

FAST DISCOVERING
THE FUTURE

PROGRESS REPORT

JULY 2022
JUNE 2023

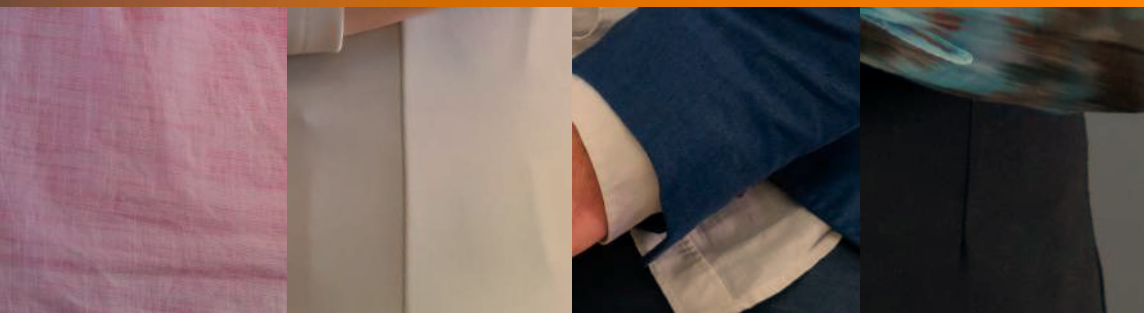


TABLE OF CONTENTS

3		Letter from the CEO
4		Mission & Vision
5		Governance
11		Impact since Inception
13		Programs Advancement 2022-2023
13		Education
17		Research
28		Commercialization
30		Ecosystem Level - Global Innovation Forum
32		Directions for 2023-2028 and Programs for 2023-2024
33		Global Supporters
38		Financials: Income and Expenses

LETTER FROM THE CEO



Dr. Armen Orujyan

Founding CEO, FAST

When ideas, contributions, and a belief in a brighter future align harmoniously, extraordinary achievements are brought to life, creating a world full of endless possibilities and awe-inspiring accomplishments.

It makes me happy that we are on the path of achieving this unity, which supports our main objective: to build a strong, innovative Armenia powered by science and technology.

As I reflect upon our journey, I am thrilled to share with you the positive transformations realized by your valuable contributions.

In a series of remarkable achievements, the ADVANCE Research Grants has expanded its teams from 2 to 10, with their works now being recognized in reputable journals. We've funded 41 new researchers, bringing the total number of active researchers to 68. Additionally, after a successful five-year journey, the Science and Technology Angels Network - STAN - is becoming an independent not-for-profit entity, continuing its mission of supporting early-stage science and technology-driven startups in Armenia. Moreover, Generation AI, a high school pilot program aimed at fostering a new generation of AI researchers and innovators, is making substantial progress. Collaborating with the Ministry of Education, Science, Culture and Sports of Armenia, 16 schools from Yerevan and 6 regions have been selected for the program's pilot phase, which starts from September 2023.

Our programs are the very heart of our organization. Through them, we have addressed complex societal challenges and pushed the boundaries of scientific innovation. The positive change we have witnessed in our operations is a testament to your generosity's impact.

I sincerely appreciate your unwavering support and partnership in driving our Foundation's progress and positively impacting the world.

MISSION & VISION

FAST aims to foster and accelerate the advancement of science and innovation in Armenia and beyond.

Our long-term vision is Armenia's transformation into a top ten Global Innovator nation and a top five nation in data science and artificial intelligence.

FAST has designed and structured numerous programs and initiatives to become independent parts of the science, technology, and innovation (STI) ecosystem, ensuring their continuing sustainability.

FAST was founded on 20 June 2017 by Dr. Noubar Afeyan, Artur Alaverdyan, Ruben Vardanyan, “Ayb” Educational Foundation, and “Luys” Cultural, Scientific, Educational Foundation.

The Foundation’s management is composed of the Board of Trustees and the Chief Executive Officer. The Board of Trustees is the Foundation’s highest management body. The Foundation also has a Board of Advisors, an advisory body and an integral part of its organizational structure.

GOVERNANCE



André Andonian
Chairperson of the Board

Senior Partner Emeritus, Special Advisor, McKinsey & Company
CEO, Andonian Advisory
Chairperson of the Board of Directors, Cognaize
Singapore



Dr. Noubar Afeyan
Co-Founder, Board Member

Founder and CEO, Flagship
Pioneering
Co-Founder and Chairman,
Moderna
United States

BOARD OF TRUSTEES

Members of our Board of Trustees are experts, innovators, leaders, and highly respected figures in the world of academia, science, business, and innovation. They bring vast experience in developing successful ventures, leading thriving science-backed organizations and global companies, as well as lecturing at top academic institutions. They have all made distinguished contributions to social causes, supported social ventures and Armenia-focused initiatives.



Artur Alaverdyan
Co-Founder, Board Member

Serial Entrepreneur and
Venture Investor
Owner and Chairman,
ProfHolod
Founder, SolarOn
Armenia



Dr. Ingrid Hengster
Board Member

Managing Director,
Country CEO, Global
Chairman of Investment
Banking, Barclays
Germany

BOARD OF ADVISORS

The Board of Advisors is the primary guiding entity in the construction of the overall strategy and program mapping of FAST. It provides the Board of Trustees and FAST management with invaluable topical expertise and assists in the decision-making process.

The Board of Advisors is composed of members representing the academic, scientific, technological, and entrepreneurial communities. They are esteemed and highly-regarded figures in their respective fields, combining vast expertise and experience on a global scale. Their functions revolve around guiding as a board and sitting as individual members on specialized FAST committees.



Dr. Mary Papazian

Chairperson of the Board
Executive Vice President,
Association of Governing
Boards of Universities
and Colleges
Former President, San Jose
State University
United States



Dr. Garabed Antranikian

Director, Center for Biobased
Solutions, Hamburg University
of Technology
Germany



Hovhannes Avoyan

Founder and CEO, Picsart
Armenia



Dr. James Chavin

President, Teza Technologies
United Kingdom



**Professor the Lord Darzi of
Denham, OM KBE PC FRS**

Co-Director, Institute of Global
Health Innovation, Imperial
College London
United Kingdom



Gabrielle Gauthey

High Representative of the CEO
to the European Institutions,
Senior Vice-President for
European Public Affairs,
TotalEnergies
France



Ron Hovsepian

Executive Partner, Flagship
Pioneering
President and CEO, Indigo Ag
United States



Dr. Avak Kahvejian

General Partner, Flagship
Pioneering
United States



**Sarkis Kiramijyan,
MD, FACC, FSCAI**

Founder and Director,
Structural Heart Diseases
program, Adventist Health
White Memorial Hospital
United States



Ari Libarikian

Senior Partner, McKinsey
& Company
United States



Serge Tchuruk

Consultant
Former Chairman,
Alcatel-Lucent Enterprise
France



Dr. David Yang

Serial Entrepreneur
Founder and Chairman, ABBYY
United States

NEXTGEN COUNCIL

In October 2017, FAST created the **NextGen Council**, which brings together the talent, knowledge, and skills of a number of young and motivated scientists and technologists. The Council places a special emphasis on gender and geographical diversity in the selection of its members. Council members come from the fields of bioscience, medical sciences, machine learning, and quantum engineering, as well as technological, innovation, and entrepreneurial fields. The Council's geographical spread, which extends from Armenia to Europe and America, also ensures that the worldviews and perspectives upon which it can draw are comprehensive and diverse.



