

Efstathia Ioannou

Assistant Professor
Section of Pharmacognosy and Chemistry of Natural Products,
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APPOINTMENTS

- 10/2018–present:** **Assistant Professor (tenured)** in Marine Pharmacognosy
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 04/2015–09/2018:** **Assistant Professor on tenure track** in Marine Pharmacognosy
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 01/2012–03/2015:** **Lecturer on tenure track** in Marine Pharmacognosy
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 09/2010–06/2011:** **Adjunct Lecturer (according to the Greek Presidential Decree 407/1980)**
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 07/2010–12/2011:** **Postdoctoral Researcher**
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 09/2009–06/2010:** **Postdoctoral Researcher**
Center for Marine Biotechnology and Biomedicine, Scripps
Institution of Oceanography, UCSD (San Diego, U.S.A.)
- 04/2009–08/2009:** **Postdoctoral Researcher**
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA

EDUCATION

- 03/2009:** **Ph.D. in Pharmacy (Excellent)**
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA
- 11/2005:** **M.Sc. in Pharmacognosy and Chemistry of Natural Products**
(Excellent, 9.18/10)
Section of Pharmacognosy and Chemistry of Natural Products,
Department of Pharmacy, NKUA

- 07/2003:** **B.Sc. in Agricultural Biotechnology** (Very Good, 7.32/10)
Department of Agricultural Biotechnology, Agricultural University of Athens
- 06/1996:** **Senior High School (Lyceum) Graduation Certificate** (Very Good)
American College of Greece (Pierce College)

SCHOLARSHIPS / AWARDS

- Scholarship for postdoctoral research (PNG Gerolymatos SA, 09/2009–08/2011).
- PSE Travel Bursary (6th European Conference on Marine Natural Products, Porto, Portugal, 07/2009).
 - PSE Travel Bursary (Future Trends in Phytochemistry: A Young Scientist Symposium, Bad Herrenalb, Germany, 03/2008).
 - Award of high academic performance during postgraduate studies (State Scholarships Foundation, 2004-2005).
 - Scholarship of high academic performance during Junior and Senior High School (Pierce – The American College of Greece, 1990-1996).

RESEARCH INTERESTS

- Isolation and structure elucidation of secondary metabolites from marine or terrestrial macroorganisms aiming at the assesement of their biological activity or their ecological role.
 - Isolation of free-living and symbiotic, endophytic or epiphytic microorganisms (bacteria and fungi) from the marine environment aiming at the investigation of their secondary metabolism and the isolation and structural characterization of bioactive natural products thereof.
 - Bioconversions of bioactive secondary metabolites by marine-derived microorganisms aiming at the production of analogues and their biological activity evaluation thereof, as well as their structure-activity relationship study.
 - Development of methodology based on LC-DAD-MS and NMR aiming at the metabolomic fingerprinting of marine organisms.
 - GC-MS analyses of volatile constituents of essential oils from congener plant taxa aiming to distinguish chemotypes to be used as tools in chemotaxonomy.
 - Chemical interconversions of secondary metabolites aiming at the production of semisynthetic analogues for their biological activity evaluation and structure-activity relationship studies.
 - Investigation of the process of biofouling in marine environments aiming at the development of ecologically friendly marine paints.
 - Isolation of marine polysaccharides and development of methodology aiming at the production of new biomaterials for biomedical applications.
 - Evaluation of the antioxidant, antibacterial and antifouling activity of extracts and / or secondary metabolites.

SCIENTIFIC – RESEARCH EXPERIENCE

Monographs

- (1) **Ioannou E.** 2003. Studies on the speciation and polymorphism of insects of the genus *Philaenus* (Homoptera, Cercopidae) from Asia. BSc Thesis (in Greek), Department of Agricultural Biotechnology, Agricultural University of Athens, Athens, Greece.
- (2) **Ioannou E.** 2005. Isolation of bioactive metabolites from the brown alga *Dilophus spiralis*. MSc Thesis (in Greek), Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Athens, Greece.
- (3) **Ioannou E.** 2009. Isolation and structure elucidation of bioactive secondary metabolites from the brown alga *Dilophus spiralis* and investigation of its endophytic bacteria. PhD Thesis (in Greek), Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Athens, Greece.

Chapters in books

- (1) **Ioannou E.**, Roussis V. 2009. Bioactive metabolites from seaweeds. In *Plant-derived natural products: synthesis, function, and application* (Osbourn A.E. and Lanzotti V., eds.). Springer Verlag GA, pp. 51–81.
- (2) Harizani M., **Ioannou E.**, Roussis V. 2016. The *Laurencia* paradox: An endless source of chemodiversity. In *Progress in the Chemistry of Organic Natural Products*, vol.102 (Kinghorn A.D., Falk H., Gibbons S. and Kobayashi J., eds.). Springer Verlag GA, pp. 91–252.
- (3) Koutsaviti A., **Ioannou E.**, Tzakou O., Petrakis P.V., Roussis V. 2017. Pine needle oil. In *Green Pesticides Handbook: Essential Oils for Pest Control* (Nollet L. and Rathore H.S., eds.). Taylor & Francis, CRC Press, Boca Raton, FL, USA, pp. 245-268.
- (4) Koutsaviti A., **Ioannou E.**, Roussis V. 2018. Bioactive seaweed substances. In *Bioactive Seaweeds for Food Applications: Natural Ingredients for Health Diets* (Qin Y., ed.). Elsevier Inc., Academic Press, San Diego, CA, USA, pp. 25-52.

