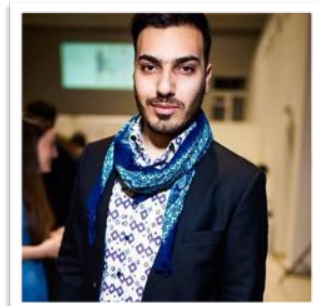
Lawrence Livermore National Laboratory. Dr. Boghosian's research emphasis is on mathematical models of economics in general, and agent-based models of wealth distributions, in particular. He has received numerous awards, honors and fellowships.

The Textile and Fashion Industry in Armenia by Vahan Khachatryan, Elen Manukyan, Gevorg Baghdasaryan, Talar Bilemjian, and Aida Gharakhani. Moderated by Ani Shabazian

Abstract: Leading the textile industry in Armenia is the Fashion and Design Chamber (FDC) of Armenia (<http://www.fdc.am>), a non-profit association founded in 2017 to strengthen the fashion and design sector of Armenia bringing together more than 200 Armenian designers, product brands, and textile companies. The cooperation of the FDC with public and private, as well as international organizations to build capacity and support modernization, market penetration, networking and partnerships to enhance sustainable and green production were surveyed. The presentation also highlighted successful Armenian fashion designers, both in Armenia and the U.S., who have spearheaded successful brands, fashion events, collection exhibitions, fairs, pop-up stores, presentations, showrooms, and campaigns.

<https://youtu.be/3qvkIMCxF8g>

Vahan Khachatryan, Founder and President of the FDC and the designer of Vahan Khachatryan brand, received his professional education in Academia Italiana, Florence. He then worked in the Dolce & Gabbana, Alta , Arti Minori srl, Sesto Fiorentino companies. Vahan loves to study culture, art, traditions, heritage and is enthusiastic in supporting the creative industry of Armenia.



Elen Manukyan is co-Founder and Team Leader of the FDC, as well as co-Founder of the 5Concept store and the Loom Weaving knitwear, showcasing Armenian brands. Elen received her Master's degree in Political Science and International Relations at the American University of Armenia, then worked for over 15 years supporting small and medium enterprises, leading educational, consulting, information and analytical programs.

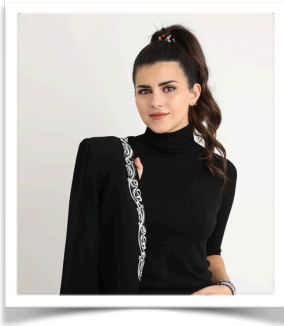
Gevorg Baghdasaryan is Senior Manager of the Investment Promotion and Foreign Relations. Gevorg's professional experience includes leading Armenian and French companies and public institutions in the fields of Marketing, Communication, Investment and Export Promotion. Gevorg obtained a Master's in Arts on European Interdisciplinary Studies from the College of Europe, a Master's degree in Marketing at IAE Lyon 3 School of Management, and a Bachelor's degree in Marketing at the French University in Armenia.



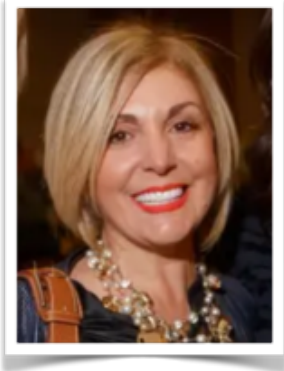
Talar Bilemjian is Founder and designer of Talar Nina fashion brand. Born in Los Angeles, California, Talar moved to London at a young age to pursue her education in the arts, where she became infatuated with the city's historic museums and small

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haberdasheries. After relocating to Dubai the Armenian designer graduated from École Supérieure des Arts et Techniques de la Mode (ESMOD) in 2014 and obtained her degree in fashion design, which allowed her to build a platform to launch her label Talar Nina. She pulls her inspiration from a diverse cultural Armenian background and experiences for her contemporary RTW label, founded in Dubai in 2016. The designer's love of streetwear and intricate textiles led her to her first collection focusing on her favorite piece: the bomber jacket. Created from luxurious lightweight fabrics, Talar Nina designs translate from day to night due to their unique embellishment and superb tailoring.



Aida Gharakhani, world-renowned designer of the fashion brand Nicole Bakti, is a third-generation designer and a true artist at heart. Aida graduated from Otis Parsons in 1986. Through a remarkable series of opportunities and her innate talent, Aida built a fashion design house under the name Nicole Bakti in 1996. Her collection can be found in fine department and specialty stores globally with shipping worldwide. Her clothes have been endorsed and worn by many celebrities. Aida believes that women want to look sexy and feminine, especially when it comes to evening wear, and that is what she does best. All gowns are handcrafted with the finest materials including silk, satins and charmeuse.

The Armenian Dialect of Musaler from Proto-Indo-European to 2021 by Bert Vaux

Abstract: The development of one of the most linguistically complex and surprising varieties of Armenian, the Musaler dialect, was surveyed interactively from its Proto-Indo-European roots in 4000 BC through Classical Armenian and Medieval Cilician Armenian to the forms in which it is spoken today in its original homeland and the diaspora. Audio and video footages of current speakers were used in tandem with audience quizzes to address questions such as “how does Musaler relate to the other modern Armenian varieties of Syria and Cilicia (Kesab, Hajin, Marash, Zeytun, Beylan, Aramo, etc.)?” and “what linguistic changes made them so different from the rest of the Armenian-speaking world?”

<https://youtu.be/ePXdeWvS3us>



Professor Bert Vaux: is Professor of Linguistics at Cambridge University and a Fellow of King's College. After studying Western Armenian with Abraham Terian and Kevork Bardakjian and Classical Armenian with Robert Thomson and James Russell, he completed his Ph.D. entitled “Armenian Phonology” at Harvard University in 1994, where he then taught for nine before taking up his current post in Cambridge. His primary interest since being exposed to the Jerusalem dialect by Abraham Terian has been documenting and studying the hundreds of dialects of Modern Armenian, from Ankara and Artvin to Zeytun and Zok. His newest projects are studies of the Armenian dialect of New Julfa, Isfahan (Oxford University Press, to appear) and the vowel harmony system of the Goris dialect (Oxford University Press, 2021), and a monograph on the Salmast dialect.

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The Role of Mikoyan during the Post-Stalin Era and the Artsakh War by Pietro Shakarian

Abstract: Presentation on veteran Soviet statesman and longtime Politburo member Anastas Mikoyan (1895-1978), the “master of international diplomacy”, discussed the pivotal role he – once a loyal Stalinist – played in dismantling and rejecting the authoritarian Stalinist state after the death of Joseph Stalin in 1953. Moreover, among other things, a discussion followed on how Mikoyan’s rehabilitation of Yeghishe Charents and the republication of Raffi and Patkanyan signaled the start of the Thaw in Soviet Armenia, which may have set the stage for the 1965 Yerevan demonstrations and the 1988 Karabakh movement, as well as Nikita Khrushchev’s re-assessment of Stalin at the XX Congress of the Soviet Communist Party in 1956. The discussion addressed how that was significant, not only for Armenia but also for the Soviet Union at large. An interview followed the presentation, where questions on the Artsakh war, its possible reasons and consequences, and its potential effects on the elections addressed some of the more current events occurring in Armenia.

<https://youtu.be/yViSSyULa3A>

Professor Pietro A. Shakarian is a historian of Russia and the Soviet Union, with a focus on Armenia and the Caucasus during the era of Nikita Khrushchev’s Thaw. Shakaryan is currently a professor at AUA. He earned his PhD in History at The Ohio State University, his MA in Russian, East European, and Eurasian Studies at the University of Michigan Ann Arbor. His MLIS is from Kent State University, and his BA in History is from John Carroll University in Cleveland. Shakarian has written analyses on current affairs in Russian and post-Soviet space for various publications, including *The Nation* magazine, the *Cleveland Plain Dealer*, *Hetq*, the Russian International Affairs Council, and more.