Carla Abrahamian

PhD Candidate in Molecular
Pharmacology, Ludwig
Maximilian University of
Munich, Germany



Hayk Aslanyan

Researcher, System
programming laboratory,
Armenia



Aramayis Dallakyan

Senior Statistician & Software
Developer, StataCorp LLC, USA



David Ghukasyan

Web Developer, Armenia



Hovakim Grabski

Research Scientist,
Russian-Armenian University,
Armenia



Hrayr Harutyunyan

PhD, University of Southern
California, USA



Arpine Kozmalyan
Software Engineer, Birthright
Armenia, Italy



Larisa Mazmalyan
Founder and Director of
Strategy & Innovation,
Brooklin Consulting, Canada



Shushan Sargsian
Recent PhD Graduate from NYU School
of Medicine, Director of Early Career
Opportunities, Clear Direction Mentoring,
USA

OUR TEAM

The Foundation's management team ensures the implementation of our strategy. Our team's vast experience in our priority scientific disciplines is an important driving force for the Foundation and its programs. The management team also puts into best use the diverse skill sets of our wider team members to achieve the best results and further develop their professional capabilities.

FAST's management team is composed of Vice Presidents and is led by the Chief Executive Officer.



Dr. Armen Orujyan
Founding CEO



Suzanna Shamakhyan
Vice President of Strategic
Programming



Marine Khachatryan
Vice President of Operations



Veronika Aghajanyan

Research Advancement
Programs Lead



Ruben Osipyan

Entrepreneurial Programs
Lead



Anush Ayvazyan

Educational Programs Lead

Our team of 30 bright young professionals has tremendous enthusiasm and works tirelessly and with the utmost dedication to our organization's mission. While each individual in our team has their own story, we are all united under the same vision of Innovative Armenia 2041.

The team is composed of three main units: Strategic Programming, Global Engagement, and Operations. Two of them are led by a Vice President who holds responsibility for overseeing the activities within their respective unit. The Vice Presidents are also tasked with coordinating our overall tactical work, managing operational tasks and objectives, and ensuring that the outputs of all units align with the overarching organizational strategy at the core of our operations. By fostering cohesion between the strategic and operational aspects, they contribute to the successful execution of the Foundation's mission.



IMPACT SINCE INCEPTION

25
programs

10,000
beneficiaries

Since its founding, FAST has implemented a total of 25 programs, including 9 in Education, 5 in Research, 9 in Commercialization, and 2 in the Ecosystem level.

By June 2023, the foundation had engaged more than 2,000 direct beneficiaries with its programs, and another 8,000 individuals benefited from more than 100 workshops, events, and network-building initiatives.

EDUCATION



- 3300+ training hours conducted
- Nearly 3400 individuals trained and participated in educational and capacity-building events, of which 1767 directly upskilled in different STEM-related disciplines, including:

415

entrepreneurs

871

students

215

industry and
administrative staff

151

researchers

115

teaching
staff

RESEARCH



100+

local researchers
funded

33

international research
collaborations
launched

100+

international
researchers supported
in Armenia

75+

scientific papers
published

COMMERCIALIZATION



48

angel investors

35

startups funded

500+

entrepreneurs trained

\$923K+

invested in startups

270

startups benefited

\$1MLN

invested in
venture-builders
(ASCENT and InVent)

PROGRAMS ADVANCEMENT 2022-2023 EDUCATION

We recognize the crucial role of skilled human resources in advancing Armenian science, technology, and innovation (STI) and place a strong emphasis on enhancing Armenia's intellectual capital.

Taking into account the current technological developments and Armenia's needs, we are focusing in particular on Data Science (DS) and Artificial Intelligence (AI) as the fields with most potential impact on innovation and national security.

KEY EDUCATION PROGRAMS:

- Generation AI
- Reimagining Education
- SciNova
- "Unit 1991" Education and R&D

GENERATION AI



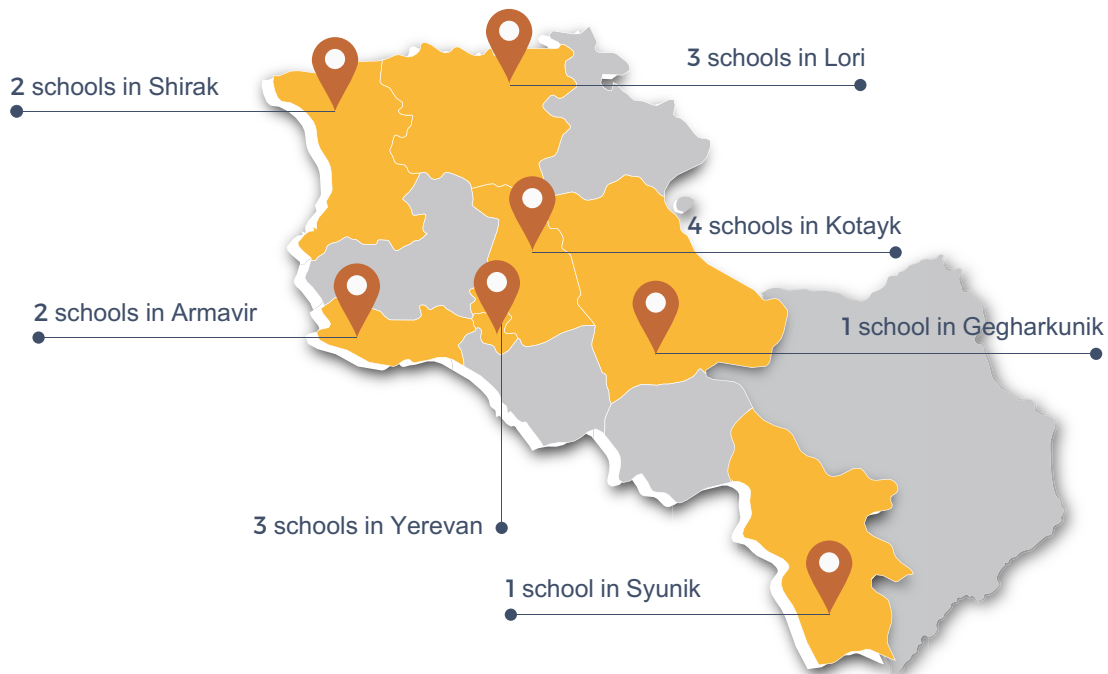
Generation AI is a multi-stage educational program designed to create an education and career pipeline for AI researchers and innovators. By being integrated directly in the public school curriculum, the program aims to have a continuous impact on education at the core level and foster a new generation of specialists equipped to thrive in an AI-driven world. By being integrated directly in the public school curriculum, the program aims to have a continuous impact on education at the core level and foster a new generation of AI researchers and innovators equipped to thrive in an AI-driven world.

