

**CURRENT RESEARCH ACTIVITIES**  
*in*

**ERC/AUA**

Engineering Research Center at American University of Armenia conducts, sponsors and supports a variety of research activities, which are being carried out in various locations, including Yerevan State University, State Engineering University, Yerevan Physics Institute, State research firm "Lasereyn Tekhnika", Institute Of Mechanics of National Academy of Sciences, Armenian Earthquake Engineering Research Institute and others. The names of the projects, individuals responsible to perform the tasks, as well as the duration, are summarized in the following tables, organized for different disciplines:

**ENGINEERING RESEARCH CENTER (ERC)**

**Earthquake Engineering (ERC-1):**

#	TOPIC / AUTHOR(S)	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	SEISMIC ISOLATION OF BUILDINGS / Melkumian, Michael; Arzumian, Valery; Manoukian, Arthur; Martirosian, Tigran; Zadoyan, Paruir	National Survey for Seismic Protection	4	6/1/92 5/31/95
2	INVESTIGATION OF METHODS FOR SEISMIC REHABILITATION / Melkumian, Michael; Minasian, Ashot; Chalkatryan, David; Vartanian, Grigor	National Survey for Seismic Protection	4	4/1/93 5/31/95
3	SOFT SOILS EXPANDING PILE FOR STRENGTHENING / Harutunian, Ruben	Armenian Earthquake Engineering Research Institute	1	1/1/92 5/31/95
4	COMPARATIVE STUDY OF BUILDING CODES & SEISMIC REHABILITATION BY FLEXIBLE UPPER FLOOR / Khachian, Edward	Armenian Earthquake Engineering Research Institute	1	6/1/92 5/31/95
5	INVESTIGATION OF FLEXIBLE STORY AS A MEANS FOR MITIGATION OF EARTHQUAKE EFFECTS ON BUILDINGS / Khachian, Edward	Armenian Earthquake Engineering Research Institute	1	6/1/92 5/31/95
6	DIGITIZATION OF ACCELEROGRAMS / Aslanian, Levon	Institute for Information & Automation Problems	1	6/1/92 5/31/95
7	STOCAL II / Aslanian, Levon	Institute for Information & Automation Problems	1	6/1/92 5/31/95
8	COMPUTER PROGRAM FOR MULTISUPPORT SEISMIC ANALYSIS / Hakobian, Ashot	Mechanics Institute of NAS, AUA	1	7/1/92 11/30/94
9	STOCHASTIC DYNAMIC ANALYSIS / Hakobian, Ashot	Mechanics Institute of NAS, AUA	1	7/1/92 11/30/94
10	MATHEMATICAL MODEL OF THE AUA BUILDING / Rostomian, Marat	"ArmPromProject" Design Institute	1	10/1/93 5/31/95
TOTAL	13	5	actual <sup>1</sup> 15	

<sup>1</sup> This means that some researchers are doing two or more research works simultaneously.

**Mechanics (ERC-2):**

#	TOPIC / AUTHOR(S)	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	RESIDUAL STRESSES IN MICRO HETEROGENEOUS MATERIALS / Gevorkian, Souren	State Engineering University	1	7/1/92 5/31/95
2	REAL-TIME CONTROL OF A THIN ROUND MIRROR USING H <sub>∞</sub> METHODS / Chemishkian, Sergey	Bank Of Renovation And Development	1	9/1/93 3/15/95
3	INTERACTION OF CONDUCTIVE SHELLS AND PLATES WITH MAGNETIC FIELD AND PROPAGATION OF MAGNETOELASTIC WAVES IN ELASTIC MEDIUMS / Sarkisian, Samvel	Yerevan State University	1	2/1/94 1/31/95
TOTAL	3	3	actual 3	

**Physics (ERC-3):**

#	TOPIC / AUTHORS	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	X-RAY INVESTIGATIONS OF THE STRUCTURAL DISTORTIONS OF CALCIUM HYDROXIDE AT THE AGGREGATE-CEMENT PASTE INTERFACE / Harutunian, Valery	Yerevan State University	1	4/1/94 3/31/95
TOTAL	1	1	actual 1	