Future Plans for High-Tech Industry in Armenia by Hayk Chobanyan

Abstract: The discussion centered around the main challenges facing the high technology industry and the important role that this sector can play towards the future development of Armenia. The most urgent priorities of the ministry were highlighted and prospects for the advancement of science and technology addressed. Also, the great potential of the Diaspora and the role it can and should play in the development of high-tech industrial sector of Armenia were underlined. Creation of new and improved communication links and measures, which may improve the current situation in our homeland in the social, technological and political fields were also touched upon. The presentation ended with Q&A with Minister Chobanyan.

https://www.youtube.com/watch?v=X_u5rnEkITk

Hayk Chobanyan was the Minister of High-Tech Industry of Armenia. He graduated from the Yerevan State University in 1995 and from the Academy of Public Administration in 1999. Mr. Chobanyan’s Work Experience is diverse and multifaceted, starting with editorials of economic development, to serving as CEO of Information-Analytical Center in Nork. Hayk has served on the Board and later as Deputy Director of the Union of Information Technology Enterprises of Armenia (UITE) and was appointed and Director of UITE Expo 2018, as well as on the Board World Information Technology Service Alliance / WITSA. He founded the Arpi Solar, a solar energy and the Freenergy companies. As Governor of Tavush Marz he has achieved significant improvements in the lives of the people in the region. His expertise comprises of Industrial Energy Efficiency, Marketing ITO, IT



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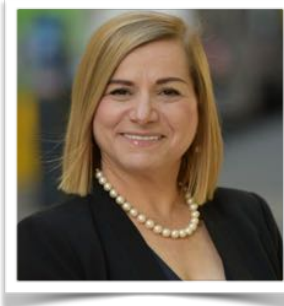
Lecture Series & Panel Discussions Continued...

Program and Financial Management, CMMI/Capability Maturity Model Integration, E-Governance and learning, IT Policy, Process and Quality Management and Information Strategy Development. Mr. Chobanyan has been the National Coordinator of the EU Digital Market Harmonization Program, a Member of the EU Private Sector Development Assistance Center, the ICT Forum for South and Eastern European, Director of Tavush Spiritual Revival Foundation and the Founder of the Sustainable Energy Development Fund, as well as the Chairman of the Board of Trustees of Real School foundation. His awards include the Medal of Marshal Baghramyan, the Gold Medal of YSU, the Gold Medal of the Ministry of Labor and Social Affairs of the RA, diplomas and letters of gratitude.

BAJ Accelerator: 10 Business Unicorns in Armenia

by Emma Arakelyan, Armen Kherlopian, Vahe Andonians, Paolo Pirjanian, and Albert Stepanyan

Abstract: The BAJ Accelerator, a New York Accelerator has the mission to build 10 Armenian business unicorns in 5-6 years. This is directed at boosting the economy of Armenia and establishing an impactful global presence. Three upcoming Armenian unicorns have already been identified and BAJ Accelerator has successfully fundraised Seed-Series B rounds by engaging Angel Syndicated and prominent Venture Capitalists. These select companies represent serial entrepreneur CEOs and high caliber teams, which provide competitive solutions in Security Technologies, Financial Technologies and Social Robotics.



Emma Arakelyan is a world-class management consulting executive, angel investor, author, speaker, entrepreneur, philanthropist, coach and professor. Emma brings more than 20 years of experience in leadership strategy across businesses, in IT Architecture & Transformation, M&A, governance and compliance, credentialed by global professional services and technology companies as a Partner at Ernst & Young and Managing Director at Accenture. Emma is the Co founding Partner of New York startups funding and growth BAJ Accelerator. She is the CEO and Founder of Orion Worldwide Innovations, LLC, offering Intellectual Property Management & Acquisition to innovators and investors globally.

Dr. Armen Kherlopian is a world-class data and strategy leader driving new growth and ecosystem impact. His experience spans Global Fortune 100 Companies, asset managers, startups as well as government organizations such as the FDA and NASA. He is a founding partner at the BAJ Accelerator hosted at the Jacobs Technion-Cornell Institute as well as a Venture Judge in the Columbia University Entrepreneurship Community and a Science Mentor at the Creative Destruction Lab. At Genpact his contributions have included driving transformation in global drug safety to that of analytics insights in Formula E racing, for champion standing across three continents including the Paris, Santiago and New York ePrixs. At Booz Allen Hamilton he was key author in developing the advanced analytics book of business and received the firm's highest accolade, the Booz Allen Innovation Award.



Vahe Andonians is the CEO and Founder of Cognaise and a serial entrepreneur with successful exits to Deloitte and Moody's. Cognaise is creating actionable intelligence from unstructured documents using Deep Learning. Additionally, Vahe is a partner with Moody's Analytics at Traidum,

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building a blockchain-based negotiation platform for trading Structured Credit products. Vahe is a senior lecturer at the Frankfurt School of Finance & Management.



Paolo Pirjanian is the Founder and CEO of Embodied and the former CTO of iRobot. Paolo is an early leader in the field of consumer robotics with over 16 years of experience in developing and commercializing cutting-edge home robots. He has worked at NASA JPL and has led world-class teams and companies at iRobot®, Evolution Robotics®, and others. In 2016, Paolo founded Embodied, Inc. to build socially and emotionally intelligent companions that improve care and wellness and enhance our daily lives.



Albert Stapanyan is the Founder and CEO of Scylla. With a background in military and technology, coupled with expertise in building tech businesses, such as Develandoo, Albert decided to combine those skills and create Scylla - The Leading Physical Threat Detection Solution.

Bioinformatics – Why It Is Mandatory for Armenia to Become an International Player by Hans Binder, Arsen Arakelyan, and Lilit Nersisyan

Abstract: The emerging understanding of genomic regulation after decoding the human genome is driven by novel, revolutionizing sequencing technologies and bioinformatics analytics. These mark one of the outstanding scientific achievements in the 21st century, which has had a great impact on virtually all areas of life sciences, molecular medicine and personalized healthcare. Presented was Dr. Binder's approach to this exciting area of science based on theoretical and experimental physics. Areas ranging from health and cancer bioinformatics, genetic-diversity and single-cell genomics studies to methodical aspects, such as building machine-learning-based analysis pipelines were highlighted and discussed. Years of intensive and successful collaboration with Armenia (IMB, RAU) were underlined, and why high-level genome bioinformatics is mandatory for Armenia and why the present situation is problematic, but not hopeless, explained. The presentation was followed by discussions on issues related to the state of bioinformatics research and education in Armenia, prospects and obstacles and how to develop strong and competitive bioinformatics research with applications in medicine, biotechnology and life sciences to make Armenia a valued partner and idea-driver in this field.

<https://youtu.be/Cq1MUdNg1ds>

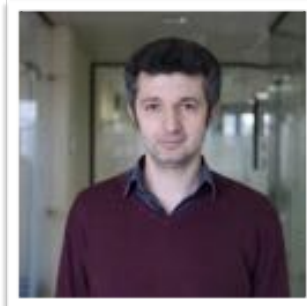
Dr. Hans Binder is a Biophysicist by training and has many years of research experience, but most of all a Bioinformatician by passion and professional background. He obtained his Ph.D. in Computer Simulations and a Habilitation degree in soft matter physics from Leipzig University. After working in Australia, USA and Sweden he became the founding Managing Director of the Interdisciplinary Centre for Bioinformatics of Leipzig University, just as the human genome was decoded in 2002. His scientific work deals with

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sequencing technologies and machine learning in the context of genome and personalized medicine. Hans is a member of the International Cancer Genome Consortium and other large-scale health-care projects. He has authored more than 200 scientific papers. For ten years he promotes scientific cooperation with Armenia in numerous joint projects and Armenian-German exchange programs (20 joint publications). He is the Chairman of the Scientific Board of the ABI.



Dr. Arsen Arakelyan is the director of the Institute of Molecular Biology of the National Academy of Science of Armenia since 2014. He started to work in the Institute as a second-year graduate student in the Yerevan State University. He received his PhD in Molecular and Cellular Biology in 2004. Arsen has over 80 research papers published in international peer-reviewed journals. His main research interests are in bioinformatics and computational biology. Arsen has more than twenty years of “wet-lab” experience.



Dr. Lilit Nersisyan has a PhD in computational biology and genomics from the Institute of Molecular Biology NAS Armenia and defended at the University of Leipzig, Germany. She also has an MS in biotechnology and an MS in Computer Science. Lilit is a postdoctoral research fellow in computational biology at Karolinska Institutet (Stockholm, Sweden), a principal investigator of 3 prestigious grants in life sciences, such as the Marie-Curie Individual Fellowship, the European Molecular Biology Organization and has twice been nominated among “the most productive scientists of the year” by the Armenian Bioinformatics Institute Committee of Armenia. Lilit is the author of 20 papers in international journals, an adjunct lecturer at the American University of Armenia (AUA) and contributed to the bioinformatics curricula for the AUA.