At the high school stage, Generation AI focuses on the enhancement of students' competencies and motivation for AI research careers by providing prerequisites in math and computer science, raising the prospects for further study and work through career orientation programs, and implementing differentiated AI education with credit transfer options.

- Implemented in partnership with the Ministry of Education, Science, Culture and Sports of the Republic of Armenia, academia, and industry professionals,
- A multi-stage program with the aim of creating a continuous educational path that identifies and nurtures talent from high school through to university and beyond,
- An unprecedented step toward systemic changes in education with long-term benefit for Armenia’s research and technological capacity.

KEY ACCOMPLISHMENTS:

- An additional **agreement with the Ministry of Education, Science, Culture and Sports (MoESCS)** was signed on June 15, 2023, based on which the call for schools to pilot the program was opened on June 15, 2023, and closed on June 30, 2023.
- Applications from 47 schools were received, including 43 public and 4 private schools from all regions of Armenia (12 schools from Yerevan and 35 schools from regions). In response to the overwhelming interest, **we expanded the initial plan from 10 to 16 schools in Yerevan and 6 regions selected** for the program’s pilot phase starting in September 2023.



- **Advisors, Task Force, and a Working Group were formed** to ensure a comprehensive validation process for the program. This rigorous approach ensures that the program is tailored to deliver high quality and engagement from field specialists. 22 experts are engaged.
 - The Working Group develops resources and programs that incorporate global best practices and local requirements,

- These resources are reviewed by a Task Force consisting of experts from academia and industry,
 - The strategic guidance is provided by an advisory group.
- **Python Course in Armenian:** In collaboration with our partner, Profound Academy, an Armenian course for teaching the Python programming language has been created. This prerequisite course for learning AI is now available on their platform, allowing students to learn programming skills according to our curriculum.
 - **Teacher guidelines for math** were developed to support teachers in delivering advanced math instruction with a new and engaging methodology and enhancing students' learning outcomes.
 - **AI Literacy and Career Orientation Program:** In partnership with learning platform Zleenk, a set of videos introducing AI and presenting different professions in the field has been developed. These videos can be accessed through their free app and serve as an excellent resource for nationwide career orientation.

REIMAGINING EDUCATION

Today's educational systems are limited in their ability to cultivate innovative thinking and foster STEM talents early on. To nurture future innovators, we must rethink the educational models of old and ensure that they meet not only present demands but also those of the future. Reimagining Education is an initiative by FAST set to tackle this global issue through a holistic approach towards educational transformation with input from leading thinkers and multidisciplinary specialists. Currently in its ideation stage, the initiative aims to conduct thorough research and develop a full model of development and approach to teaching starting from early childhood, with the goal of identifying and growing innovative potential in all students.



KEY ACCOMPLISHMENTS:

The “Global Thinkers Salon” was implemented on April 22-23, 2023 in Dilijan, Armenia, with the involvement of 14 global thought leaders and specialists and co-funded by the U.S. Office of Naval Research Global. The primary focus of the conference was on the future of education, with the intention of inspiring innovative thinking and exploring alternatives to the current educational ecosystem. Moderated debates were conducted to delve into the future of education while brainstorming sessions engaged diverse expert groups in developing actionable ideas for transforming the education system. All the proposed approaches and innovative solutions generated during the conference will be embedded into actionable research and pilot programs.



Elizabeth Filippouli

Journalist, Writer, and Social Entrepreneur
Founder of Global Thinkers Forum and
Athena4O

“ PARTICIPANT’S STORY

I was delighted to be in Armenia with the Foundation for Armenian Science and Technology as part of an international meeting of minds discussing the future of education and brainstorming for FAST’s educational program “Re-imagining Education” which aims to develop a novel, complete model for educational transformation.

Thanks to the FAST team for curating a diverse delegation to experience the work underway and for the opportunity to collectively re-imagine how we can continue to learn but also understand the importance of unlearning. Over the last years Armenia is emerging as a hub of creativity, STEM, and education.



RESEARCH

In order to support globally competitive research output in Armenia, FAST has designed and launched a range of strategic programs to support the development of the local research community and connect it with leading international scientists.

KEY RESEARCH PROGRAMS:

- ADVANCE Research Grants
- Armenia's Energy Independence Roadmap

ADVANCE RESEARCH GRANTS

In 2020, FAST established the ADVANCE Research Grants program to set ground for the development of scientific directions in STEM-related fields in Armenia.

This pioneering platform invites distinguished scientists from all around the world to lead new teams of ambitious Armenian researchers. The experience and network that emerging local researchers gain in the program boost their professional growth, enable effective global collaboration, and significantly increase research output in target fields. The comprehensive financial and logistical support provided by FAST and its partners work toward putting Armenia on the map of cutting-edge scientific research worldwide.

The Advance Armenia Gala 2022 and the subsequent Advance Armenia Global Campaign in 2023 attracted additional resources for scaling and sustaining the ADVANCE program.



KEY ACCOMPLISHMENTS:

- The number of teams has expanded from 2 to 10. The target is met with 8 new research projects launched in Computer Vision, Bioinformatics, Data Science, Drug Discovery, Materials Science, Neuroscience, Radiobiology, and Mathematical Analysis,
- 41 new researchers are funded (total number of active researchers is 68),
- 6 new partners and host institutions are engaged (total number is 7),
- 6 publications in Q1 international journals and top-tier conference proceedings are conducted,
- 7 new academic courses were conducted by PIs and involved over 250 beneficiaries in total.

