

Serkos A. Haroutounian

Professor of Chemistry of the Agricultural University of Athens

www.aua.gr/haroutounian

He received his B.Sc. degree in Chemistry from the University of Patras (1980) and pursued doctoral studies in the terms of a collaboration between Agricultural University of Athens (AUA) and University of Illinois (U of I), under the guidance of Professors M. P. Georgiadis and J. C. Bailar Jr. (1980-85). Then, he moved to the U of I to carry out postdoctoral research with Prof. J.A. Katzenellenbogen (1986-87) and specialized in the biomedical applications of organic synthesis. After serving the Greek Navy, in 1989, he joined the AUA faculty as lecturer (Chemistry Lab., Department of Sciences). In 1992-93 he returned to the U of I as visiting professor, while in 2002 he was promoted to AUA professor of Chemistry (Lab. of Nutritional Physiology and Feeding). For the period 2002-17 he also served at the Hellenic Open University as Professor of Organic Chemistry (Dept. of Natural Sciences) and head of the relevant department.

Currently, he is the Chairman of the board of directors of the Hellenic Agricultural Organization DEMETER, the national authority for the:

- A) inspections-quality assurance of Greek PDO and PGI products,
- B) organic farming system of Greece
- C) determination of quality indicators and the control of quantities for all meats and milks traded in Greece (native and imported),
- D) agricultural research of the country (11 Institutes), and
- E) agricultural education (7 Schools) and vocational training (the Greek programs for the training of young farmers)

Research Interests: *Applications of Organic-Analytical Chemistry for the development of novel bioactive preparations for utilization as food additives, functional foods, biocides and medicines for humans-animals*

Specifically, his research is focusing on:

- a) **NATURAL PRODUCTS - ENVIRONMENT** (*i.* isolation-valorization of bioactive molecules and extracts from Greek flora, *ii.* Management & valorization of agricultural wastes-byproducts, *iii.* mitigation of the climate change consequences in agriculture)
- b) **FOODS** (*i.* development of novel food additives-supplements, *ii.* exploitation-certification of Greek traditional agricultural products, *iii.* development of novel functional foods), and
- c) **BIOMEDICAL APPLICATIONS OF ORGANIC CHEMISTRY** for the development of novel molecules with anti-estrogenic and anti-angiogenic activities.

Achievements-Honors: During the four years of his undergraduate studies, he received scholarship from *Guilbenkian Foundation* (Lisbon, Portugal)

His research group has accomplished-published the first asymmetric total synthesis of the natural product (+)-prosophylline (*Tetrahedron Letters* **1999**, 40, 6869)



Contact Info

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He is member of the Academy of Natural Sciences of Armenia (elected 2007)

His LIFE+ project **DIONYSOS** (management of wineries wastes) was awarded by the European Commission as one of the five best environmental projects of EU (2008) <http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.createPage&ref=LIFE03%20ENV/GR/000223>

His research on the vinification wastes management was honored in the terms of international scientific competition "Energy Globe Awards, 2010"

His research group has accomplished-published the first critical interpretation of Dioscorides code, 1st century AC (*Journal of Ethnopharmacology*, 2015).

Scientific Activities: He is the author of 148 scientific publications, consisting of 137 papers in international scientific journals (120 original research, 8 reviews and 9 conference papers), 8 book chapters, 2 patents and 1 thesis

His research has more than 3.000 citations in the international scientific literature.

He has 109 presentations and numerous invited lectures in national and international scientific conferences, symposia and workshops

He has supervised the implementation of twelve doctoral and seventeen master theses. Currently, his research team consists of two postdocs, five Ph.D. students and one M.Sc. scientist and four undergraduate students.

He is the editor of the *Journal of Chemistry* and the *International Journal of Functional Nutrition* and editorial board member of *Toxicology Reports*, *American Journal of Agricultural Science and Technology* and *International Journal of Clinical Nutrition and Dietetics*.

Teaching: Various undergraduate courses at AUA (Dept. of Animal Science) and a graduate course on "Environmental Toxicology" at the Medical School of the University of Thessaly. Creation of webcast for Greek Open University.