Research publications in peer-reviewed journals

- (1) **Ioannou E.**, Poiata A., Hancianu M., Tzakou O. Chemical composition and *in vitro* antimicrobial activity of the flower heads and leaves essential oils of *Santolina rosmarinifolia* L. from Romania. *Nat. Prod. Res.*, **2007**, 21, 18-23.
- (2) **Ioannou E.**, Quesada A., Vagias C., Roussis V. Dolastanes from the brown alga *Dilophus spiralis*: absolute stereochemistry and evaluation of cytotoxicity. *Tetrahedron*, **2008**, 64, 3975-3979.
- (3) Gkinis G., **Ioannou E.**, Quesada A., Vagias C., Tzakou O., Roussis V. Parnapimarol and nepetaparnone from *Nepeta parnassica*. *J. Nat. Prod.*, **2008**, 71, 926-928.
- (4) **Ioannou E.**, Abdel-Razik A.F., Alexi X., Vagias C., Alexis M.N., Roussis V. Pregnanes with antiproliferative activity from the gorgonian *Eunicella cavolini*. *Tetrahedron*, **2008**, 64, 11797-11801.
- (5) **Ioannou E.**, Abdel-Razik A.F., Zervou M., Christofidis D., Alexi X., Vagias C., Alexis M.N., Roussis V. 5 α ,8 α -Epidioxysterols from the gorgonian *Eunicella cavolini* and the ascidian

Trididemnum inarmatum: Isolation and evaluation of their antiproliferative activity. *Steroids*, **2009**, 74, 73-80.

(6) **Ioannou E.**, Abdel-Razik A.F., Alexi X., Vagias C., Alexis M.N., Roussis V. 9,11-Secosterols with antiproliferative activity from the gorgonian *Eunicella cavolini*. *Bioorg. Med. Chem.*, **2009**, 17, 4537-4541.

(7) **Ioannou E.**, Nappo M., Avila C., Vagias C., Roussis V. Metabolites from the sea hare *Aplysia fasciata*. *J. Nat. Prod.*, **2009**, 72, 1716-1719.

(8) **Ioannou E.**, Zervou M., Ismail A., Ktari L., Vagias C., Roussis V. 2,6-Cyclo-xenicanes from the brown algae *Dilophus fasciola* and *Dilophus spiralis*. *Tetrahedron*, **2009**, 65, 10565-10572.

(9) Plouguerné E., **Ioannou E.**, Georgantea P., Vagias C., Roussis V., Hellio C., Kraffe E., Stiger-Pouvreau V. Anti-microfouling activity of lipidic metabolites from the invasive brown alga *Sargassum muticum* (Yendo) Fensholt. *Mar. Biotechnol.*, **2010**, 12, 52-61.

(10) Lhullier C., Falkenberg M., **Ioannou E.**, Quesada A., Papazafiri P., Horta P.A., Schenkel E.P., Vagias C., Roussis V. Cytotoxic halogenated metabolites from the Brazilian red alga *Laurencia catarinensis*. *J. Nat. Prod.*, **2010**, 73, 27-32.

(11) Delis C., Krokida A., Georgiou S., Peña-Rodríguez L.M., Kavroulakis N., **Ioannou E.**, Roussis V., Osbourn A.E., Papadopoulou K.K. Role of lupeol synthase in *Lotus japonicus* nodule formation. *New Phytol.*, **2011**, 189, 335-346.

(12) Moussouni S., Saru M.L., **Ioannou E.**, Mansour M., Detsi A., Roussis V., Kefalas P. Crude peroxidase from onion solid waste as a tool for organic synthesis. Part II: Oxidative dimerization-cyclization of methyl-*p*-coumarate, methyl caffeate and methyl ferulate. *Tetrahedron Lett.*, **2011**, 52, 1165-1168.

(13) **Ioannou E.**, Quesada A., Rahman M.M., Gibbons S., Vagias C., Roussis V. Dolabellanes with antibacterial activity from the brown alga *Dilophus spiralis*. *J. Nat. Prod.*, **2011**, 74, 213-222.

(14) **Ioannou E.**, Vagias C., Roussis V. Dilospiranes A and B: diterpenes featuring novel carbocyclic units from the brown alga *Dilophus spiralis*. *Tetrahedron Lett.*, **2011**, 52, 3054-3056.

(15) Mahdi F., Falkenberg M., **Ioannou E.**, Roussis V., Zhou Y.D., Nagle D.G. Thyrsiferol inhibits mitochondrial respiration and HIF-1 activation. *Phytochem. Lett.*, **2011**, 4, 75-58.

(16) Diab Y., **Ioannou E.**, Emam A., Vagias C., Roussis V. Desmettianosides A and B, bisdesmosidic furostanol saponins with molluscicidal activity from *Yucca desmettiana*. *Steroids*, **2012**, 77, 686-690.

(17) **Ioannou E.**, Quesada A., Rahman M.M., Gibbons S., Vagias C., Roussis V. Structures and antibacterial activities of minor dolabellanes from the brown alga *Dilophus spiralis*. *Eur. J. Org. Chem.*, **2012**, 5177-5186.

(18) Güçlütürk I., Detsi A., Weiss E.K., **Ioannou E.**, Roussis V., Kefalas P. Evaluation of antioxidant activity and identification of major polyphenolics of the invasive weed *Oxalis pes-caprae*. *Phytochem. Anal.*, **2012**, 23, 642-646.

(19) Genta-Jouve G., **Ioannou E.**, Mathieu V., Bruyère C., Lefranc F., Thomas O.P., Kiss R., Roussis V. Determination of the absolute configuration and evaluation of the *in vitro* antitumor activity of dilospirane B. *Phytochem. Lett.*, **2012**, 5, 747-751.

(20) **Ioannou E.**, Vagias C., Roussis V. Isolation and structure elucidation of three new dolastanes from the brown alga *Dilophus spiralis*. *Mar. Drugs*, **2013**, 11, 1104-1112.

