

## Serkos A. Haroutounian

AUA Professor of Chemistry (Natural and Synthetic Bioactive Compounds)

[www.aua.gr/haroutounian](http://www.aua.gr/haroutounian)

He received his B.Sc. degree in Chemistry from the University of Patras (1980) and pursued doctoral studies at the Agricultural University of Athens (AUA) and the 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 in the Greek Navy, in 1989 he joined the AUA faculty as lecturer of Chemistry (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 and head of the relevant department.



### Contact Info

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From 3/2013 to 4/2015 he was appointed as chairman of the board of directors of the Hellenic Agricultural Organization ELGO DIMITRA, 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 training (the Greek programs for the training of young farmers)

In 2018 he was elected Vice-Rector of Academic and Administrative Affairs of the AUA.

**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.

**Awards-Honors:** During his undergraduate studies, scholarship from *Guilbenkian Foundation* (Lisbon, Portugal)

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

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

His LIFE+ project **DIONYSOS** (management of wineries wastes) was awarded by the European Commission as one of the best environmental projects of EU for the year 2008  
[http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.createPage&s\\_ref=LIFE03%20ENV/GR/000223](http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.createPage&s_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 in 2015 at the *Journal of Ethnopharmacology* the first critical interpretation of Dioscorides code (1<sup>st</sup> century AC).

**Scientific Activities:** He is the author of 141 scientific publications, consisting of 130 papers in international scientific journals (113 original research, 8 reviews and 9 conference papers), 8 book chapters, 2 patents and 1 thesis

There are more than 2.400 publications citing his research in international scientific literature

He has 103 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 three B.Sc. scientists

He is the reviewer of more than 40 international scientific journals and serves as editorial board member of the *Journal of Chemistry, 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 Sciences and Aquaculture) and a graduate course on Environmental Toxicology at the Medical Department of the University of Thessaly.

**Scientific Projects:** He has successfully completed the implementation (as Principal Investigator) of 20 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 10m<sup>3</sup> capacity,

Currently, he is the scientist-in-charge of

- two EU funded research projects concerning the:

A. **ENVIRONMENT** (LIFE12ENV/GR/000466), entitled **CONOPS** ([www.conops.gr](http://www.conops.gr)): *Development & demonstration of management plans against -the climate change enhanced- invasive mosquitoes in S. Europe* (2013-18), and

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

- two projects financed by Greek government concerning the:

A. **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*

**B. CIRCULAR ECONOMY (2018-21):** *Exploitation of Greek agro-industrial by-products for the development of novel, high-value feed and the replacement of the corresponding imported products*

Additionally, his team implement three programs of Epirus, Central Greece and North Aegean Regions concerning the certification as PDO of five traditional agricultural products. 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 7<sup>th</sup> 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 Vatikiotio onion. 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

**i. Union of Cooperatives of Thira (Santorini)** for the exploitation-promotion of the agricultural production of Santorini island,

**ii. Union of Wine Cooperatives of Greece** for the development-promotion of Greek wines,

**iii. Region of Sterea Hellas** on issues concerning the quality assurance and certification of their agricultural production, the valorization-promotion of their PDO products and the implementation of the new rural development framework-program

He is an elected member of the Central Council of the Armenian community of Greece and a member of the Armenian National Committee of Greece. For many years he serves 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.