Scientific Projects: He has successfully completed the implementation (as Principal Investigator) of 26 research projects funded by the EC and Greek government. This activity has resulted in the acquisition of a noticeable research infrastructure and instrumentation which operates as the following AUA facilities:

a. *Laboratory scale:* UPLC/MS-MS, MPLC, HPLC, GC/MS, GC/FID, MARS-Microwave Digestion Extraction System, Microarray reader, UV-vis microplate scanner, UV-vis, PCR, Hoods, Freeze dryer, Ultrasound extractors, Centrifuges etc

b. *Pilot scale:* Ultrasound extractor (capacity 25 Kg), Large scale rotary evaporator (capacity 25 L), Essential oil production units i. conventional (150 Kg capacity), and ii. microwaves assisted (5 Kg capacity, Composting unit consisting of two closed vessels and four open air windrows, each of 10m³ capacity,

Currently, he is the principal investigator of an EU funded research projects concerning the:

- **CLIMATE CHANGE** (LIFE14CCM/GR/000635), entitled **CLIMATREE** (www.lifeclimatree.eu): A novel approach for accounting & monitoring carbon sequestration of tree crops and their potential as carbon sink areas (2015-20), and

and three projects financed by Greek government concerning the:

- **APPLICATIONS OF NATURAL PRODUCTS** (2018-21): *Exploitation of plant origin products for the development of novel and environmentally safe cleaning and protection means for Greek cultural heritage caves*
- **CIRCULAR ECONOMY:**
 - A. *Exploitation of Greek agro-industrial by-products for the development of novel, high-value feed aiming the replacement of imported materials* (2018-21)

B. Nutrition of Santorini as background for the development of innovative food supplements of high nutritional value (2019-22)

Additionally, his team implements three regional programs with Epirus, Central Greece and North Aegean, concerning the certification of their five traditional agricultural products and foodstuffs as Products of Designated Origin.

He is reviewer of scientific projects for the EC, Greece, Cyprus, Poland, Italy, Belgium Armenia etc.

Administrative: He is the Greek delegate at the EU network for the valorization of carotenoids (**EUROCAROTEN**-*European network to advance carotenoid research and applications in agro-food and health*), COST-CA15136 (2016-20).

In the past, he has held similar positions at the networks **STEMCHEM**-*Chemical approaches to target drug resistance in cancer stem cells* (COST-CM1106, 2012-16) and **ANGIOKEM**-*Inhibitors of angiogenesis: design, synthesis and biological exploitation* (COST-CM602, 2007-11).

He was the Greek delegate at the EU committee that established the actions of 7th Research Framework (2005-7) and the National expert at the EU committee for the SMEs research (2008-10)

He was appointed (2014-16) member of the Scientific Board of the Agro-nutritional committee of the National Committee of Research & Technology of Greece

He served as board member of the AUA Research Account (2008-13, 2016-17) and the Benaki Phytopathological company (2005-10). He was a member of the advisory board of Benaki Phytopathological Institute (2006-14) and subst. member of NAGREF's (National Agricultural Research Foundation) scientific committee (2008-11).

Other Activities: He has collaborated with cooperatives, prefectures and municipalities from Santorini, Tyrnavos, Cephalonia, Elefsina and Serres on issues concerning the agricultural development, green agriculture or addressing diverse environmental problems. These initiatives have provided insights for the singularity recognition of various local agricultural products with particular historical and economical interest, such as the fava and tomato of Santorini, Tsipouro of Tyrnavos and the cheeses "Kashkaval" and "Tsalafouti". For these products, the necessary data-documents were produced-gathered for their certification as PDO (Protected Designation of Origin) products.

Currently, he collaborates with the

He is a elected member of the Central Council of the Armenian community of Greece and member of the Armenian National Committee of Greece. For many years he has served as member of the Board of Directors of the Greek-Armenian schools.

Development Projects: He has supervised the implementation of the following projects of the Greek Ministry of Foreign Affairs (HELLENIC AID), all connected with the development of the rural sector of Armenia:

- a. Development of the food safety system of Armenia and organization-installation-operation of a pesticide residues detection laboratory,
- b. Foundation of a farmers' cluster in Northern Armenia (Bagradashen), which was provided with cultivation, crops preservation, transport and marketing means,
- c. Creation-operation of a laboratory for the control of irrigation and drinking water resources of Armenia, and
- d. Creation-operation of an animal feed production plant in Ararat province.