BIOTECHNOLOGY, 2020-2024



Principal Investigator: **Prof. Garabed Antranikian**, Head of the Institute of Technical Microbiology
Director of the Center for Bio-based Solutions, Hamburg University of Technology
Team: 7 local researchers
Co-funded and co-implemented by: Yerevan State University

The project seeks to develop innovative technologies to secure the efficient utilization of organic waste streams from various industries in Armenia.

SENIOR RESEARCHERS



Anna Poladyan
Associate Professor,
Department of
Biochemistry,
Microbiology and
Biotechnology, Faculty
of Biology, Yerevan
State University



Ani Paloyan
Senior researcher, Protein
Technology (former
Molecular Biology)
Laboratory, Scientific
and Production Center
“Armbiotechnology”
National Academy of
Sciences of the Republic
of Armenia state nonprofit
organization



Sargis Aghayan
Head of Research
Group of Molecular
Parasitology, Scientific
Center of Zoology and
Hydroecology, National
Academy of Sciences of
the Republic of Armenia



Hovik Panosyan
Associate Professor,
Department of
Microbiology and
Biotechnology, Yerevan
State University



Armine Margaryan
Associate Professor,
Chair of Biochemistry,
Microbiology and
Biotechnology, Faculty
of Biology, Yerevan
State University

JUNIOR RESEARCHERS



Diana Ghevondyan
MA degree in
Microbiology and
Biotechnology, Yerevan
State University



Ela Minasyan
Junior researcher, Laboratory of biologically active
compounds purification and certification, SPC
“Armbiotechnology” National Academy of Sciences
of the Republic of Armenia

MACHINE LEARNING, 2020-2024



Principal Investigator: **Prof. Arnak Dalalyan**, Professor of Statistics, Director of the Center of Research in Economics and Statistics at CREST, ENSAE Paris

Team: 3 local, 1 international researchers

Co-funded and co-implemented by: Yerevan State University

The team is conducting a thorough mathematical analysis of machine learning algorithms to understand their strengths and weaknesses and thus create a solid foundation for future innovations tackling various real-world challenges.

SENIOR RESEARCHERS



Arshak Minasyan
Postdoctoral fellow,
CREST-ENSAE



Sona Hunanyan
PhD in Biostatistics,
University of Zurich

JUNIOR RESEARCHERS



Tigran Galstyan
PhD in Mathematical
Modelling, Computational
Methods and Software
Complexes, Russian-
Armenian University



Elen Vardanyan
MA degree in
Mathematics in Data
Science, Technical
University of Munich

NEUROSCIENCE, 2022-2026



Principal Investigator: **Prof. Apkar Vania Apkarian**

Director, Center for Translational Pain Research, Northwestern University
Feinberg School of Medicine

Team: 9 students are currently undergoing a traineeship program as an educational step of the ADVANCE research project

Co-funded with Apkarian Foundation, hosted by Yerevan State Medical University

The project aims to enhance and accelerate neuroscience research in Armenia by training the next generation of internationally recognized, highly impactful biomedical researchers.

COMPUTER VISION, 2022-2026



Principal Investigator: **Prof. Sos Aghaian**

Distinguished Professor of Computer Science at CSI and the Graduate Center, City University of New York

Funded by: Sarkis and Nune Sepetjian

Team: 7 local researchers, 1 research intern

Hosted by: Yerevan State University

The research project aims to develop fast, reliable, automatic, and non-destructive remote photovoltaics (PV) sensing and monitoring mechanisms to accelerate damage inspection through drone imaging and AI image analysis.

SENIOR RESEARCHERS



Anna Hovakimyan
Associate Professor,
Faculty of Informatics
and Applied
Mathematics, Yerevan
State University



Hayk Gasparyan
PhD student,
Probability Theory and
Mathematical Statistics,
Faculty of Mathematics
and Mechanics, Yerevan
State University



Sargis Hovhannisyan
PhD student,
Probability Theory and
Mathematical Statistics,
Faculty of Mathematics
and Mechanics,
Yerevan State University



Hrach Ayunts
PhD student, Computational
Mathematics section, Faculty
of Informatics and Applied
Mathematics, Yerevan State
University

JUNIOR RESEARCHERS



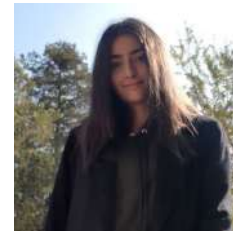
Anush Khachatryan
MA student, Computer
Science, Faculty of
Informatics and Applied
Mathematics, Yerevan
State University



Ejmin Vartoumian
MA student, Applied
Statistics, Faculty of
Informatics and Applied
Mathematics, Yerevan
State University



Narek Sardaryan
BA degree in
Mathematics, Faculty
of Mathematics and
Mechanics, Yerevan
State University



Tatevik Davtyan
BA student, Computer
Science, American
University of Armenia

RESEARCH INTERN

MATERIALS SCIENCE, 2023 - 2027



Principal Investigator: **Prof. Alexander Mukasyan**

Director of the Advanced Electron Microscopy Core at Integrated Imaging Facility, University of Notre Dame

Team: 5 local researchers

Hosted by: Institute for Physical Research of National Academy of Sciences of the Republic of Armenia

The research project aims to develop a novel energy-efficient method for the synthesis of nanomaterials. A novel approach will be used to fabricate core-shell metal-carbon magnetic nanoparticles.

SENIOR RESEARCHERS



Aram Manukyan

Head of Solid State Laboratory, Institute for Physical Research of National Academy of Sciences of the Republic of Armenia



Astghik Kuzanyan

Researcher, Institute of Physical Research of National Academy of Sciences of the Republic of Armenia

JUNIOR RESEARCHERS



Harutyun Gyulasaryan

Researcher of Solid State Physics Laboratory, Institute of Physical Research of National Academy of Sciences of the Republic of Armenia



Armenuhi Sargsyan

PhD in Mathematical Analysis and Differential Equations, Gyumri State Pedagogical Institute after M. Nalbandyan



Davit Hambarzumyan

MA student, Materials Science, Faculty of Chemistry, Yerevan State University

DRUG DISCOVERY, 2023 - 2027



Principal Investigator: **Prof. Ruben Abagyan**

Professor at UC San Diego Skaggs School of Pharmacy and Pharmaceutical Sciences

Funded by: Joe Barnes

Team: 4 researchers, 2 more are undergoing the selection process

Hosted by: L.A. Orbeli Institute of Physiology, National Academy of Sciences of the Republic of Armenia

The research project aims to develop a comprehensive and up-to-date computational platform based on the growing body of data, new 3D-AI methods, and continuously updated in silico models, for the discovery of new targets and binding pockets, screening for new binders/modulators, or repurposing of existing drugs.