Insurance Foundation for Servicemen (1000 Plus) & Armenian Wounded Heroes Fund by Sona Baghdasaryan and Razmig Arzoumanian

Abstract: When a soldier makes the ultimate sacrifice on the battlefield, he leaves behind parents, siblings, and often a wife and children. In addition to grieving and coping with the loss of a loved one, these families need to adapt to degraded living conditions, find additional employment and new ways to support their children, and adjust to mental health life challenges. It is mandatory for every employed person in Armenia to contribute monthly to IFS. Additional funds are raised through donations from Diaspora and Armenia. IFS provides families of deceased and disabled soldiers in Armenia with payments based on two categories: Deceased servicemen or first-degree disability (complete loss of work capacity) – \$20,000 lump sum; \$400-\$600 monthly for 20 years. Second-degree disability (considerable loss of Capacity) – \$10,000 lump sum; \$200-\$400 monthly for 20 years. In the USA, the Armenian Wounded Heroes Foundation partners with IFS to channel tax-deductible donations. It also provides prosthetics and rehab to wounded heroes and protective gear and first aid kits to soldiers in the front-line to prevent death.

<https://youtu.be/IX0Rdr0X6JI>

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Sona Baghdasaryan is the Fundraising and Donor Relations Manager at IFS since February 2021 and member of the Armenian Institute of Directors since 2020. Prior to IFS Sona was at the Legal Department of the Central Bank of Armenia for 14 years, working in different positions. Since 2018 Sona is an adjunct professor at the French University in Armenia, where she teaches “Contract Law and Risk Management”. In 2007 Sona received her MA in International Bussiness Law from the French University in Armenia and the University Jean Moulin 3 (Lyon, France). In 2012 she received her LLM in Banking and Financial Law from Boston University School of Law.



Razmig Arzoumanian is a Managing Director and Head of Aerospace & Defense (A&D) of Lincoln International, a global investment banking firm. He started his 20+ year investment banking career at Citigroup, and previously led the global A&D group at Merrill Lynch / Bank of America. Razmig has also implemented various humanitarian and other investments in Armenia and Artsakh since the early 1990’s. He is an active member of the Armenian community in the Diaspora and a Co-Founder of the Armenian Wounded Heroes Fund.

How Can Armenia Become a High-Technology HUB? by Aram Pakhchanian, Al Eisaian, and Hrant Khachatrian

Abstract: For Armenia to become a part of the high-technology world she needs development of key talent in science and technology. Technology is rooted in science, and for significant success in science there should be a clearly defined strategy and goals. The state of science in Armenia should be examined and a roadmap created to build capacity. Science works through efficient policies, a well-rounded management system and financial support. Education and the humanities are just as important and, with the proper guidance based on strategic goals, science and the economy will function well. The educational system needs to support industrial demand, as well as address trends in high technology to motivate the younger generation to strive to become scientists or develop cutting-edge technologies. The number of high technologies is steadily growing in Armenia, raising millions of dollars in VC funding. Smarter engagement of the Armenian Diaspora can benefit the high-tech significantly. Mentoring students, advising new companies, remotely teaching university students, supervising projects, getting engaged in “angel funding” networks, collaborating with research centers, and eventually moving to Armenia can have a big impact on the development of the high-tech and in making Armenia a High-Technology HUB.

<https://youtu.be/YMQNBoSqXWA>

Aram Pakhchanian is the Chairman of the Board of Trustees of Ayb Foundation. From 2014 to 2020 he was the principle of the Ayb School, an innovative school in Armenia well-known both inside the country and abroad. Aram is also the Vice President the ABBYY corporation, an international leader in digital intelligence solutions, where he worked since 1993. Pakhchanian is heavily involved in educational reform, projects and initiatives, such as establishment of innovative learning environments, modern educational curriculum and frameworks for professional teacher development programs. These are a part of the design of the Araratian Baccalaureate, a modern educational platform intended for all Armenian schools. He also leads the course on Leadership and Management in



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education in Universal University, Moscow.



Al Eisaian is a serial entrepreneur, technology investor and advisor. He is the co-Founder and CEO of IntelinAir, Inc. an aerial data analytics company in Carmel, IA. Eisaian's most recent company, IconApps, Inc., where he was Founder, Chairman & CEO, was acquired by Science Inc. in May of 2014. Al has 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 Al Co-Founded and served as Chairman and CEO and later as Executive Chairman of Integrien Corporation, until its acquisition by VMWare in 2010. He Co-Founded and served as CEO of CreationPoint Systems, from 2001-2005. Al was the SVP and General Manager of LowerMyBills, Inc. acquired by Experian Corporation from 2000-2001, as Associate Partner at USWebCKS, Business Development Director at LaunchPad an idealab company from 1998-2000, as a Business Unit Manager of NMB Corporation

from 1994-1998 and Product Manager from 1991-1994 and Applications Engineer from 1989-1991. He earned an MBA from Pepperdine University and a BSEE from Oklahoma State University. Al has invested and is an advisor in several technology start-up companies and gives frequent talks on technology entrepreneurship.

Dr. Hrant Khachatryan received his PhD in Graph Theory from YSU. He is the director of YerevaNN, Machine Learning research lab. Hrant frequently teaches courses in local universities, supervises student projects. He is one of the initiators of Gitak.club, a platform where students can find supervisors from all over the world. He is also an advisor at IntelinAir, an AgTech company focused on aerial imagery analysis.



Armenian Studies Programs around the World by Ara Sanijan, Jasmine Dum-Tragut, Reuven Amitai, Antranik Dakessian, S. Peter Cowe, Shushan Karapetian, and Vahram L. Shemmassian. Moderated by Ani Shabazian

Abstract: Armenian studies or **Armenology** is an inter-disciplinary field of the humanities and social sciences covering Armenian history, language, society, and culture. The emergence of modern Armenian studies is largely associated with the activities of the Catholic Mekhitarist order in the early 18th century. Until the early 20th century, Armenian studies were largely conducted by individual scholars in the Armenian communities of the Russian Empire, Europe, Constantinople, and Echmiadzin in Armenia. After the establishment of Soviet rule, Armenian studies were institutionalized in Armenia with the emergence of Yerevan State University, the National Academy of Sciences, the Matenadaran and other institutions of higher learning and research. At the same time, the second half of the twentieth century witnessed the establishment of numerous Armenian Studies Programs by benefactors in the Armenian Diaspora, usually in collaboration with prestigious universities in the host countries. These programs are now engaged in the teaching and study of various aspects of the Armenian language, and cultural and even social and political life. The role of these programs in the overall development and advancement of the Armenian language vis-a-vis other advanced languages were discussed. Moreover, difficulties facing each center and the benefits they provide, with examples from these selected programs, were highlighted.

Recommendations were made regarding more effective ways of developing specialized programs that may produce significant impact on the modern Armenian language, especially western Armenian.

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Professor Ara Sanjian is Associate Professor of History and the Director of the Armenian Research Center at the University of Michigan-Dearborn. Born in Beirut, Lebanon, he received his school education there. From 1986 to 1991 he studied for his master's degree in history at Yerevan State University, Armenia (then, part of the USSR). From 1991 to 1994 he did his PhD in modern history of the Middle East at the School of Oriental and African Studies, the University of London. From 1996 to 2005 he was the Chairman of the Department of Armenian Studies, History and Political Science at Haigazian University in Beirut. He joined the University of Michigan-Dearborn in January 2006. His research interests focus on the post-World War I history of Armenia, Turkey and the Arab states of Western Asia. He is the author of *Turkey and Her Arab Neighbors, 1953-1958: A Study in the Origins and Failure of the Baghdad Pact* (2001), as well as two monographs and a number of scholarly articles and book chapters, published in English, Armenian, Russian and French.