(21) Karavoltsos S., Sakellari A., Strmečki S., Plavšić M., **Ioannou E.**, Roussis V., Dassenakis

- M., Scoullou M. Copper complexing properties of exudates and metabolites of macroalgae from the Aegean Sea. *Chemosphere*, **2013**, 91, 1590-1595.
- (22) Georgantea P., **Ioannou E.**, Vagias C., Roussis V. Perezoperezone and curcuperezone: bisabolane dimers from the soft coral *Pseudopterogorgia rigida*. *Tetrahedron Lett.*, **2013**, 54, 6920-6922.
- (23) Gkinis G., Michaelakis A., Koliopoulos G., **Ioannou E.**, Tzakou O., Roussis V. Evaluation of the repellent effects of *Nepeta parnassica* extract, essential oil and its major nepetalactone metabolite against mosquitoes. *Parasitol. Res.*, **2014**, 113, 1127-1134.
- (24) **Ioannou E.**, Koutsaviti A., Tzakou O., Roussis V. The genus *Pinus*: A comparative study on the needle essential oil composition of 46 pine species. *Phytochem. Rev.*, **2014**, 13, 741-768.
- (25) Trimech I., Weiss E.K., Chedea V.S., Marin D., Detsi A., **Ioannou E.**, Roussis V., Kefalas P. Evaluation of antioxidant and acetylcholinesterase activity and identification of polyphenolics of the invasive weed *Dittrichia viscosa*. *Phytochem. Anal.*, **2014**, 25, 421-428.
- (26) Georgantea P., **Ioannou E.**, Vagias C., Roussis V. Bisabolane and chamigrane sesquiterpenes from the soft coral *Pseudopterogorgia rigida*. *Phytochem. Lett.*, **2014**, 8, 86-91.
- (27) Tair A., Weiss E.K., Palade L.M., Loupassaki S., Makris D.P., **Ioannou E.**, Roussis V., Kefalas P. *Origanum* species native to the island of Crete: In vitro antioxidant characteristics and liquid chromatography - mass spectrometry identification of major polyphenolic components. *Nat. Prod. Res.*, **2014**, 28, 1284-1287.
- (28) Kladi M., Ntountaniotis D., Zervou M., Vagias C., **Ioannou E.**, Roussis V. Glandulaurencianols A-C, brominated diterpenes from the red alga, *Laurencia glandulifera* and the sea hare, *Aplysia punctata*. *Tetrahedron Lett.*, **2014**, 55, 2835-2837.
- (29) Kokkotou K., **Ioannou E.**, Nomikou M., Pitterl F., Vonaparti A., Siapi E., Zervou M., Roussis V. An integrated approach using UHPLC-PDA-HRMS and 2D HSQC NMR for the metabolic profiling of the red alga *Laurencia*: dereplication and tracing of natural products. *Phytochemistry*, **2014**, 108, 208-219.
- (30) Ignea C., Triikka F.A., Nikolaidis A.K., Georgantea P., **Ioannou E.**, Loupassaki S., Kefalas P., Kanellis A.K., Roussis V., Makris A.M., Kampranis S.C. Efficient diterpene production in yeast by engineering Erg20p into a geranylgeranyl diphosphate synthase. *Metab. Eng.*, **2015**, 27, 65-75.
- (31) Ignea C., **Ioannou E.**, Georgantea P., Loupassaki S., Triikka F.A., Kanellis A.K., Makris A.M., Roussis V., Kampranis S.C. A synthetic biology approach for the reconstruction of the chemical diversity of diterpene biosynthesis in yeast. *Metab. Eng.*, **2015**, 28, 91-103.
- (32) Petraki A., **Ioannou E.**, Papazafiri P., Roussis V. Dactylomelane diterpenes from the sea hare *Aplysia depilans*. *J. Nat. Prod.*, **2015**, 78, 462-467.
- (33) Kikionis S., **Ioannou E.**, Toskas G., Roussis V. Electrospun biocomposite nanofibers of ulvan / PCL and ulvan / PEO. *J. Appl. Polym. Sci.*, **2015**, 132, 42153.
- (34) Triikka F.A., Nikolaidis A., Ignea C., Tsatala A., Tziveleka L.A., **Ioannou E.**, Roussis V., Stea E.A., Bozic D., Argiriou A., Kanellis A.K., Kampranis S.C., Makris A.M. Combined metabolome and transcriptome profiling provides new insights into diterpene biosynthesis in *S. pomifera* glandular trichomes. *BMC Genomics*, **2015**, 16, 935.
- (35) Atwi M., Weiss E.K., Loupassaki S., Makris D.P., **Ioannou E.**, Roussis V., Kefalas P. Major antioxidant polyphenolic phytochemicals of three *Salvia* species endemic to the island of Crete. *J. Herbs Spices Med. Plants*, **2016**, 22, 27-34.