SENIOR RESEARCHERS



Zaruhi Karabekian
Head of Immunology and Tissue Engineering Laboratory, Orbeli Institute of Physiology



Hovakim Grabski
Researcher at research group "IKAR" at the Institute of Biomedicine and Pharmacy, Russian-Armenian University

JUNIOR RESEARCHERS



Siranuysh Grabska
Researcher at research group "IKAR" at the Institute of Biomedicine and Pharmacy, Russian-Armenian University



Gohar Sevoyan
Doctor of Laboratory at Best Life Medical Center
MA degree in General and Medical Biochemistry, Yerevan State University

VINE BIOINFORMATICS, 2023- 2027



Principal Investigator: **Prof. Hans Binder**

Senior Scientist and the former Founding Managing Director at the Interdisciplinary Centre for Bioinformatics, University of Leipzig

Funded by: Joe Barnes

Team: 6 local, 2 international researchers

Hosted by: Armenian Bioinformatics Institute

The research project aims to develop machine learning-based bioinformatics methods for plant genomics and bridge the latest advances in cutting-edge genomic bioinformatics and data science with viticulture in Armenia and aid the wine industry.

SENIOR RESEARCHERS



Kristina Margaryan
Head of the Research Group of Plant Genetics and Immunology, IMB National Academy of Sciences of the Republic of Armenia



Maria Nikoghosyan
Assistant lecturer, American University of Armenia
Research assistant, Armenian Bioinformatics Institute



Tomas Konecny
PhD in Molecular and Cell Biology and Genetics, University of South Bohemia in České Budějovice

JUNIOR RESEARCHERS



Anush Baloyan
BA student, Data Science,
American University of
Armenia



Hripsime Gasoyan
MA student, Applied
Statistics and Data
Science, Faculty of
Mathematics and
Mechanics, Yerevan
State University



Emma Hovhannisyan
BA student, Data Science,
American University of
Armenia



Levon Galstyan
BA degree in Food
Science and Technology,
Armenian National
Agrarian University



Shengchang Duan
MA degree in
Bioinformatics, Kunming
University of Science and
Technology

DATA SCIENCE, 2023 - 2026



Principal Investigator: **Prof. Nelson Baloyan**

Professor at the Department of Computer Sciences, Universidad de Chile

Co-funded and co-implemented by: American University of Armenia

Team: 5 local researchers, 3 research interns

This project aims to focus on the development of machine learning models implementing supervised and unsupervised learning which achieve accuracy, interpretability, and robustness in the presence of ill structured input data.

SENIOR RESEARCHERS

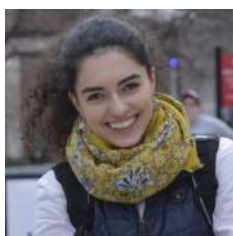


Ashot Harutyunyan
Head of AI Lab, Yerevan
State University



Arnak Poghosyan
Head of Department,
Adjunct Lecturer,
Institute of Mathematics,
American University of
Armenia

JUNIOR RESEARCHERS



Aneta Baloian
BA degree in Computer
Science, American
University of Armenia



Maral Chahverdyan
MA degree in Computer
Information Science,
American University of
Armenia



Karen Petrosyan
BA student, Computer
Science, American
University of Armenia

RESEARCH INTERNS



Edgar Davtyan

MA student, Data Science,
IU International University
of Applied Sciences



Alexander Aramyan

BA student, Computer
Science, American
University of Armenia



Aram Adamyan

BA student, Data Science,
American University of
Armenia

RADIOBIOLOGY, 2023 - 2027



Principal Investigator: **Prof. David Goukassian**

Professor at the Icahn School of Medicine at Mount Sinai, USA

Hosted by: Institute of Molecular Biology

Team: 7 local researchers, 1 research intern

The project aims to determine whether space or terrestrial radiation is associated with a greater lifetime risk of developing genomic instability and candidate CHIP “driver” gene clonal expansion. It also will identify sex-specific differences in inherent susceptibility for clonal hematopoiesis in animal models and develop genetic biomarkers of individual susceptibility to the effects of space radiation for early detection and screening.

SENIOR RESEARCHERS



Arsen Arakelyan

PhD, Director of the
Institute of Molecular
Biology National Academy
of Sciences of the Republic
of Armenia



Gohar Tsakanova

Head of Laboratory,
and Leading scientist,
CANDLE Synchrotron
Research Institute and
Institute of Molecular
Biology National
Academy of Sciences of
the Republic of Armenia



Ani Stepanyan

Senior researcher,
Laboratory of Human
Genomics, Institute of
Molecular Biology National
Academy of Sciences of
the Republic of Armenia



Siras Hakobyan

PhD student, Molecular
biology, bioinformatics,
Institute of Molecular
Biology National Academy
of Sciences of the Republic
of Armenia

JUNIOR RESEARCHERS



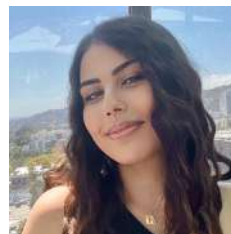
Suren Davitavyan
PhD student,
Bioinformatics,
Bioengineering and
Molecular Biology, Russian-
Armenian University



Gisane Khachatryan
BA degree in Institute
of Molecular Biology,
Russian-Armenian
University



Tamara Sirunyan
BA degree, Russian-
Armenian University



Ania Baghoomian
BA student in Human
Biology and Society,
University of California

RESEARCH INTERNS

MATHEMATICAL ANALYSIS, 2023-2027



Principal Investigator: **Prof. Michael Ruzhansky**

Professor at Ghent University

Hosted by: Yerevan State University

Team: 3 relocated senior researchers, 2 local junior researchers, 2 research interns

This project aims at developing a novel idea proposed by the PI and collaborators that promises to become a powerful method for handling singular partial differential equations (PDEs) and creating a general framework for them, as well as helping young Armenian mathematicians to learn and grow into top class specialists in this highly demanded subject.