Jasmine Dum-Tragut is an Austrian Armenologist, linguist and hippologist. She directs the University of Salzburg's Center for the Study of the Christian East and its Armenian Studies, and researches as senior scientist at the Department of Biblical Studies and Church History. She has been closely connected with Armenia for over 30 years and has contributed to the establishment of Armenian Studies in Austria through numerous interdisciplinary research projects, publications and lectures. She is an honorary doctor of the Armenian Academy of Sciences, and has been awarded many times in Armenia, including the Franz Werfel Medal, the Aurora Mardiganian Medal, the Gold Order of Merit of the RA Ministry of Education, Science, Culture and Sports, and the Order of the Tavush Cross.



Professor Reuven Amitai is Eliyahu Elath Professor for Muslim History at the Hebrew University of Jerusalem and studies the history of the medieval Islamic world, Central Asia and the Eastern Mediterranean. He is interested in and has published on the pre-modern history of the Turks and Mongols, especially the history of the Ilkhanate; the Mamluk Sultanate of Egypt and Syria; the military history of the medieval Middle Eastern World; and Palestine in the late medieval period. Prof. Amitai is the academic chairperson of the Library Authority at the Hebrew University and coordinates the activities of the Armenian Studies program. He is not an Armenologist by training but written on the history of the Armenian Kingdom of Cilicia, and its role in the Mamluk-Ilkhanid war based on Arabic and Persian sources. For years now he has worked to organize the yearly academic memorial symposium on the Armenian Genocide at the Hebrew University.



Professor Antranik Dakessian is Associate Professor in the Department of Armenian Studies at Haigazian University and the Editor-in-chief of the Haigazian Armenological Review. Antranik has an MA in Armenian Literature from Yerevan State University and an MA in politics from the American University of Beirut. He received his Ph.D. from Swansea University, Wales, UK. As the Director of the Haigazian University-based Armenian Diaspora Research Center, he has organized conferences on Armenia/diaspora issues. Dakessian is the author of *The Armenian community of Lebanon*, vol. 1, *Crossroads to integration and the AGBU Orphanage of Hadjin*. He has

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compiled and edited books, including the proceedings of the ADRC conferences on the Armenian communities of Lebanon, Syria, Jordan, and Iraq. His research includes the post-Genocide history of the Middle East Armenian communities and their economic and cultural output, identity, democracy, integration and human rights, as well as Diaspora-homeland relations.



Professor S. Peter Cowe is Narekatsi Professor of Armenian Studies at the University of California, Los Angeles. His research interests include Late Antique and medieval Armenian intellectual history, the Armenian kingdom and state formation across the medieval Mediterranean, Muslim-Christian dialogue, and modern Armenian nationalism. The author of five books in the field and editor of ten, he is the past co-editor of the *Journal of the Society for Armenian Studies*. He has served on the executive board of the Society for Armenian Studies and Association Internationale des Etudes Arméniennes. A recipient of the Garbis Papazian award for Armenology, he has been inducted into the Accademia Ambrosiana, Milan, and awarded a doctorate honoris causa by the Russian-Armenian University of Armenia. Currently he also serves as Director of the UCLA Center for World Languages. His latest work *The Armenians: Religious and Cultural*

Interchange across the Mediterranean and Near Eastern World is to be published by Gorgias Press, New Jersey.



Dr. Shushan Karapetian is Deputy Director of the USC Institute of Armenian Studies, which promotes research that examines the social, cultural, educational, and political challenges facing Armenia, Artsakh, and the Armenian communities in the Diaspora. She received a PhD in Near Eastern Languages and Cultures from UCLA in 2014, where she taught Armenian Studies courses for ten years. Her dissertation, “How Do I Teach My Kids My Broken Armenian?: A Study of Eastern Armenian Heritage Language Speakers in Los Angeles,” received the Society for Armenian Studies Distinguished Dissertation Award in 2015. In 2018, she was the recipient of the Russ Campbell Young Scholar Award in recognition of outstanding scholarship in heritage language research. Dr. Karapetian researches, teaches, and writes about the Armenian experience, particularly

focusing on competing ideologies at the intersection of language and the construction of transnational identity. She is the host of the popular IG/YouTube Word of the Day series through which she teaches Armenian in a fun and engaging manner. She is also host of the new podcast series, *Language Therapy with Dr. K*, which looks at language, in all kinds of contexts, with an Armenian twist.



Professor Vahram L. Shemmassian is Professor and the Director of the Armenian Studies Program at the California State University, Northridge. He holds a Ph.D. in History from the University of California, Los Angeles (UCLA). His book, *The Armenians of Musa Dagh: From Obscurity to Genocide Resistance and Fame, 1840-1915*, was published 2020 by the Armenian Series of The Press, California State University, Fresno, CA. Another book, *The Musa Dagh Armenians: A Socioeconomic and Cultural History, 1919-1939*, was published in 2015 by the Haigazian University Press, Beirut. He has given many lectures, organized and participated in international academic conferences, and published scholarly articles in peer-reviewed journals and as book chapters on the fate of Armenian Genocide survivors in the Middle East between the two World Wars. Dr. Shemmassian has received numerous awards.

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Modernization of Healthcare in Armenia by Armine Lulejian, Davit Sargsyan, Arsene Mekinian, and Avet Manukyan

Abstract: The citizens of Armenia should be at the heart of a health and well-being model that is humane by design, trustworthy and knowledge-driven. The focus should be on the specific needs of the individual and require a new way of thinking about all the elements of health and well-being. Expectations are now higher than ever on secure access to health information, and easy to understand and pay medical bills. Hence designing and implementing a dependable digital health strategy is essential to any modern society. The tools to empower the workforce, automate data, streamline operations, as well as simplify and improve the healthcare experience are of paramount importance. The advantages are reduced costs, new forms of value-added benefits to individuals and gathering big data in minimal time for conducting epidemiological studies, research, clinical trials, or meta-analysis. Healthcare professionals can stay on top of cutting-edge techniques and trends and identify risk factors. Discussed were the ways and means of creating and implementing an effective digital healthcare system in Armenia.

<https://youtu.be/rQbpaUzGHZA>



Dr. Armine Lulejian is serving as Program Director for the Avetis Health Informatics Training program in Armenia. Dr. Lulejian is Senior Director of Educational Initiatives for the USC MESH Academy, Associate Director of Informatics Education Core with USC Clinical Translational Sciences Institute, and Clinical Assistant Professor in Population and Public Health Sciences at the Keck School of Medicine of USC. Dr. Lulejian has launched doctoral and masters training programs in Biomedical Informatics at NYU School of Medicine. Dr. Lulejian teaches undergraduates, graduates and medical students at USC Iovine and Young Academy and USC Keck School of Medicine. Dr. Lulejian was the lead researcher on patient and provider surveys with the first community electronic health project in the United States at New York City Department of Health and Mental Hygiene. She has

a Ed.D. and MS in education from Columbia University Teachers College, an MPH in epidemiology from UCLA, and BA in Psychobiology, with minor in Near Eastern Studies at UCLA. She is a certified health education specialist and emergency care technician.



Davit Sargsyan is a Principal Statistician in the Translational Medicine and Early Development Statistics group at Janssen PRD (J&J), a researcher at the Cardiovascular Institute of New Jersey (RWJ Medical School, Rutgers), and currently completing his doctoral in Pharmaceutics at Rutgers School of Pharmacy. Davit earned his MS degree in 2011 from the statistics department at Rutgers University. His main areas of interest are drug development, epidemiological research, advanced statistical techniques including multidimensional data analysis and machine learning, genomics and epigenomics data analysis and visualization (microarray, RNA-seq and DNA methylation data), and studying the role of microbiome in modulating human immune system.



Professor Arsene Mekinian is Professor of Medicine at Sorbonne University and specialist of autoimmune diseases with main interest in systemic sclerosis physiopathology. He has a lab on the crosstalk of B and Tfh lymphocytes and is the president of MINHEMON and VEXAS, which are specialized on management and research of immunohematological diseases. Arsene is the Founder and President of Sante Armenie french-

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clinical immunology and rehabilitation in Erevan and Goris.



Dr. Avet Manukyan is the Executive Director of the “National eHealth Operator” CJSC and the Founder of the “SYLEX SA” (Switzerland). He has 25 years of experience in architecting and developing enterprise solutions and massive scale technology systems for national level (Government) E-Health, Credit Bureau, Courts Automation and for Insurance carriers. Manukyan has also patented algorithms for processing of digital signals (UK), etc. He has a PHD in Computer and Data Sciences from the National Polytechnic University of Armenia (NPUA). He also has Medical Informatics credentials from Erasmus University in Rotterdam (Netherlands), Medical Expert Systems research program certificate from National Technical University of Athens (Greece) and has been a lecturer in NPUA.