- (36) Ignea C., Athanasakoglou A., **Ioannou E.**, Georgantea P., Triikka F.A., Loupassaki S., Roussis V., Makris A.M., Kampranis S.C. Production of the forskolin precursor 11 β -hydroxymanoyl oxide in yeast using surrogate enzymatic activities. *Microb. Cell Fact.*, **2016**, 15, 46.
- (37) Ignea C., Athanasakoglou A., **Ioannou E.**, Georgantea P., Triikka F.A., Loupassaki S., Roussis V., Makris A.M., Kampranis S.C. Carnosic acid biosynthesis elucidated by a synthetic biology platform. *Proc. Natl. Acad. Sci. USA*, **2016**, 113, 3681–3686.
- (38) Dimou M., **Ioannou E.**, Daskalaki M.G., Tziveleka L.A., Kampranis S.C., Roussis V.* Disulfides with anti-inflammatory activity from the brown alga *Dictyopteris membranacea*. *J. Nat. Prod.*, **2016**, 79, 584–589.
- (39) Georgantea P., **Ioannou E.**, Evain-Bana E., Bagrel D., Martinet N., Vagias C., Roussis V. Sesquiterpenes with inhibitory activity against CDC25 phosphatases from the soft coral *Pseudopterogorgia rigida*. *Tetrahedron*, **2016**, 72, 3262–3269.
- (40) Zovko Končić M., **Ioannou E.**, Sawadogo W.R., Abdel-Razik A.F., Vagias C., Diederich M., Roussis V. 4 α -Methylated steroids with cytotoxic activity from the soft coral *Litophyton mollis*. *Steroids*, **2016**, 115, 130-135.
- (41) Tzani A., Elmaloglou M., Kyriazis C., Aravopoulou D., Kleidas I., Papadopoulos A., **Ioannou E.**, Kyritsis A., Voutsas E., Detsi A. Synthesis and structure-properties relationship studies of biodegradable hydroxylammonium-based protic ionic liquids. *J. Mol. Liq.*, **2016**, 224, 366-376.
- (42) Koutsaviti A., **Ioannou E.**, Couladis M., Tzakou O., Roussis V. ¹H and ¹³C NMR spectral assignments of abietane diterpenes from *Pinus heldreichii* and *Pinus nigra* subsp. *nigra*. *Magn. Reson. Chem.*, **2017**, 55, 772-778.
- (43) Kikionis S., **Ioannou E.**, Konstantopoulou M., Roussis V. Electrospun micro/nanofibers as controlled release systems for *Bactrocera oleae* and *Prays oleae* pheromones. *J. Chem. Ecol.*, **2017**, 43, 254-262.
- (44) Tziveleka L.A., **Ioannou E.**, Tsiourvas D., Berillis P., Foufa E., Roussis V. Collagen from the marine sponges *Axinella cannabina* and *Suberites carnosus*: Isolation and morphological, biochemical and biophysical characterization. *Mar. Drugs*, **2017**, 15, 152.
- (45) Tarhouni-Jabberi S., Zakraoui O., **Ioannou E.**, Riahi-Chebbi I., Haoues M., Roussis V., Kharrat R., Essafi-Benkhadir K. Mertensene, a halogenated monoterpene, induces G2/M cell cycle arrest and caspase dependent apoptosis of human colon adenocarcinoma HT29 cell line through the modulation of ERK-1/-2, AKT and NF- κ B signaling. *Mar. Drugs*, **2017**, 15, 221.
- (46) Kikionis S., **Ioannou E.**, Andrén O. C. J., Chronakis I., Fahmi A., Malkoch M., Toskas G., Roussis V. Nanofibrous nonwovens based on dendritic-linear-dendritic poly(ethylene glycol) hybrids. *J. Appl. Polym. Sci.*, **2017**, 135, 45949.
- (47) Rab E., Kekos D., Roussis V., **Ioannou E.** α -Pyrone polyketides from *Streptomyces ambofaciens* BI0048, an endophytic actinobacterial strain isolated from the red alga *Laurencia glandulifera*. *Mar. Drugs*, **2017**, 15, 389.
- (48) Vlachou M., Tragou K., Siamidi A., Kikionis S., Hatzianagnostou A. L., Mitsopoulos A., **Ioannou E.**, Roussis V., Tsoinias A. Modified in vitro release of the chronobiotic hormone melatonin from matrix tablets based on the marine sulfated polysaccharide ulvan. *J. Drug. Deliv. Sci. Technol.*, **2018**, 44, 41-48.
- (49) Ricci F., Carrassa L., Christodoulou M.S., Passarella D., Michel B., Benhida R., Martinet N., Hunyadi A., **Ioannou E.**, Roussis V., Musso L., Dallavalle S., Silvestri R., Westwood N., Mori M., Ingallina C., Botta B., Kavetsou E., Detsi A., Majer Z., Hudecz F., Bősze S., Kaminska B., Hansen

T.V., Bertrand P., Athanassopoulos C.M., Damia G. A high-throughput screening of a chemical compound library in ovarian cancer stem cells. *Comb. Chem. High Throughput Screen.*, **2018**, 21, 50-56.

(50) Meimeti E., Kafanas A., Pavlou P., Evangelatou A., Tsouparelou P., Kanellopoulos S., Kipouros P., Koliarakis N., Leonis G., **Ioannou E.**, Roussis V., Rallis M. Topical treatment of skin injury inflicted in mice by X-ray irradiation. *Skin Pharmacol. Physiol.*, **2018**, 31, 175–183.

(51) Tziveleka L.A., Pippa N., Georgantea P., **Ioannou E.**, Demetzos C., Roussis V. Marine sulfated polysaccharides as versatile polyelectrolytes for the development of drug delivery nanoplateforms: Complexation of ulvan with lysozyme. *Int. J. Biol. Macromol.*, **2018**, 118, 69-75.

(52) Vlachou M., Kikionis S., Siamidi A., Tragou K., Kapoti S., **Ioannou E.**, Roussis V., Tsotinis A. Fabrication and characterization of electrospun nanofibers for the modified release of the chronobiotic hormone melatonin. *Curr. Drug Deliv.*, **2019**, 16, 79-85.

(53) Vlachou M., Kikionis S., Siamidi A., Tragou K., **Ioannou E.**, Roussis V., Tsotinis A. Modified in vitro release of melatonin loaded in nanofibrous electrospun mats incorporated into monolayered and three-layered tablets. *J. Pharm. Sci.*, **2019**, DOI: <https://doi.org/10.1016/j.xphs.2018.09.035>.

(54) Dimaki A., Kyriazi M., Leonis G., Sfiniadakis I., Papaioannou G.T., **Ioannou E.**, Roussis V., Rallis M. Diabetic skin and UV light: Protection by antioxidants. *Eur. J. Pharm. Sci.*, **2019**, 127, 1-8.