SENIOR RESEARCHERS



Zhirayr Avetisyan
Senior Researcher,
Ghent University



**Divya Joseph
Kayyunnapara**
PhD degree in
Partial differential
equations and fluid
dynamics, Visvesvaraya
Technological University

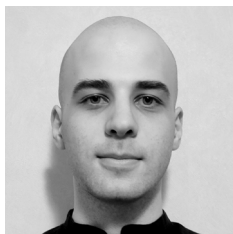


Zahra Keyshams
PhD degree in Harmonic
Analysis, University of
Isfahan



Monire Mikaeili Nia
PhD degree in Department
of Mathematics, Institute
for Advanced Studies in
Basic Sciences

JUNIOR RESEARCHERS



Aram Nazaryan
PhD student, Department of Algebra and Number Theory, Yerevan State University



Gor Chalyan
BA student, Physics, Yerevan State University

RESEARCH INTERNS



Mery Galstyan
BA student, Actuarial and Financial Mathematics, Yerevan State University

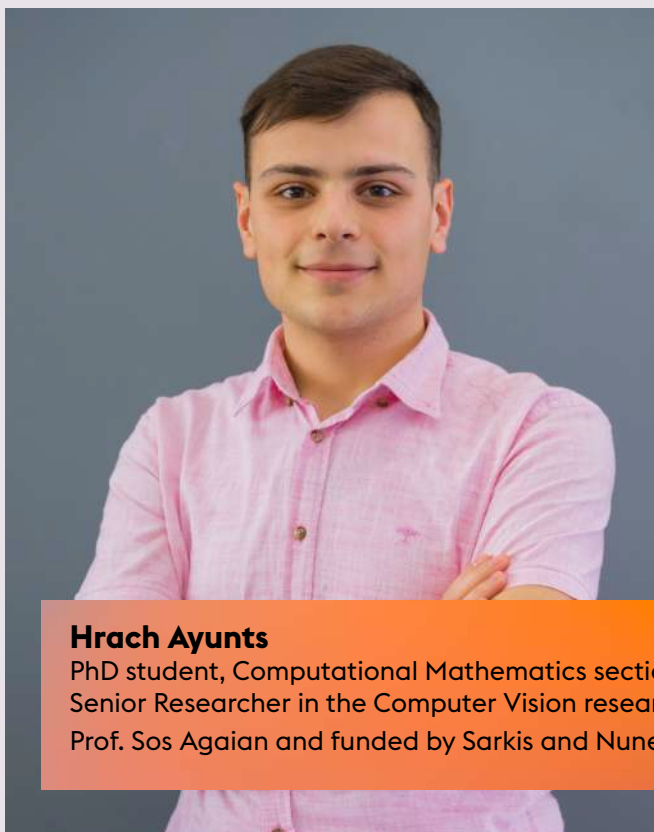


Alesya Ghandilyan
BA student, Engineering Sciences, American University of Armenia



BENEFICIARY STORY

Before being selected as a senior researcher of the Computer Vision research project, Hrach Ayunts was a full-time computer vision engineer at Picsart Academy and was completely engaged in industry like many of his peers. He received his bachelor's and master's degrees in the Faculty of Informatics and Applied Mathematics and is currently doing his Ph.D. in computational mathematics at Yerevan State University. His passion for science and the prospects of scientific and technological development afforded by ADVANCE Research Grants made him leave his job at the company and apply his research interests and knowledge in scientific research. Hrach believes that the research he is currently conducting under the leadership of Prof. Sos Agaian is vital as solar panel energy is considered the most eco-friendly way of generating electricity, and he is enthusiastic to contribute to the field's development in Armenia and globally.



Hrach Ayunts

PhD student, Computational Mathematics section, Yerevan State University
Senior Researcher in the Computer Vision research project led by Prof. Sos Agaian and funded by Sarkis and Nune Sepetjians

ARMENIA'S ENERGY INDEPENDENCE ROADMAP

In partnership with SolarOn, FAST shaped Armenia's Energy Independence Roadmap aiming to draw a path toward Armenia's self-sustainable future and accelerate the adoption of local renewable energy sources in an economically efficient manner. Aiming to propose precise scenarios with cost estimation and investment plans for investors and policy makers, the Roadmap will deeply analyze the opportunities and obstacles related to scaling the share of various renewable energy sources, including solar, wind, hydro, and biomass.



KEY ACCOMPLISHMENT:

A draft roadmap has been developed by a group of researchers and is being reviewed by an independent international committee formed by FAST.

COMMERCIALIZATION

Recognizing the critical need to boost scientific commercialization in Armenia, FAST has placed a heavy focus on creating programs that will help build science-intensive innovation and ensure pre-seed funding for companies created through this pipeline.

KEY RESEARCH PROGRAMS:

- Science & Technology Angels Network (STAN)
- B-On Biotech Prototyping Lab
- Advanced Solutions Center (ASCENT)

SCIENCE & TECHNOLOGY ANGELS NETWORK (STAN)

In February 2018, FAST took the initiative to create a platform that will unite prominent Armenian entrepreneurs worldwide to invest in early-stage science-intensive startups and help them grow by contributing their own entrepreneurial skills and capital. This platform, called the Science & Technology Angels Network (STAN), became a key program and an important funding starter for Armenia. STAN is one of Armenia's pioneering angel networks.



KEY ACCOMPLISHMENTS:

- The number of angels has grown to 43 from 8 countries,
- 3 pitching sessions were organized (the total number of pitching sessions to date is 13),
- 6 investment deals were closed (total \$622K was invested in 14 portfolio startups by STAN angels)



“ BENEFICIARY STORY

Nairi Baghdasaryan, PhD in nuclear engineering, dared to embark on an entrepreneurial journey. In early 2021, Nairi joined the InVent venture-building program run by FAST. Following the program, Nairi collaborated with Artashes Baghdasaryan and Arthur Hovhannisyan, who became his co-founders, to start developing BLiNK - an AI-powered application designed to revolutionize the way people work. By monitoring users' working behavior, BLiNK encourages improved eye health, corrects sitting posture, and boosts productivity.

Thanks to InVent, Nairi was able to sharpen his skills, refine the concept, and ultimately become one of the program's winning teams to receive prototyping funding from FAST. Later, with the support of the FAST-powered Science & Technology Angels Network (STAN), Nairi and the team raised investment capital and created a minimum viable version of the product.

Today, BLiNK is a good example of how bringing scientists to tech entrepreneurship can help use innovation, collaboration, and determination to transform an idea into a product that benefits countless people.

”



Nairi Baghdasaryan

Founder of BLiNK, incubated in the scope of InVent venture-building program

B-ON BIOTECH PROTOTYPING LAB

In 2021, FAST started to work on the concept of establishing the B-On biotech prototyping laboratory to provide shared lab facilities and co-working space for the larger ecosystem. The B-On biotech prototyping lab is to be the first wet laboratory in Armenia, designed to help biotech teams bring their innovations to life and develop world-changing technologies. It will also serve heavily for educational and research purposes, while the biotech startup ecosystem is still in its nascent phase.

- Equipment was procured and installed at the Armenian National Agrarian University,
- Construction is in the process of finalization and will be completed through September 2023,
- To ensure the proper operation and management of the lab, a package of all necessary regulations, including Standard Operating Procedures (SOPs), were developed. The concept and the business model of the program were also revised by a specialized outsourced company bringing it up to international standards.