Organizing Science Fairs in Schools of Armenia

Since 2017, when the first science fair was organized and held in the National Academy of Sciences headquarters on Baghramyan Ave, Armenia, the ARPA Institute has been working collaboratively on science fairs in schools with the Ministry of Science, Education, Culture and Sports (SECA). Prior to that, a teacher-training program was implemented in the Heratsy school facilities, where 80 teachers attended. They were divided into teams of four and guided to carry out a science project by experimenting on paper airplanes with each team optimizing a parameter while all the other parameters were kept constant. The objective was to have them understand the real meaning of a science project and guide their students. 24 projects from various schools in Yerevan and the regions were presented in the science fair. A select group of judges were trained and

asked to interview the students and the best 4 were awarded. Since then, ARPA has been working closely with the current SECS Ministry. Expanded teacher-training programs are planned in various regions of Armenia, starting with the Tavush region in the northeast. In April 2020 the first ever official Science Fair (Գիտահետազոտական Փառասոն), was held at the Architectural University in Armenia with 44 projects from various regions. Two of the winning projects participated on-line in the International Science and Engineering Fair (ISEF) and one of the teams won fourth place with a \$400 award. This was excellent for a first-time ever participation from Armenia. Moreover, the ARPA Institute won a grant of \$5000 from ISEF, which was used to purchase a computer, a projector, and a screen to 5 schools in various regions of Armenia. In 2021, official announcements from SECS went out to all schools in all regions of Armenia, soliciting participation in the science fair in Yerevan. Teachers were to be guided to help students select their project topics in December, carry out research on their topics in January 2022, construct a prototype, perform experiments, and collect data. The final Գիտահետազոտական Փառասոն will be held in April 2022, in Yerevan. The winners will once again participate in the 2022 ISEF.



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ARPA Institute Annual Invention Competition for Young Scientists Has a New Startup!

Lilit Nersisyan, a former first-place winner of the ARPA Institute annual Invention Competition for Young Scientists, has started a new venture called Bioinformatics Institute. “We are beyond excited to announce the newly-forged partnership between ARPA Institute and ABI! ARPA Institute was one of the first supporters of ABI, who believed in our mission and helped us develop, and continues to do so. We hope that this cooperation will lead us one step closer to our goal of promoting scientific progress in bioinformatics and life sciences”. For information about the ABI, please visit their Facebook page [here](#).

ARPA Institute Annual Invention Competition for Young Scientists of Armenia

The ARPA Institute’s 14th annual Invention Competition for Young Scientists was held in 2021 and the submissions were evaluated by experts from various fields. A new format was implemented this year where each scientist/student team would present a one-page Executive Summary, the summaries would be evaluated by a panel of experts, and projects with the potential to lead to a marketable product would receive grants of up to \$5,000 to support further research and development. In addition, if continued research were to show promising results, the team may receive additional funding and guidance for practical implementation. This year, three projects were rated as semi-worth-while; none was considered to be a winning project. In October 2021, the project teams or individuals were visited in Yerevan, the projects were seen on site, and pointers by experts relayed to them in order to improve the quality of the projects. Below, the titles of these three projects are listed. The first one, a fourth-year undergraduate student, was given an “encouragement” award of \$100. The rest were only advised on the necessary steps for improvement.



1. **Computational Modeling Solution for Determination of Thin-film Parameters from Optical Reflectance Measurements, by Asia Khachatryan**
 2. **Innovative Usage of Coffee Waste Combined with Microbes as A Biodegradable Cocktail for Soil and Plant, by Hayarpi Axekyan, Satenik Mirzoyan, Liana Vanyan, Karen Trchounyan (Advisor)**
 3. **UVON, the Disinfecting Robot, by Michael Aramyan, Alexander Asiryan, Tigran Tsaturyan, Ruben Qerobyan**
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Report from the ARPA Institute Executive Director in Armenia

ARPA Institute applied for and received a \$5,000 grant from International Science and Engineering Fair (ISEF) to realize a project, which would provide schools in the provinces (Marzes) a technology boost to extend internet access and computing resources to more students.

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Report from the ARPA Institute Executive Director in Armenia Continued...

On behalf of the ARPA Institute, Dr. Hrachoohi Boghosian reached out to schools in the Ararat Marz and Tavush region, and Barkev Iskikian reached out to “Teach for Armenia (TFA)” to put together a list of schools with the most need for technology resources. Overall, 6 schools across Lori, Tavush, and Ararat Marzes (Artsni, Ayrum, Berd City Secondary, Berd City High, Ararat City Principal, and Vedi City Principal School) were identified and provided with a new laptop and projector. The laptop and projectors were set up to allow access for all students to use for science fair research and education projects (please see image). The hardware was personally delivered to each school and set up and configured. The school principals and teachers were very appreciative and excited to receive the laptops and projectors. Special thank you to Netcore, LLC for working with ARPA in procuring and facilitating the delivery of the hardware.



ARPA has reapplied for a similar grant from ISEF for 2022 and look forward to providing similar upgrades to other schools in need across the country. The ARPA Institute representatives, Hagop, Maro and Hrachoohi met with the president of the Yerevan State University, Dr. Hovhannes Hovhannisyan, his Deputy, Artur Israelyan, and his pro-rector, Alexander Markarov. This meeting led to the development of a new course, by Hrachoohi, on “Innovation and Application” to be taught to university-wide graduate students as part of the university degree program.

The ARPA Institute representatives, Hagop and Hrachoohi, met with the Deputy Ministers of SECS, Mrs. Janna Andreasyan and Dr. Karen Trchounyan, to discuss adoption of the “Project-Based Learning” approach in classrooms. This led to the advocacy of the topic by the SECS Ministry and the YSU President during the 100th anniversary of the establishment of Pedagogy and Education Development Center at YSU. In that meeting special emphasis was put on changing the current education methods within the schools at all levels to incorporate “Project-Based Learning”. This will hopefully be applied within the primary and secondary education systems.

Cooperation with Yerevan State University Microbial Biotechnological and Biofuel Innovation Center

Professor Karen Trchounyan, Chairman of the Department of Biology and Deputy Minister of SECS.

The Microbial Biotechnological and Biofuel Innovation Center has been equipped with a two-channel Bench-Top pH/mV/ISE meter with electrodes and accessories, thanks to the ARPA Institute. This device gives new opportunities to implement academic and scientific research. The equipment is used for measurements of specific ions, pH, ORP in the medium with use of the ion selective, pH or ORP electrodes. Simultaneous usage of two channels is an advantage to achieve good results in a short time. Bench-Top pH/mV/ISE meter is applicable not only for scientific experiments, but also for the implementation of educational practice for students. This is a very powerful addition to the Microbial Biotechnological and Biofuel Innovation Center, and its use will allow meaningful outcomes in the near future; in particular, it is being applied in Applied Microbiology Master



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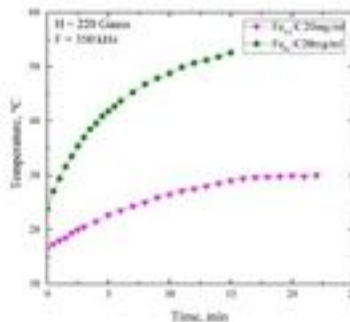
Cooperation with Yerevan State University Microbial Biotechnological and Biofuel Innovation Center Continued...

program laboratory courses. In addition, this year this team was granted an additional \$800 as a co-sponsorship for their winning of a Science Committee grant. The ARPA Institute continues to support good research in universities and help students in their innovative endeavors.



