

e-newsletter PANORAMA

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A Few Essentials... of the e-newsletter PANORAMA

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THE AUA SOCIAL MEDIA



THE CREATION OF A SOCIAL MEDIA HUB & A PRESS NETWORK ACROSS THE AGRICULTURAL UNIVERSITY OF ATHENS

In the era of the COVID-19 pandemic, there has been a strong increase, in the need for live communication, at Universities, all over the world. Social Media in the AUA premises enjoy special advantages, such as:

- Serving as essential communication channels for the University actions and activities, by offering online networking events to bridge connections between ideas, departments, and students, inside and outside the University,
- Strengthening its public image: People, especially the young, have been increasingly looking to social media for real-time updates and information,
- Encouraging the recruitment of new enrolments and keeping them enrolled,
- Sharing a glimpse into the campus life with virtual tours,
- Inspiring wanderlust with snapshots of the Institution's grounds, by featuring the clubs, communities, and social opportunities attendees can get involved in, making it easy for students to picture their future at our University,
- Promoting values and achievements, by making our Institution's mission and values known,
- Playing a significant role, in setting the tone for the campus culture, giving prominence to the kind of environment our University aims to cultivate,
- Engaging students on and off campus: Even under normal, non-pandemic circumstances, not all students live on campus. That does not mean, they are less motivated to engage and participate in student life.
- A key advantage of the social media functioning in our University is that, it allows students to connect, from home, different campuses, work and study programs as well as lecture series, at a (tele)conference, or wherever, especially, under the conditions of limited social contact that reaches even "alienation", set and maintained for a long time, by the Coronavirus disease,
 - Running social media contests, by letting students share their work,
 - Staying on top of trends with social listening and establishing social media guidelines.

In addition, nowadays, the role of the Press is, constantly getting a special scope, promoting the quick and effective contact of information, as well as the flow of all kinds of events, organised by the University. The AUA can "streamline the onboarding process", supporting best practices, inasmuch maintaining a unified voice across channels. Therefore, the dissemination of the electronic version of the newsletter Panorama shall conduce to building and empowering the University communities, letting its social media flourish on Higher Education matters and University life, in general.



INTERESTING MAPS OF THE AGRICULTURAL UNIVERSITY OF ATHENS



Contemporary Map of the AUA

as presented nowadays, including the Regional Infrastructure and Departments of the Institution, located across the Central Greece, in particular, established around the Karpenissi surroundings and the building complexes of the new Departments, founded in Thebes and Amfissa.



Network mapping of the AUA National Collaborations



Network mapping of the AUA International Collaborations with America, Europe, Africa, Asia and Oceania.

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Welcoming Message and Greetings from the AUA Rector & Acknowledgements





Dear Community Members,

We have been going through a special academic year, during which, most of the academic tasks, functions and activities of the Agricultural University of Athens, have been fulfilling, by means of the e- learning and e-class platform systems, rather than with physical presence.

The quality of face - to - face teaching is certainly, a key element of the educational procedure; the argument that the immediate interaction, among students and professors, cannot be substituted, in any way, by distance learning methods, is undoubted. This is much more applicable to the cases of the lab exercises, pertaining

to the majority of the courses offered, by the Study Programmes, supported in turn, by the Departments of the Institution.

Taking such circumstances into account, in addition to having full awareness, of the superiority and value of education, by physical appearance, against any remote, online learning means, instruction being carried out, at a University that remains alive, as efficiently as possible, welcoming the students back to the lecture halls, forms a fundamental objective of the University; keeping, always, the health protection, of all the academic community staff, as its overriding concern.

In the meantime, despite the challenges and new demands arisen by the global pandemic, SARS-CoV-2, (COVID-19), our Institution has been developing, functioning, adjusting, educating, making research and accomplishing innovations, in a good number of the fields it treats, as much as possible. Investment upon extroversion, acting as the driving force of any social offer and connection with society, constitutes a qualitative characteristic of every Public - Higher Education Institution (HEI). Indeed, all the academic actions and activities of both national and international level, in which our University has been so far, actively participating, express its mission, inasmuch aiming at high standing and impact, in the academic world.