ECOSYSTEM LEVEL

GLOBAL INNOVATION FORUM

From its inception in 2017, FAST has pursued the goal of establishing a globally recognized AI and innovation forum. The goal is to assemble the brightest minds and executives from diverse verticals to discuss and shape the future of scientific and technological transformation. This forum serves as a platform for knowledge exchange and partnership building and helps create a bridge across academia, industry, governments, and international organizations.

Since then, the Global Innovation Forum (GIF) has become one of the largest and most important tech events in Armenia, putting the country on the map for global discussions on innovation. Over its four editions, GIF has hosted over 4,700 participants from 26 countries and held 107 talks and sessions by around 370 international and local speakers.

GIF22: “Life-Altering Technologies” took place in October 2022, in partnership with the Government of the Republic of Armenia and with the support of our Science Pioneer Partner - PMI Science Armenia, hosting over 1,300 participants and 66 speakers for 27 talks and sessions. Distinguished speakers delivered speeches on the impact of novel technologies on human life and innovation as a catalyst for positive change.

“The future is dramatically different. What if we start the transformation of humans? When we transform the human, scarcity immediately disappears. Maybe all the elements that create the human species need to be transformed. Where it will take us is all in our hands. What type of species we will become is also in our hands.” - Dr. Armen Orujyan.



4,700

participants

26

countries

107

talks and sessions

370

international and local speakers



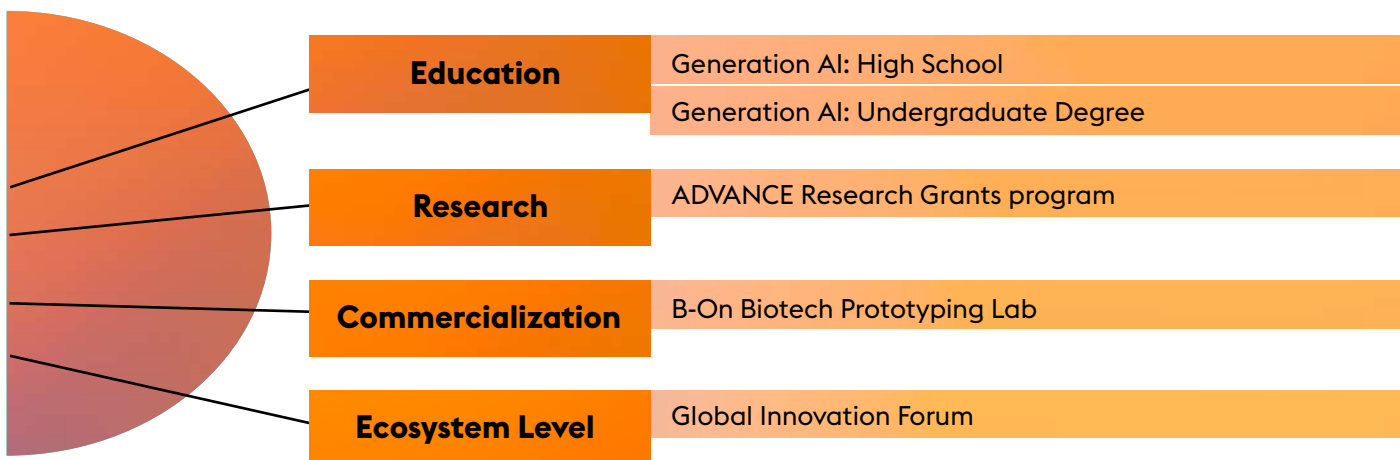
DIRECTION AND KEY PROGRAMS FOR 2023-2024

In FAST's founding year, we began the gradual implementation of our vision by focusing on vigorous planning and preparation through comprehensive consultations, research, and analysis. Adopting a systematic approach to the prevailing state of Armenia's Science, Technology, and Innovation (STI) ecosystem has helped us identify critical leverage points for intervention and develop a roadmap encompassing both the necessary requisites and feasible developmental milestones for Armenia's advancement.

Our systems perspective enables us to take a balanced approach to enhancing STI through the key pillars of education, research, and commercialization. These pillars collectively underpin the strength of the overall STI ecosystem in Armenia and chart its progression. Education is the foundation upon which STI grows and thrives, research expands and catalyzes new branches, and commercialization translates potential into practical applications. To refine our focus, we selectively analyze potential programs within each of these pillars, utilizing impact themes and sectors as our guideposts. This strategic approach directs our capacity and resources towards domains where the anticipated impact is greatest.

Although FAST aims to foster broad growth across Armenia's entire STI landscape, insights from other nations that have achieved rapid technological progress underscore the advantages of concentrating efforts in specialized domains. Armenia's own experiences and the burgeoning high-tech sector highlight Artificial Intelligence (AI) and Data Science as the most sustainable and promising development areas. Hence, our strategic plan places particular emphasis on these core areas, recognizing their significance in driving Armenia's STI trajectory forward.

KEY PROGRAMS FOR 2023-2024 TO ACHIEVE THE IMPACT PLANNED



GLOBAL SUPPORTERS 2017-2023

We cherish the privilege of being able to launch programs with public support. Every supporter contributes their resources, knowledge, expertise, vision, and passion for an advanced and prosperous Armenia.

With profound appreciation, we honor the following individuals and organizations for their trust and continuous support both financially and in-kind.

CO-FOUNDERS

Dr. Noubar Afeyan
Artur Alaverdyan
Ayb Educational Foundation
Luys Cultural, Scientific, Educational Foundation
Ruben Vardanyan

VISIONARIES +250,000 USD

Gateway Industry Inc.
Reliance
Sarkis and Nune Sepetjian
Anonymous

INNOVATORS +125,000 USD

Stepan Gevorgyants
Artur Soghomonyan

PIONEERS +100,000 USD

Raffi and Nina Festekjian Family
PMI Science Armenia

CHAMPIONS +50,000 USD

Garabed Antranikian	Armenian Biotech Group of Boston (Dr. Ashot Papoyan, Zara Solakhyan, Dr. Zaven Kaprielian)
Sargis Badalyan	
Jack Bayramyan Family Foundation	BluIP Inc.
Armen and Katherine Panossian	Fastex
Leon Semonian Family Trust	Fasttoken
Kevork and Elizabeth Zoryan	Flagship Pioneering
Anonymous	Noah's Children
	SADA
	Thermo Fisher Scientific

ADVOCATES +25,000 USD

Aram Adourian and Anna Ohanyan	Goodwin
Ara Mahdessian and Vahe Kuzoyan	Emil Kazaz Museum and Fine Art Academy
Sergey Mahtesyan	L.A. Banquets
Vardges and Serena Markosyan	Quantori
Hagop and Zarig Youredjian	

CATALYSTS +10,000 USD

Ara Agopian	ACBA Bank
Hratch and Olga Andreassian	Amazon Web Services
Ara Apkarian	ARLOOPA Inc.
Nishan and Margrit Atinizian	Axiom Print
Ruzanna Avetisyan	Children of Armenia Fund (COAF)
Bilazarian Family	City National Bank
Solange and Jean-Manuel Bullukian	DeepFrame
Benjamin and Adrienne Charchian	Dvin Music Hall and Tovmasyan Foundation
Arshag and Eleanor Dickranian Foundation	eLabNext, Eppendorf Group
Diramerian Family	ERI
Edward and Froncsoise Djerejian	GenX Laboratories Inc.