Presentations in international and national conferences

In total 145 oral and /or poster presentations, among which 125 in international and 20 in national conferences.

Review / Overview articles

(1) **Ioannou E.**, Vagias C., Roussis V. Bioactive metabolites from marine algae. *BIO*, **2008**, 26, 68-72.

(2) **Ioannou E.**, Vagias C., Roussis V. Farming the oceans: The nutritional value of seaweeds. *BIO*, **2008**, 27, 67-70.

(3) Lefranc F., Koutsaviti A., **Ioannou E.**, Kornienko A., Roussis V., Kiss R., Newman D. J. Algae metabolites: from in vitro growth inhibitory effects to promising anticancer activity. *Nat. Prod. Rep.*, **2019**, in press.

TEACHING EXPERIENCE

Teaching of undergraduate courses

- **2013-present:** Co-teaching (with Professor O. Tzakou and Assoc. Professor M. Couladis) of the compulsory course **Pharmacognosy III** for the 4th-year students of Department of Pharmacy, NKUA.
- **2010-present:** Co-teaching (with Professor V. Roussis) of the compulsory course

Pharmacognosy II Laboratory for the 3rd-year students of Department of Pharmacy, NKUA.

- **2010-2011:** Co-teaching (with Professor V. Roussis) of the elective course **Chemical Ecology – Marine Pharmacognosy** for the students of Department of Pharmacy, NKUA.

- **2006-2008:** Laboratory assistance (as a PhD student) for the compulsory course **Pharmacognosy II Laboratory** for the 3rd-year students of Department of Pharmacy, NKUA.

Teaching of undergraduate and postgraduate courses

- **2015-present:** Co-teaching (with Professor E. Skaltsa, Professor A.L. Skaltsounis, Professor O. Tzakou and Professor I. Chinou) of the compulsory course **Bioactive Natural Products** for the students attending the Programme of Postgraduate Studies on “Pharmacognosy and Chemistry of Natural Products” of the Department of Pharmacy, NKUA.

- **2015-present:** Co-teaching (with Professor A.L. Skaltsounis) of the elective course **Marine Pharmacognosy – Synthesis of Natural Products** for the students attending the Programme of Postgraduate Studies on “Pharmacognosy and Chemistry of Natural Products” of the Department of Pharmacy, NKUA.

- **2017-present:** Co-teaching (with Professor V. Roussis) of the elective course **Bioactive Natural Products from Marine Organisms** for the students attending the Interdisciplinary Programme of Postgraduate Studies on “Oceanography and Management of Marine Environment” organized by the Departments of Biology, Geology and Geoenvironment, Physics and Chemistry, NKUA.

- **2013-present:** Participation in teaching of the compulsory course **Marine Resources** for the students attending the Interdisciplinary Programme of Postgraduate Studies on “Oceanography and Management of Marine Environment” organized by the Departments of Biology, Geology and Geoenvironment, Physics and Chemistry, NKUA.

- **2016-present:** Participation in teaching of the compulsory course **Seminars** for the students attending the Interdisciplinary Programme of Postgraduate Studies on “Materials Science and Technology” coordinated by the School of Chemical Engineering, National Technical University of Athens.

- **2010-2015:** Co-teaching (with Professor Emeritus A. Loukis and Professor I. Chinou) of the compulsory course **Chemistry of Natural Products I** for the students attending the Programme of Postgraduate Studies on “Pharmacognosy and Chemistry of Natural Products” of the Department of Pharmacy, NKUA.

- **2010-present:** Teaching of the compulsory course **Laboratory Techniques II** for the students attending the Programme of Postgraduate Studies of the Department of Food Quality and Chemistry of Natural Products, Mediterranean Agronomic Institute of Chania as Invited Professor for a week per year.

Writing of teaching manuals

- Roussis V., Ioannou E. 2011. Pharmacognosy II – Laboratory Exercises. Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA.

Supervisor of PhD students' theses

- Maria Harizani (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), "Isolation and structure elucidation of bioactive secondary metabolites from marine-derived bacteria", ongoing.
- Paolo Giaccio (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), "Isolation of new natural neurotrophin mimetics from marine microorganisms", ongoing.

Member of the advisory committee of PhD students' theses

- Stamatis Perdikaris (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: V. Roussis), "Isolation of secondary metabolites with antimicrobial activity from deep-water marine organisms», 02/2015.
- Anastasia Petraki (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: V. Roussis), "Isolation and structure elucidation of secondary metabolites from the gastropod *Aplysia depilans*", 07/2016.
- Eniko Rab (School of Chemical Engineering, National Technical University of Athens, Supervisor: D. Kekos), "Isolation and structure elucidation of secondary metabolites from marine-derived actinobacteria", ongoing.
- Aikaterini Kokkotou (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: V. Roussis), "Metabolic profiling of red algae from the genus *Laurencia* using an integrated approach based on NMR and HRLC-MS", ongoing.
- Fotini Papaioannou (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: O. Tzakou), "Isolation of bioactive secondary metabolites from plants of the family Labiatae", ongoing.
- Eleni Katsini (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: V. Roussis), "Isolation and structure elucidation of bioactive metabolites from marine-derived microorganisms", ongoing.
- Mohamed Tammam (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: V. Roussis), "Isolation and structure elucidation of secondary metabolites from marine organisms of the Red Sea", ongoing.

Supervisor of MSc students' theses

- Maria Harizani (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), "Isolation and structure elucidation of secondary metabolites from the red algae *Laurencia microcladia* and *Laurencia obtusa*", 07/2013.
- Asma Tair (Department of Food Quality and Chemistry of Natural Products, Mediterranean Agronomic Institute of Chania), "Natural product profiling of four Lamiaceae species from Crete: *Origanum microphyllum*, *Origanum dictamnus*, *Origanum vulgare* subsp. *hirtum* and *Satureja thymbra*", 07/2013.
- Eleni Katsini (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), "Isolation and structure elucidation of secondary

metabolites from marine-derived fungi”, 07/2014.