Cooperation with Institute of Physical Research of the NAS Armenia in Ashtarak

Մագնիսական տաքացման չափումները մագնիսական հիպերտերմիայի համակարգի միջոցով, Ֆիզիկական հետազոտությունների ինստիտուտի պինդ մարմնի ֆիզիկայի լաբորատորիան ստացել է ԱՐՓԱ ինստիտուտից որպես նուր «Magnetic Hyperthermia System» (MHS) սարքը, որը անհրաժեշտ է սինթեզած մագնիսական նանոմասնիկների տաքացման համար: Մագնիսական նանոմասնիկները լայն կիրառություն ունեն քաղցկեղային բջիջների մագնիսական գերտաքացման փորձարարական չափումներում: Այդ նպատակով պատրաստուել են երկաթի հիմքով մագնիսական նանոմասնիկներ տարբեր ածխածնային մատրիցներում, այնուհետև ուսումնասիրուել պատրաստուած նմուշների մագնիսական տաքացման հատկությունները MHS սարքի միջոցով: Նկար 1-ում ներկայացուած են MHS համակարգի լուսանկարը աշխատանքային վիճակում, ինչպես նաև բերուած են երկաթի նանոմասնիկների հիմքով պատրաստուած լուծույթների մագնիսական տաքացման կորերը մագնիսական դաշտի 350 կԸց հաճախութեան և 220 Գաուս մեծութեան համար:



Նկար 1 ա) Magnetic Hyperthermia System փորձարարական չափումների համակարգը, բ) Երկաթի հիմքով պատրաստուած լուծույթների մագնիսական տաքացման կորերը: Նկ.2 «Vibrating Sample Magnetometer» մագնիսաչափ:

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Cooperation with Alikhanyan National Laboratory of Armenia

Established in 2011, A. Alikhanyan National Laboratory (AANL), the premiere science laboratory of Armenia, has eight research divisions (Applied Physics, Experimental Physics, Theoretical Physics, Computational Physics, Cosmic Ray, Cosmology and Astrophysics, Isotopes Research and Production, and Quantum Information and Quantum Technologies). However, to have competitive global science and technology requires infrastructure and instrumentation. That is the motivation and vision for the creation of an ISO 6 or Class 1000 cleanroom at AANL, which will be open for collaboration and use by all the universities and scientific institutes of Armenia, as well as technology companies as needed. The ARPA Institute has been helping the team of Radio-Frequency Photo Multiplier Tube, led by Dr. Amur Margaryan, with their successful implementation of Radio Frequency timers of unsurpassed precision with huge potential in fundamental sciences and industrial applications, with billions of EUR valuation in international markets. Having the right infrastructure, especially a cleanroom, will allow Armenia to successfully compete in the future for high level experimental projects. The cleanroom could have significant benefits towards the development of thin films in the detection laboratory (blind to IR light), as well as towards advanced research and development in science and the defense of the homeland.

We envision a cleanroom that allows both fundamental research and applied work to be carried out in an ISO 6 (Class 1000) cleanroom, which will improve and advance scientific research and enable more advanced projects in the future, and which could allow collaboration between scientific institutes and private companies. There already are letters of intent to use the cleanroom by the Director of the Institute of Physical Research of Ashtarak, the Nalbandyan Institute of Chemical Physics, the Head of Solid-State Physics program at Yerevan State University, the Head of the Physics Faculty at Yerevan State University, the Chair of Physics and Head of the Laboratory of New Materials for Quantum Electronics, and a private company, "CIPR Center for Innovation Promotion and Research". These are only the existing potential users for the cleanroom; we are certain that new users and ideas with broader exploitation of the facility will eventually come about.

The cleanroom is nearly completed and tested and ready to be used. It certainly will be important for the near and far future of Science and Technology in Armenia.



The Radio Frequency Timer (RFT) Group at AANL

In collaboration with the ARPA Institute and the Yerevan Telecommunication Research Institute (YTRI), a RF synthesizer has been developed, built, tested, and successfully used for spiral scanning of 2.5 keV electrons. Currently an advanced version of the device is being developed, which will play a crucial role in the RF timing field. A demountable Radio Frequency Photomultiplier Tube (RFPMT) will be developed, constructed, and tested at Alikhanyan National Lab (AANL) in Yerevan using Y₂O₃ cathode and other eV parts from Kimball Physics. The new device will be commercialized by Kimball Physics. This could be a joint project by AANL, ARPA Institute and Glasgow University. AANL has



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The Radio Frequency Timer (RFT) Group at AANL Continued...

won a grant from the Science Committee of Armenia in the amount of 20,000,000 AMD, which was supplemented by ARPA with an additional \$20,000 to construct a second RFPMT prototype at Photek Ltd., UK. A Micro-Channel detector with a position-sensitive anode and electronics with an advanced oscilloscope were purchased from RoentDek. Meanwhile, studies are progressing successfully and excellent results have been received during testing at CANDLE with advanced laser systems and high frequency input signals.



Report on Trip to Armenia; September 5 - October 22, 2021

September 13 10:00 AM: Had a meeting with the Minister of High Technology Industry, Mr. Vahagn Khachaturyan, his Deputy, Mr. David Sahakyan and his Advisor Dr. Gevorg Mantashyan. The ARPA Institute team included Barkev Iskikian, Maro Aghazarian and myself. Presented were ARPA activities, suggestions on the future needs to improve the level of those sectors that are appropriate, advance research on cutting-edge technologies, as well as revamp the educational and technological environment of Armenia by retraining teachers, reviewing and modernizing curricula, establishing important high-level scientific centers with all the necessary equipment and tools and creating large scale programs/projects that may attract experts from foreign countries, including diasporan scientists. The reception by the hosts was very positive.



September 13 7:00 PM: Met with Hrant Khachatrian the representative and one of the co-founders of the Gituzh group of experts who are trying to campaign for increased funding in science, education and technology in Armenia.

September 14 6:00 PM: A virtual meeting was held with the Yerevan State Subsidies Project (ԵԳԱՃ) team. Present were Hayk Zhamgotchyan, Gevorg Tepanosyan, Hripsi Mkrtchyan, Gevorg Kesoyane, Razmik Sargsyan, Maxim Sargsyan, and Robert Hakobyan. The issues related to advancing scientific research in the universities and consolidating resources for more innovative science and technology in Armenia were discussed. They were told to attract young men and women, write, speak with, put pressure on the various ministries of the government and the Science Committee and try to advance their cause. Several such online briefings were given to graduate students from the Polytechnic University, the Yerevan State University and the Russia Armenian university.



September 14 8:00 PM: A virtual meeting was held with Astrophysicists to discuss the writing of a white paper on the 50m Radio-Optical Antenna renovation. Dr. S. Armen Sedrakian, Levon Poghossian and Vahe Petrosian, as well as several technical and theoretical experts from the European Union experts were present, and they all agreed to work on a white paper, while we continue working with Arevik Sargsyan to identify the technical and maintenance needs in the facility.

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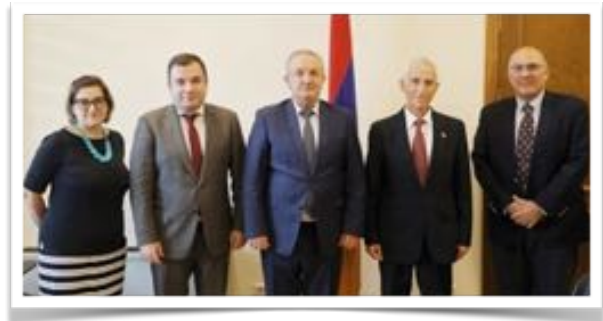
Report on Trip to Armenia Continued...

September 16 1:00 PM: Held a meeting with the Rector of the Yerevan State University, Dr. Hovhannes Hovhannesyanyan, his Deputy Artur Israelyan and his VP Alexander Markarov. The ARPA Institute team included Hrachoohi Boghosian, Maro Aghazarian and myself. Presented were the ARPA Institute activities and suggestions to improve the educational, scientific and research environment in the university, concentrate more energy in areas of practical importance for Armenia, carry out training programs and create high-level essential facilities that may attract both diasporan and international scientists.



September 16 4:00 PM: Had a meeting with representatives of the Radio-Optical Antenna committee, Arevik Sargsyan and Artur Aslanyan. The ARPA Institute team included Hrachoohi Boghosian and myself. Discussed were ways and means to revamp the antenna into an operational condition as well as schedule a visit to the site with experts.

September 16, 5:00 PM: Met with the Minister of Science, Education, Culture and Sports, Dr. Vahram Dumanyan, and his Deputy, Dr. Karen Trchounian. The ARPA Institute team included Hrachoohi Boghosian, Maro Aghazarian, Bruce Boghosian and myself. Once again, discussed were the ARPA activities, suggestions on the future needs to improve the research, education and technological environment of Armenia by re-training teachers, reviewing and revamping the curriculum, establishing important high-level scientific centers with all the necessary equipment and tools and creating large scale programs/projects that may attract experts from foreign countries, including diaspora scientists. The reception by the hosts was incredibly positive.