CATALYSTS +10,000 USD

Michael Douvadjian

Ghailian Family

Vigen and Houry Ghazarian

Hajjar Family Fund

Armen and Gloria Hampar Family Foundation

Ruben Harutyunyan

Kieu Hoang

Armen and Lenna Hovanesian

Avak and Christine Kahvejian

Berdj and Mary Karapetian

Kevork George Kassabian

Hasmik Keshishian

Olivier and Fanny Leclerc

Frank and Hoori Melkonian

Charleen Mosesian Onanian

Steven Papazian

Vahik and Alice Petrossian

Ara Petrosyan

Yervand Stepanyan

Artyom Vardapetyan and Kevin Setanyan

Andre and Lina Yarian

Anonymous

Anonymous

Anonymous

SPARK +5,000 USD

Suzy Adamyan

Apkarian Foundation

Artem Artunyan

Stephen Berenson and Louise Barzilay

GrittGene Therapeutics

HCVT LLP

Health Bridge

HENDERSON

Hvm Law Firm

Ignite Onward

McKinsey & Company

Proone Labs

Russian-Armenian University

SolarOn

SoftConstruct

Team Telecom Armenia

Tequila Mandala

WinesofArmenia.com

Adventist Health Glendale

Amber Capital

Auto Speed LA

Cognaize

SPARK +5,000 USD

Vahe Fattal Foundation

Harry and Katrina Glorikian Family

Guldalian Family

Stepan Harutyunyan

Viken and Nora Hovsepian

Gary Jerjerian

Saro and Narineh Khemichian

David and Claire Khougazian

Berdj and Margaret Kiladjian

Hayk Mamajanyan

Gerard Mekhsian

Vahik Paul Meserkhani

Shant and Celine Minas

Tina Odjaghian

Diron Ohanian

Yana Saakyan

Judith Saryan and Victor Zarougian

Sinan and Angele Sinanian

Ardem and Annie Tabakian

Gevorg and Arax Voskanian

Anushavan Yerososyan

Anonymous

Anonymous

Anonymous

Anonymous

Adventist Health Glendale

Amber Capital

Auto Speed LA

Cognaize

Glovo

Koor Wines

Latham&Waitkins

ONEArmenia

QAPIplus a Health Forum Plus, Inc
Product

TeaYan

Yerevan Brandy Company

We extend our gratitude to the members of our Advance Armenia Gala and Advance Armenia Boston Reception Committees, without whom this global support would not be possible. We thank them for their dedicated commitment to advancing FAST's mission within their communities and their vital role in the development of science and technology in Armenia.

ADVANCE ARMENIA GALA 2022

Co-Chairs: Silva Katchiguian, Elizabeth Zoryan
His Eminence Archbishop Hovnan Derderian

Dr. Maria Cozette Akopian
Avetis Antaplyan
Roza Grigoryan Baroody
Benjamin Charchian
Irene Darbinyan
Derik Ghookasian
Armen Harutunian
Lenna Hovanessian

Sarkis Kiramijyan
Arthur Kokozian
Armen Martirosyan
Dr. Armen Mkrtychyan
Natalie Noravian
Vrej Sarkissian
Elena Semerdjian

Arthur Stamboltsyan
Annie Tabakian
Ardem Tabakian
Fred Tatlyan
Tigran Tutuyan
Armen Vardanyan
Vince Unanyan

ADVANCE ARMENIA GALA 2023

Co-Chairs: Lenna Hovanessian, Esq. and Elizabeth Zoryan
His Eminence Archbishop Hovnan Derderian

Dr. Lusine Abgaryan
Avetis Antaplyan
Irene Darbinyan
Derik Ghookasian
Anna Grigoryan

Silva Katchiguian
Hayk Mamajanyan, Esq.
Armen Martirosyan
Natalie Noravian
Alice Petrossian

Yana Saakyan
Vrej Sarkissian
Elena Semerdjian
Arthur Stamboltsyan
Fred Tatlyan

ADVANCE ARMENIA BOSTON RECEPTION 2023

Co-Chairs: Raffi Afeyan, Avak Kahvejian

Aram Adourian
Zela Astarjian
Nancy Barsamian
Seth Bilazerian
Yelena Bisharyan

Bruce Boghossian
Alain Chaglassian
Marina Dermenjian
Michael Douvadjian

Armen Krmzian
Armen Mkrtychyan
Herman Purutyan
Zareh Zurabyan

FINANCIALS: INCOME AND EXPENSES

SIX-YEAR FUNDING OVERVIEW

Funding Source	USD
Founders' Contributions	7,807,373
Individual Donors and Corporations	3,506,157
Grant Agreements	214,581
Earned Revenue	39,103
In Kind Contributions	415,162
Total	11,982,378

SIX-YEAR FUNDS EXPENSES OVERVIEW

	USD
Program Costs	\$8,137,670
Operating Costs	\$1,734,324
Fundraising Costs	\$977,109
Startup Costs*	\$428,510
Total	\$11,277,613

* Expenses necessary for initiating the Foundation, including research and capital expenses incurred in the first year, are categorized as startup costs.

BUILDING POWERFUL ARMENIA TOGETHER

We thank you for joining us on the journey of transforming Armenia into a Top IO Global Innovator. Along the path of realizing this vision, we set ambitious milestones and work to reach them with your support.

We are honored to be surrounded by notable change agents who contribute to our mission and who understand that a brighter future tomorrow is created by the actions we take today – for a secure, prosperous, and innovative Armenia that stands proudly on the global stage.

As our programs and initiatives grow in scale and scope, we will continue to keep you updated and share the progress we mark and the achievements we reach together. As always, with full transparency and gratitude toward the donors and supporters who are with us on this road.



fast.foundation