- Grigorios Malliarakis (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Biotransformation products of 14-oxo-3,7,18-dolabellatriene by an algicolous *Bacillus megaterium*”, 07/2015.

- Moez Ben Abdallah (Department of Food Quality and Chemistry of Natural Products, Mediterranean Agronomic Institute of Chania), “Total phenolic and flavonoid contents and antioxidant activity of *Opuntia ficus-indica* and *Foeniculum vulgare* extracts”, 11/2015.

- Eirini Stamati (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation and structure elucidation of secondary metabolites from marine-derived bacteria”, 12/2016.

- Anastasios Liatsos (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation and structure elucidation of secondary metabolites from the sponge *Spongia officinalis mollissima*”, 12/2016.

- Anastasia Zaridaki (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation and structure elucidation of secondary metabolites from marine-derived bacteria and fungi”, 09/2017.

- Eleni Anastasiadi (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation and structure elucidation of secondary metabolites from a brown alga *Cystoseira barbata*”, 12/2017.

- Ioanna Kostopoulou (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation and structural characterization of metabolites from a marine-derived bacterial strain *Bacillus* sp.”, 05/2018.

Supervisor of BSc students' theses

- Sotirios Mpikas (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from a red alga of the genus *Laurencia*”, 07/2015.

- Anamarija Tomic in the framework of ERASMUS program for students' exchange (University of Zagreb, Croatia), “Isolation of bioactive metabolites from the red alga *Sphaerococcus coronopifolius*”, 07/2015.

- Elissavet Gioti (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from the brown alga *Dictyota mediterranea*”, 07/2016.

- Maria Halkiadaki (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from the red alga *Laurencia obtusa*”, 07/2016.

- Natalia Sofia (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from the red alga *Laurencia majuscula*», 07/2017.

- Constantinos Dimarakis (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from the brown alga *Dictyota intricata*”, 09/2017.

- Marios Maravegias (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA), “Isolation of secondary metabolites from the red alga

Laurencia majuscula", 07/2018.

Member of the examination committee of PhD students' theses

- Maria Bourbouli (Department of Botany, Faculty of Biology, NKUA, Supervisor: A. Karagouni), "Benthic microorganisms of marine ecosystems as producers of bioactive substances", 07/2015.
- Aikaterini Koutsaviti (Section of Pharmacognosy and Chemistry of Natural Products, Department of Pharmacy, NKUA, Supervisor: O. Tzakou), "Comparative analysis of essential oils from the needles of 54 taxa of genus *Pinus* – isolation and structure determination of secondary metabolites from *Pinus heldreichii*, *Pinus pinea* and *Pinus nigra* subsp. *nigra*", 07/2016.
- Vassiliki-Christina Karakoussi (Section of Pharmacognosy – Pharmacology, Department of Pharmacy, Aristotle University of Thessaloniki, Supervisor: E. Kokkalou), "Phytochemical analysis of the plant *Indigofera hirsuta* (Leguminosae) and evaluation of the antioxidant activity and inhibition of ALR-1 and ALR-2", 07/2017.

External member of the examination committee of PhD students' theses from abroad

- Michael George Knott (Rhodes University, South Africa, Supervisor: D. Beukes), "Isolation, structural characterisation and anti-cancer activity of natural products from selected South African red marine algae", 03/2012.
- Nipun Mahajan (National University of Ireland Galway, Ireland, Supervisor: O. Thomas), "Identification of bioactive natural products after screening Irish marine bio-resources", 10/2016.

Member of the examination committee of MSc students' theses

In >20 MSc students' theses implemented in the Section of Pharmacognosy and Chemistry of Natural Products or the Section of Pharmaceutical Technology of the Department of Pharmacy, NKUA, as well as in the Department of Chemistry, NKUA and the Department of Food Quality and Chemistry of Natural Products, Mediterranean Agronomic Institute of Chania.

Member of the examination committee of BSc students' theses

In >20 BSc students' theses implemented in the Section of Pharmacognosy and Chemistry of Natural Products or the Section of Pharmaceutical Technology of the Department of Pharmacy, NKUA.

ADMINISTRATIVE EXPERIENCE

- Meetings' Secretary of Phytochemical Society of Europe (P.S.E.) (07/2017-present).
- Regional representative of Phytochemical Society of Europe (P.S.E.) for South-East

Europe (06/2011-03/2015).

- MC member for COST Action CM1407 “Challenging organic syntheses inspired by nature - from natural products chemistry to drug discovery” (03/2015-present).
- MC substitute member for COST Action FA1103 “Endophytes in biotechnology and agriculture” (12/2011-11/2015).
- Member of various committees in NKUA at the level of Department or School (eg. website and curriculum & syllabus booklet, drafting of technical specifications, receipt of supplies, etc).

ORGANIZATION OF SCIENTIFIC CONFERENCES

Participation in organizing committees

- Chairman of the organizing committee for the *10th European Conference on Marine Natural Products* (Crete, Greece, 3–7/09/2017).
- Member of the organizing committee for the *9th European Conference on Marine Natural Products* (Glasgow, Scotland, 30/08–2/09/2015).
- Member of the organizing committee for *Trends in Natural Products Research: A PSE Young Scientists’ Meeting* (Crete, Greece, 12-15/06/2011).
- Member of the organizing committee for *COST CM0804 Workshop on Natural Products as Drugs and Leads to Drugs* (Crete, Greece, 12-15/10/2010).
- Member of the organizing committee for *COST Action D28: Natural Products as a Source for Discovery, Synthesis and Application of New Pharmaceuticals - Midterm Evaluation Meeting* (Santorini, Greece, 28/09-01/10/2006).