September 17, 3:00 PM: On Friday Radio Yerevan had an interview with me where the discussion was mainly centered around the current needs in education, scientific research and technology in Armenia. I raised the issue of the need for large-scale developments in science, engineering, technology, healthcare, and education. Specifically, there needs to be established high-level scientific and engineering facilities where young scientists will be enticed to work and carry out cutting-edge scientific and technological experimentation and thus be able to generate innovative approaches and even inventions. Moreover, having such well-equipped and technically advanced facilities will attract scientists/researchers from abroad, who would want to visit Armenia both to carry out their experiments and to work with the local scientific workforce. The audio file for the interview is [here](#).

September 20, 1:00 PM: I met with Mushegh Raphaelyan, professor of optics, and Tigran Shahverdyan, entrepreneur. Mushegh is doing wonderful work and setting up a modern optical laboratory in the Yerevan State University, Physics Department. He has received his Ph.D. in France and has returned to Armenia to work with the young scientists to advance optical sciences, especially towards development of nonlinear optics and optical computing areas. Tigran owns a robotics firm and is one of the co-founders of Gituzh, where they promote the importance of science and advanced research in modern high technology areas.

September 20, 3:00 PM: Met with Ashot Vardanyan and Sona Mnatsaganyan. Also present was Dr. Bruce Boghosian who introduced Ashot and his excellent work in Artificial Intelligence. Ashot presented his small AI company UNUM, where he and his team are developing advanced algorithms in Neural Networks, Deep

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Report on Trip to Armenia Continued...

Learning and other areas. He has assembled the most advanced computing system and is working in such areas in AI that no one has dared to attack. Sona, on the other hand, has a company where they are doing advanced research in wind turbines and other renewable energy sectors, using AI and other advanced techniques. They are both amazing young scientists that will bring Armenia to the forefront of high technology.

September 20, 7:00 PM: I met with Harutyun Sargsyan, the Director of Science Fairs in Armenia and discussed ways and means of organizing science fairs for 2022. This includes training teachers on how to organize the fairs, how to guide students and how to get the local communities involved in promoting scientific thinking and innovation.

September 22, 11:30 AM: The ARPA Institute Team, Hrachoohi Boghosian, Maro Aghazarian and myself had a meeting with the National Polytechnic University of Armenia Rector, Mr. Gor Vardanyan. Discussed were the ARPA activities and ways and means of cooperating for the betterment of education, science and technology in the NPUA. Mr. Varadanyan indicated that he has plans for high-level scientific and engineering centers/ laboratories that will be provided with all the required instrumentation and equipment to create the right environment for advanced research and development. His plans were in line-with what we proposed for all universities to do. We promoted the concept of well-equipped facilities with well-trained specialists who can carry out advanced projects that can be very efficient and influential. We gave the same message as



we did to the YSU, that they need to consolidate their resources, design good/advanced facilities which can attract even scientists from abroad and should be used by all the local scientists for research, train/retrain cadre and develop large-scale projects where real value is created. Value could be in the form of high-level publications/articles with innovative results, actual concepts that have enormous potential in the commercial/scientific world or help advance defense related concepts.

September 24, 1:00 PM: I had an interview with CIVILNET and discussed issues that face Armenia, especially the research and educational institutions. Specifically, I stated that Armenia is 30 years behind and that they need exponential growth and revolutionary advancements to become a significant player in the world of science and technology. The whole eco-system needs to be evaluated by experts and special programs developed to strategize for the future safety and prosperity of the population. [Here](#) is the link to the interview.

September 25, 2:30 PM: I met with Asya Khacahtryan, one of the students who participated in the ARPA Institute Invention Competition and discussed with her the ways in which she can improve her project and make it more innovative. Moreover, she was given a small monetary award for encouragement.

September 26, 11:30 AM: Dr. Armen Sedrakian and I accompanied Arevik Sargsyan, the head of the Aragadz 50 meter Radio-Optical Antenna, to visit the facility and examine some details of the existing conditions. Armen is an Astrophysicist from Frankfurt University and we have had numerous virtual meetings with him and several other international scientists to discuss the advantages and disadvantages of



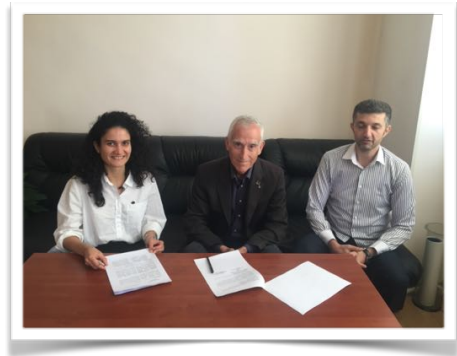
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Report on Trip to Armenia Continued...

refurbishing the Antenna. Moreover, all of the scientists involved have agreed that revamping the Antenna can serve as a vehicle for international recognition and cooperation on research in space measurement.

September 27, 10:30 AM: I attended a conference organized by the department of theoretical physics of the YSU and Armen Sedrakian, where one of the other physicists we have been working with on the Antenna gave a briefing on Modern Physics of Compact Stars and Relativistic Gravity.

September 27, 10:30 AM: Met with the Molecular Biology Institute Director, Dr Arsen Arakelyan and Dr. Lilit Nersisyn, who is now the Director of the new Armenian Bioinformatics Institute, both brilliant minds. We signed an agreement with ABI to help advance Bioinformatics in Armenia by training graduate students. I also attended a briefing by another brilliant young scientist, Dr. Hovakim Zakharyan, who is working on developing new antiviral drugs. We then went to visit the Armenian-Russian University Molecular Biology lab which is also headed by Arsen Arakelyan and scientists of the MBI.



September 28, 12:45PM: Met with the team of graduate students and their advisor, Prof. Karen Trchounian, Hyarpi Aghekyan, Satenik Mirzoyan and Liana Vanyan and discussed their invention proposal and how it can be improved. I encouraged them to think in a more advanced manner and try to come up with modeling techniques where they can design natural fertilizers for specific types of crops/vegetables.

September 28, 12:45PM: Aram Manukyan and I met with a team of entrepreneurs/ scientists who are working on the development of advanced capacitors. We stressed the need for a scientific and professional approach for well-designed experiments and scientific analyses before even thinking about production.

September 28, 2:30PM: Met with Dr. Ani Aprahamian, Director of the AANL and Dr. Amur Margaryan, team leader and principal researcher in Radio-Frequency Photomultiplier Tube and its many potential applications. We suggested to write a specific proposal for each application, where advantages of each over existing similar devices should be highlighted.

September 28, 3:30 PM: Met with the new advanced research team which has the directive to carry out research and development in areas related to defense. Made suggestions and critiqued their various approaches.

September 29, 1:00 PM: Met with the Education Vice President of the National Polytechnic University of Armenia, Dr. Areg Grigoryan. Discussed were the larger participation of the Invention Competition and the need for better and more advanced projects. Moreover, I proposed an on-line seminar on Innovation, scientific and technological achievements, as well as future trends. He agreed to send out the invitations.

September 29, 1:30 PM: Met with Electrical and Electronics Prof. Harut Dashdoyan, who introduced me to one of his students, Tigran. He is doing good work and teaching students circuit design, nanoparticles application, physical vapor Deposition, etc.

September 29, 3:00 PM: Met with Sona Baghdasaryan and Tatevig, representatives of the 1000+ Insurance for Servicemen organization in their office. Discussed were ways and means of fund raising in the USA and provision of contacts who can help organize fundraising events.

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Report on Trip to Armenia Continued...

September 30, 12:00 PM: Had a meeting with the Clean Room Contractor to make sure all is well, and they are doing what is necessary to complete work on October 20. Apparently, there are some cable-works that was missing from the original estimate and that will add a little to the cost. He will send his estimate for the task.

September 30, 8:00 PM: Dinner meeting with Astrophysicists who have been working on the 50 m Radio-Optical Antenna on the Aragadz Mountain to evaluate its value added and to determine its potential scientific impact on Armenia and in general. These are Levon Pogosian, Professor of Physics at Simon Fraser University and Armen Sedrakyan, Professor of Physics at Frankfurt Institute for Advanced Studies.