**Environmental Science (Environmental Research and management Center, ERC-7):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	ATMOSPHERIC PROTECTION MANAGMENT DEVELOPMENT / Tserunian, Vartan; Gabrielian, Aram	AUA, Ministry of Nature and Environmental Protection	2	1/11/92 ongoing
2	RA ENVIRONMENTAL DATABASE DEVELOPMENT / Tserunian, Vartan; Gabrielian, Aram; Chatrchian, Tigran	State Department of Statistics	3	1/5/94 12/31/94
3	LAKE SEVAN DATABASE / Tserunian, Vartan; Pogosian, Yurik	AUA, State Department of Statistics	2	1/9/94 15/4/95
4	COMPUTER PROGRAM DEVELOPMENT FOR RA ENVIRONMENTAL ASSESSMENT / Vermishev, Michael; Tserunian, Vartan	Ministry of Economy Research Institute, AUA	2	1/8/94 ongoing
5	ENVIRONMENTAL RISK PERCEPTION / Badalian, Armen; Gleason, John; Gabrielian, Aram	State Department of Statistics	3	1/5/94 12/31/94
6	EFASIBILITY STUDIES FOR SILVER IONIZERS MANUFACTURING AND MARKETING IN ARMENIA / Tserunian, Vartan; Shirinian, Martin	AUA,	2	1/6/94 15/4/95
TOTAL	6	4	actual 8	

**Technical Translation (ERC-9):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF PEOPLE	PERIOD
1	ON-LINE COMPUTERIZED ARMENIAN-RUSSIAN-ENGLISH DICTIONARY / Darbinian, Sashig, Sahakian, Vladimir, Sharambeyan, Souren	Institute of Armenian Encyclopedia, Institute for Information & Automation Problems	3	6/1/93 12/31/94
TOTAL	1	2	actual 3	

**APS<sup>2</sup> GRANTS**

**Earthquake Engineering (APS-1):**

#	TOPIC / AUTHOR(S)	INSTITUTIONS INVOLVED	# OF PEOPLE	PERIOD
1	INVESTIGATION OF MODELS OF FREQUENCY-INDEPENDENT INTERNAL FRICTION OF MATERIALS FOR DEFINITION OF CONSTRUCTION REACTION / Petrosian, Levon	Armenian Earthquake Engineering Research Institute	1	7/1/94 6/30/95
2	THE INVESTIGATION OF DYNAMIC PROPERTIES OF HETEROGENEOUS SOIL FOUNDATION / Khachian, Edward	Armenian Earthquake Engineering Research Institute	1	7/1/94 6/30/95
3	THE DEVELOPMENT OF ESTIMATE SYSTEM ON THE DEGREE OF DAMAGE AND RELIABILITY OF MASONRY BUILDINGS STRUCTURES / Davidian, Levon	Armenian Earthquake Engineering Research Institute	1	6/1/93 12/31/94
TOTAL	3	1	actual 3	

**Mechanics (APS-2):**

#	TOPIC / AUTHOR(S)	INSTITUTIONS INVOLVED	# OF PEOPLE	PERIOD
4	NONLINEAR WAVES IN DIFFERENT CONTINUOUS MEDIA / Bagdov, Alexandr	NAS, Institute Of Mechanics	1	6/1/93 12/31/94
5	SOME MODERN PROBLEMS ON THE THEORY OF ELASTICITY OF ANISOTROPIC BODY / Sarkisyan, Vladimir	Yerevan State University	1	6/1/93 12/31/94
TOTAL	2	2	actual 2	