Participation in scientific committees

- Member of the scientific committee for the *Trends in Natural Product Research - Young Scientists’ Meeting of Phytochemical Society of Europe* (Budapest, Hungary, 19–22/06/2019).
- Member of the scientific committee for the *30th International Symposium on the Chemistry of Natural Products & the 10th International Congress on Biodiversity (ISCNP30 & ICOB10)* (Athens, Greece, 25–29/11/2018).

PARTICIPATION IN FUNDED RESEARCH PROGRAMS

As Coordinator

- **2018-2020:** Research program funded by the private sector entitled “Investigation, evaluation and exploitation of natural products and provision of research services” (Budget for NKUA: 63.700 €).
- **2015-2017:** Research program funded by the private sector entitled “Chemical analyses of Cretan plants” (Budget for NKUA: 15.000 €).

As Principal Investigator (Partner or Subcontractor)

- **2018-2020:** Research program in the framework of the call “RESEARCH – CREATE – INNOVATE” entitled “Exploitation of the edible algae *Dictyopterus membranacea* and *Laurencia obtusa* in the Mediterranean cuisine as a functional food and nutritional supplement” (MedSUSHI, T1EAK-04048) (Budget for NKUA - Partner: 170.000 €).
- **2018-2020:** Research program in the framework of the call “RESEARCH – CREATE – INNOVATE” entitled “Production of high quality and added value biomolecules utilizing fishery by-products and discards” (BIOAΞIOΠOIO, T1EAK-02509) (Budget for NKUA - Partner: 215.000 €).
- **2018-2020:** Research program in the framework of the call “RESEARCH – CREATE – INNOVATE” entitled “Production of high-added value bioactive polysaccharides from macroalgae of the Greek seas and their valorization in the development of novel functional food” (BIOALGAFOOD, T1EAK-00232) (Budget for NKUA - Subcontractor: 40.000 €).

Participation in the preparation, submission, implementation and management

- **2018-2020:** Research program in the framework of the call “RESEARCH – CREATE – INNOVATE” entitled “Innovative multifunctional biomimetic micro-/nanofibrous scaffolds for the treatment of periodontitis” (NANOSCAPE, T1EAK-02499) (Budget for NKUA - Coordinator: 240.000 €, PI: V. Roussis).
- **2018-2020:** Research program in the framework of the call “RESEARCH – CREATE – INNOVATE” entitled “Cardioprotective properties of farming gilthead sea bream enriched with biologically active lipids from olive oil by-products” (ELAIOTSIPOURA, T1EAK-00687) (Budget for NKUA - Partner: 90.000 €, PI: V. Roussis).
- **2018-2021:** Research program MARIE SKLODOWSKA-CURIE INNOVATIVE TRAINING NETWORKS MSCA-ITN-2017-ETN entitled “A European training network for the discovery of neurotrophins small molecule mimetics as candidate therapeutic agents for neurodegeneration and neuroinflammation” (EuroNeurotrophin, EC Grant Agreement No 765704) (Budget for NKUA - Partner: 222.950 €, PI: V. Roussis).
- **2017-2019:** Research program in the framework of the call “REINFORCEMENT OF THE RESEARCH AND INNOVATION INFRASTRUCTURE” entitled “Upgrade and operation of the research infrastructure of NKUA in the framework of the infrastructure CMBR” within the Action “Centre for the study and sustainable exploitation of Marine Biological Resources” (Budget for NKUA - Partner: 300.000 €, PI: V. Roussis).
- **2013-2015:** Research program in the framework of the call “COOPERATION 2011” entitled “An integrated effort for the efficient production and further exploitation of the potent natural anti-inflammatory compound neorogioltriol and its congeners” (NRG, 11SYN_3_770) (Budget for NKUA - Subcontractor: 50.800 €, PI: V. Roussis).
- **2013-2015:** Research program in the framework of the call “COOPERATION 2011” entitled “Aegean Sea sponges and edible snails as alternative sources of collagen and bioactive substances” (ASESCoBIS, 11SYN_1_604) (Budget for NKUA - Subcontractor: 22.700 €, PI: V. Roussis).
- **2012-2015:** Research program in the framework of the call “COOPERATION 2011” entitled “Novel self-healing eco-friendly coatings with antifouling and anticorrosion

properties for maritime applications” (MARIPAINTS, 11ΣΥΝ_5_1274) (Budget for NKUA - Partner: 179.900 €, PI: V. Roussis).

- **2012-2015:** Research program in the framework of the call “EXCELLENCE” entitled “Bioactive natural products of marine-derived actinobacteria from East Mediterranean deep-sea sediments” (BIOMARACT, ARISTEIA-2587) (Budget for NKUA - Coordinator: 448.200 €, PI: V. Roussis).

- **2011-2014:** Research program in the framework of the call “COOPERATION 2009” entitled “A systems approach into the production of plant and algal diterpenes with high industrial and pharmaceutical value” (SysTerp, 09ΣΥΝ_23_879) (Budget for NKUA - Subcontractor: 45.000 €, PI: V. Roussis).

Participation in the research team

- Joint Research and Technology Programme between Greece and Romania (2011-2012) entitled “Chemical transformation of marine polysaccharides into levulinic acid” (PI: V. Roussis).

- Research program funded by the private sector entitled “Development of a separation method for extracts derived from marine actinomycetes with the use of LC-MS” (PI: V. Roussis).

- Joint Research and Technology Programme between Greece and Tunisia (2005-2007) entitled “The algae as a source of bioactive metabolites with antifouling activity” (PI: V. Roussis).