October 1, 11:30 Am: Had a meeting at the Chemical Physics Institute, with the Director, Seyran Minasyan and Senior Research Scientist, Arkadi Harutyunyan. Also present were Movses Shaboyan and Ashot Vartazaryan.

October 2, 5:30 PM: Met with the Robotics team, young men who participated in the ARPA Institute Invention Competition. Their initiative of building a robot that can disinfect hospitals, clinics and other locations using off the shelf devices, showed that their robot is much cheaper than those in the market. Our experts who evaluated the project had made suggestions for improvement and I discussed those points with them and encouraged them to study hard and achieve a much higher-level success. They are all brilliant young men, Michael (robotics/control), Tigran (medical/biological), Ruben (3D Modeling) and David (Software). Team-work, something that did not exist in Armenia, the future generation of Armenia!

October 3, 12:30 PM: Aram Pakhchanyan drove me to the Ayb school and showed the extensive modern facilities of the school, with all new classrooms and laboratories. Moreover, he explained their project-based teaching methodologies and the FAMLAB, where students learn how to use modern tools and devices for designing and manufacturing purposes.

October 3, 1:30 PM: I met with Armen Kherlopian of the BAJ Accelerator. They find new startups in Armenia and help them achieve their goals and even be able to reach “Unicorn” status. His outlook for new startups in Armenia was highly positive.

October 4, 3:00 PM: Maro Aghazarian and I had a long meeting with the head of the Science Committee of Armenia, Mr. Sargis Hayotsyan and discussed various issues related to improving the educational and research system in Armenia. The ARPA Institute position was stated regarding the urgent need to then attract Diaspora and foreign experts to be willing to spent time and carry out their research in Armenia. Thus, he was told that, if we want Armenia to be a center of attraction, then we need to establish large-scale facilities with all the instrumentation and equipment necessary for modern research. Moreover, proper training of a critical mass of experts that will lead the research and development of modern science and technology. In addition, the Science Committee should define “Big” problems for multidisciplinary tasks for the various centers of excellence, whereby scientists and researchers will have to work together to solve the problems at hand. Also important is to pay special attention to the school system and their curriculum to bring the graduates up to par with modern science and technology and prepare them to take on advanced research projects.

October 5, 2:00 PM: A meeting was held at the Alikhanyan National Lab with Amur Margaryan and his team to listen to and critique the recent developments on the Radio Frequency Photo Multiplier Tube. Present were Ruben Zadoyan and Armen Kherlopian who both interjected constructive suggestions on future directions for their research that may result in marketable products. Moreover, they were urged to work on patents for all the potential product ideas, even starting patent applications in Armenia.

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Report on Trip to Armenia Continued...

October 6, 3:00 PM: Hrachoohi Boghosian and I had a meeting with the Deputy Ministers of the Science Education, Culture and Sports, Ms. Zhanna Andreasyan and Dr. Karen Trchounian. Discussed were ways in which we need to work for the schools' science fairs. They were proposed to organize a training session for teachers for them to be able to organize science fairs in their respective schools. It was agreed to start training teachers in the Davush region, where the Government has initiated a new program, whereby all the schools will be renovated, laboratory facilities will be built and special training for STEAM education will be given to the teachers. The school system and their curriculum to bring the graduates up to par with modern science and technology and prepare them to take on advanced research projects.



October 9, 5:00 PM: A meeting was held with the Rector of the Agrarian University of Armenia, Vardan Urutyun and learned about their special programs. They have modernized quite a few programs and have special relations with several universities and research centers worldwide. He was told about ARPA Institute activities and potential cooperation in technical advice and on-line seminars.

October 9, 5:00 PM: A Wounded Heroes event by Ararat Foundation was attended where over 45 wounded soldiers were honored.

October 18, 3:00 PM: Visited the AANL Clean Room and found out that the HEPA filters were installed in the wrong place. Three of the six should have been installed near the ceiling on the walls, while they were placed near the floor on the walls. They had misunderstood the numerous explanations that: three of the filters should be installed on the ceiling and connected to the air conditioner, to get air from outside and push it through the filters. While the other three are for recirculation and re-filtration of the air in the room by taking the air from holes on the walls near the floor and pushing it through the 3 filters on the walls that are near the ceiling. The contractor, the chief engineer of AANL and the Director of AANL were present at the discussions.

October 20, 6:00 PM: Had a meeting with the Director of the Science Fairs in Armenia, Harutyun Sargsyan and discussed with him the primary steps that need to be taken to expand the science fairs to as many schools as possible. The announcements should be sent by e-mail to all teachers, the ARPA Institute link for science fairs should also made available as should the link to the International Science and Engineering Fair.

October 20, 7:00 PM: Had a dinner meeting with Dr. Ani Aprahamian, Hrachoohi Boghosian and her husband Bedros Tomassian. Discussed were issues related to the Clean Room, the Scientific research, high technology development and needs for improvement.

October 21, 9:30 AM: Barkev Iskikian, the Executive Director of ARPA Institute in Armenia and I had a meeting with the Deputy Minister of Finance and discussed the urgent need for consolidation of resources, establishment of Centers of Excellence in a few key fields and the re-training of a cadre of scientists, as well as the diversification of industry and the allocating special budget for science fairs in Armenia. He suggested that I talk with the Minister, Tigran Khachatryan.

October 21, 2:00 PM: Had a long meeting with the Disapora High Commissioner, Mr. Zareh Sinanian and discussed the ways and means of consolidating all the resources in the Institutes of the Academy, as well

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Report on Trip to Armenia Continued...

as the universities. Moreover, the need for big and well-equipped centers of excellence in a few key fields is highly important for the development of new technologies, as well as for the diversification of the economic development in Armenia. Also discussed were the urgent need for improvement of the bureaucratic complexities, the creation of an environment of trust, cooperation and hope.



October 21, 4:30 PM: Had a meeting with Minister of Finance, Hon. Tigran Khachatryan and discussed issues related to consolidation of resources, retraining of a cadre of scientists in using modern tools, simplification of bureaucratic complexities, as well as budget issues. The Minister promised to present these ideas to the Prime Minister and encourage the implementation.

There Is Much To Do For Armenia
Please Help Us Accomplish More
Please Donate Generously



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Donations to ARPA Institute in 2021

Apkarian, Vartkess Ara	\$5,000	Bidanian, Bedros	\$ 100
Minnetyan, Levon	\$3,500	Boghosian, Bruce	\$ 100
Aprahamian, Ani	\$3,000	Chalyan, Anush	\$ 100
Cabayan, Hriar	\$2,000	Dagdighian, Lisa	\$ 100
Tanielian, Aram	\$2,000	Davidian, Aspet	\$ 100
Adourian, Aram S.	\$1,000	Dermenjian, Ago	\$ 100
Gurgenians, Hrayr & Lina	\$1,000	Doumanian, Sonya	\$ 100
Keshishian, Ara	\$1,000	Goenjian, Armen	\$ 100
Yarian, Andre	\$ 824	Hakobyan, Tigran	\$ 100
Babian, Meher	\$ 500	Heditsian, Diane	\$ 100
Manoukian, Jerry	\$ 500	Hovakimyan, Naira	\$ 100
Ovanessian, Lida	\$ 500	Karakashian, Hovhannes & Mary	\$ 200
Panossian, Hagop	\$ 500	Khanarian, Garo	\$ 100
Karlozian, Paul	\$ 400	Kocharian, Armen	\$ 100
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Pogosian, Levon	\$ 200	Dedeyan, Catherine	\$ 50
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Shirinian-Orlando, Anahid	\$ 200	Maghakyian, Simon	\$ 50
Tomassian, Albert	\$ 200	Marashlian, Levon	\$ 50
Vorsganian, Sara	\$ 200	Ouzounian, Seza	\$ 50
Abramyan, Ara	\$ 150	Rayyes, Azad	\$ 50
Surmenian, Harutyun	\$ 150	Tavlian, Aline	\$ 50
Minassian, Ara	\$ 135	Tutunjian, Jirair	\$ 50
Toumanian, Kadjazen	\$ 120	Tahmassian, Andre	\$ 40
Abrahamian, Ara	\$ 100	Goukasian, Levon	\$ 25
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