<sup>2</sup> ARMENIAN PROFESSIONALS' SOCIETY

**Physics (APS-3):**

#	TOPIC / AUTHORS	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	INVESTIGATION OF GAS-SENSING MATERIALS AND STRUCTURES FOR MICRO-ELECTRONIC SENSORS CREATION / Adamian, Zaven	Yerevan State University	1	7/1/94 6/30/95
2	INVESTIGATION OF THIN-FILM CONVERSIONS OF SOLAR ENERGY BASED ON CUINSE/D2/U / Margarian, Hakob	Yerevan State University	1	7/1/94 6/30/95
3	TRANSPORT PHENOMENA AT THE SEMICONDUCTOR - ELECTROLYTE AND SEMICONDUCTOR - GAS INTERFACES / Aroutunian, Vladimir	Yerevan State University	1	6/1/93 12/31/94
4	INTERACTION OF LASER RADIATION WITH ORIENTATION AND HYDRODYNAMIC MOTIONS IN NEMATIC LIQUID CRYSTALS / Akopian, Rafik	Yerevan State University	1	6/1/93 12/31/94
5	QUANTUM-MECHANICAL MOTIONS OF ATOMS AND FORMATION OF THE REGULAR STRUCTURES IN THE LASER RADIATION FIELD / Muradian, Atom	"Laserayin Tekhnika"	1	6/1/93 12/31/94
6	INFLUENCE OF IMPURITY SUBSTITUTIONS AND SINTERED COMPOSITIONS ON CRITICAL PARAMETERS OF Y- AND BI-BASED SUPERCONDUCTIVITY CERAMICS BEFORE AND AFTER ELECTRON IRRADIATION / Nikogosyan, Sergey	Yerevan Physics Institute	1	6/1/93 12/31/94
TOTAL	6	3	actual 6	

**Computer Science (APS-4):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	REGULATING OPERATORS FOR SOLVING THE PROBLEM OF IMAGE RESTORATION / Grigorian, Artiom	IIAP	1	6/1/93 12/31/94
2	SOFTWARE FOR TUNING THE ARCHITECTURE OF PERSONAL COMPUTERS / Shoukourian, Samvel	Institute of the Mathematical Machines	1	6/1/93 12/31/94
TOTAL	2	2	actual 2	

**Engineering (APS-5):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	RESEARCH AND DEVELOPMENT OF INTEGRATED BIOSENSORS / Poghossian, Arshak	State Engineering University	1	6/1/93 12/31/94
2	CREATION OF THE ANTI FRICTION MATERIALS WITH HIGH WEAR-RESISTANCE AND LOW FRICTION COEFFICIENT / Manukian, Nickolay	State Engineering University	1	6/1/93 12/31/94
TOTAL	2	1	actual 2	

**Astronomy (APS-6):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1.	DETAILED INVESTIGATIONS OF THE OPTICAL COLLIMATED OUTFLOWS FROM YOUNG STARS / Magakian, Tigran	Byurakan Astrophysical Observatory	1	6/1/93 12/31/94
2	SPECTROPHOTOMETRY AND MORPHOLOGY OF THE GALAXIES WITH ULTRAVIOLET EXCESS / Yegiazarian, Anahit	Byurakan Astrophysical Observatory	1	6/1/93 12/31/94
TOTAL	2	1	actual 2	

**Mathematics (APS-8):**

#	TOPIC	INSTITUTIONS INVOLVED	# OF	
			PEOPLE	PERIOD
1	GENERAL FORM RECURSIVE EQUATIONS AND THEIR SOLUTION PROBLEM / Marandjian, Hrant	IIAP	1	7/1/94 6/30/95
2	INVESTIGATIONS ON MULTIDIMENSIONAL COMPLEX ANALYSIS / Karapetian, Arman	NAS, Institute of Mathematics	1	6/1/93 12/31/94
TOTAL	2	2	actual 2	

Research activities at ERC/AUA can be summarized (student researchers are not included.) as:

### Summary Table

<i>TOPIC ID</i>	<i>DISCIPLINE</i>	<i>NUMBER OF STUDIES / PEOPLE INVOLVED</i>	<i>APPROXIMATE DATE</i>
ERC-1, APS-1	Earthquake Engineering	13/17	May 1995
ERC-2, APS-2	Mechanics	5/5	Beginning of the year 1995
ERC-3, APS-3	Physics	7/7	Beginning of the year 1995
APS-4	Computer Science	2/2	12/31/94
APS-5	Engineering	2/2	12/31/94
APS-6	Astronomy	2/2	12/31/94
ERC-7	Environmental Science	6/8	12/31/94
APS-8	Mathematics	2/2	12/31/94, 12/31/94
ERC-9	Technical Translation	1/3	12/31/94
TOTAL	9	41/48	-