- Joint Research and Technology Programme between Greece and Italy (2005-2007) entitled “Isolation and identification of biotoxins from microalgae of the Greek seas” (PI: V. Roussis).

- Joint Research and Technology Programme between Greece and Spain (2005-2007) entitled “Isolation of bioactive marine natural products exhibiting activity against biofouling” (PI: V. Roussis).

- Research program of the Ministry of Education “Pythagoras II” entitled “Isolation of antifoulants from marine organisms” (PI: V. Roussis).

- Research program in the framework of the call “EPAN” entitled “Exploitation of bioactive metabolites from marine algae” (PI: V. Roussis).

- Research program Quality of Life and Management of Living Resources entitled “ALGINET-Microalgae as cell factories for chemical and biochemical products” (PI: V. Roussis).

COMMISSION OF TRUST

Guest editing and reviewing of manuscripts for scientific journals

- Member of the Editorial Board for *Marine Drugs* (2017-present).
- Guest Editor for the *Special Issue on “Triterpenoids from marine organisms”* in *Marine Drugs* (2018).
- Guest Editor for the *Special Issue on “Biotransformations utilizing marine*

bacteria/fungi" in *Marine Drugs* (2017).

- Guest Editor for the *Special Issue on "Triterpenes and Triterpenoids 2016"* in *Molecules* (2016).

- Guest Editor for the *Special Issue on "Bioactivity of Marine Natural Products"* in *International Journal of Molecular Sciences* (2015).

- Recurring reviewer of > 100 manuscripts for > 25 scientific journals, including *Analyst*, *Biochemical Systematics and Ecology*, *Bioorganic and Medicinal Chemistry*, *BMC Research Notes*, *Current Organic Chemistry*, *Journal of Agricultural and Food Chemistry*, *Journal of Chromatography B*, *Journal of Functional Foods*, *Journal of Natural Products*, *Marine Biotechnology*, *Marine Drugs*, *Metabolomics*, *Microbial Cell Factories*, *Molecules*, *Organic Letters*, *Phytochemistry Letters*, *PLOS One*, *Scientific Reports*, *Tetrahedron*, *Tetrahedron Letters*.

Participation in evaluation committees

- Member of the peer review panel for research proposals submitted in the 2nd ERA-MBT Joint Call on the topic "Biodiscovery - Bioactive molecules from the marine environment" (Norway, 05-07/2016).

- External member of examination committees of PhD students' theses from abroad (Rhodes University, South Africa, 03/2012 & National University of Ireland Galway, Ireland, 10/2016).

- External member of scientific evaluation committee of applications for early stage researchers in the framework of the research project MARIE SKLODOWSKA-CURIE INNOVATIVE TRAINING NETWORKS "Innovative life science PhD programme in South Italy" (INCIPIT, EC Grant Agreement No 665403) (Italy, 04-06/2017 & 10/2017-02/2018).

Invited speaker in Greece and abroad

- **02/2018**, Institute of Marine Environment and Resources (IMER), Hai Phong, Vietnam: "Searching for bioactive metabolites with biomedical – biotechnological potential from the East Mediterranean Sea".

- **02/2018**, The Hong Kong University of Science and Technology (HKUST), Hong Kong: "Bioactive natural products from marine macro- and microorganisms from the East Mediterranean Sea".

- **01/2018**, King Abdullah University of Science and Technology (KAUST), Saudi Arabia: "In search of bioactive metabolites with biomedical – biotechnological potential".

- **10/2017**, Oitylo, Greece: "From the sea to the drugstore and the clinic" in the framework of a scientific seminar entitled "*Drugs from the sea*" organized by the Greek Society for Ethnopharmacology.

- **10/2017**, Athens, Greece: "Bioactive natural products from marine macro- and microorganisms and their applications" in the framework of the *18th Panhellenic Pharmaceutical Congress*.

- **09/2016**, Institute of Marine Biology, Biotechnology & Aquaculture (IMBBC) – Hellenic Centre for Marine Research (HCMR), Crete, Greece: "News from the border: marine microorganisms as sources of new natural products or as biocatalysts".

- **08/2016**, Universidade Federal de Santa Catarina, Florianopolis (UFSC), Brazil:

“Marine organisms as a prolific source of bioactive natural products” in the framework of seminars for postgraduate students at the Department of Pharmaceutical Sciences of UFSC.

- **10/2015**, Athens, Greece: “Bioactive natural products from marine organisms” in the framework of the *17th Panhellenic Pharmaceutical Congress*.

- **06/2015**, National Technical University of Athens, Greece: “Natural products from marine organisms: an eco-friendly approach against fouling” in the framework of the seminar *“Days of Sustainability 2015: From theory to practice”*.

- **08/2012**, Hyderabad, India: “Secondary metabolites with cytotoxic activity from Mediterranean and Red Sea soft corals” in the framework of the *“International Symposium on Chemistry and Chemical Biology of Natural Products”*.

MISCELLANEOUS

Membership in scientific societies or professional boards

- Geotechnical Chamber of Greece: member (11/2003-present).
- Phytochemical Society of Europe: member (01/2006-present), regional representative for South-East Europe (06/2011-03/2015) and meetings’ secretary (07/2017-present).
- Association of Greek Oceanographers: member (01/2009-present).

Foreign languages and computer skills

- **English:** Certificate of Proficiency in English, University of Cambridge (06/1995).
- **German:** Zentrale Mittelstufenprüfung, Goethe-Institut (03/1996).
- **Computer skills:** operating systems (MS Windows, LINUX) and office applications (MS Office), programming language Pascal, software for data acquisition and processing (eg. MestReC, MestReNova, WinNMR, Topspin, Xcalibur, Agilent ChemStation, ChemOffice, encipher, HyperChem, ACDLabs), databases (eg. MarinLit, AntiBase, SciFinder, Reaxys), etc.