The present e-newsletter includes a great deal of important academic events, taken place, at the depth of one year, actually up to the beginning of 2021, under the hard conditions caused by the pandemic. We do hope and wish that this first issue should mark the optimistic beginning of frequent information dissemination procedures, in an electronic and digital manner, both among the academic personnel, as a whole, and the outside friends of the Agricultural University of Athens.

With warm greetings, The Rector of the Agricultural University of Athens, Professor Spyridon Kintzios



Warm thanks are due to all the Faculty Staff, as well as the Researchers of the Agricultural University of Athens, inasmuch the Academic Personnel, including both the Administrative Staff and the Students, for all the information and material they have provided for the Department of the Public and International Relations Office.

The Agricultural University of Athens, Head of Greek Universities (HEI), at the International Forum "GREECE IN 2040"



On Wednesday, the 27th of January, the presentation of the 14 institutional bodies, which will participate in the Forum "Greece in 2040", organized by the Commission "Greece 2021", scheduled for next October at the Zappeion Palace, took place online, before the Prime Minister, with a view to mapping the potential and prospects of Greece, in the long term, actually, within twenty years.

Responding to the invitation of the Committee "Greece 2021", the Hellenic Universities Rectors' Synod (Convention), being one of the institutional bodies, has appointed the Rector of the Agricultural University of Athens, Professor Spyridon Kintzios, as the head of the working group, which will feature a study upon the development of Higher Education, over the next two decades, based on both the current challenges and the key role of the Public University in the rapidly evolving societies of high knowledge intensity.

In this context, strategic issues that will concern us, among others, are the following:

- The evolution of the Greek University in the process of European Integration, especially through the institution of European Universities,

- The role of Universities as Regional Development Agencies,
- The participation of the Universities in Research and Innovation, besides the necessary Institutional Interventions,
- The new cognitive objects that will emerge in the future,
- The transition to the digital age.

This choice is a special honor for the Agricultural University of Athens, which entered its second century of operation. Apart from the AUA Rector, as coordinator, the working group includes the following members: Christina Koulouri, *The Rector of Panteion University*, Triantaphyllos Albanis, *The Rector of the University of Ioannina*, Athanasios Katsis, *The Rector of the University of Peloponnese*, Ioanna Laliotou, *The Vice Rector for International and Public Relations*, *University of Thessalia*.

Section 2: Actions

The Agricultural University of Athens hereinafter, referred to as a Member of the United Nations Academic Impact





The Agricultural University of Athens (AUA) is currently, a member of the United Nations Academic Impact (UNAI) of the United Nations.

United Nations Academic Impact (UNAI) is the result of an initiative, by the Outreach Division of the United Nations Department of Global Communication, which aligns educational and research institutions with United Nations principles for global prosperity, enhancing progress and dealing with crises.

Based on that, 1,500 institutions from 147 countries have been cooperating with the United Nations to promote peace, human rights and sustainable development, top priorities worldwide.

In addition, United Nations Academic Impact (UNAI) aims to support the achievement of the United Nations Sustainable Development Goals, by focusing on the interrelationship between education and sustainable development. Furthermore, it aims to create a dynamic global partnership to promote a new culture, governed by intellectual social responsibility. Basic principles, such as freedom of expression and speech, unhindered participation in education and dialogue open to everyone, form the basis of this cooperation. The Agricultural University of Athens is committed to following and promoting through at least, one action per year - the following principles: commitment to the United Nations Charter, human rights, educational opportunities for all,

sustainability, capacity building in higher education systems, peace and conflict resolution, tackling poverty, opportunity for higher education, for all people concerned, non-"learning" of intransigence. Finally, the Agricultural University of Athens with its "impetus to advance" will be a "springboard", for even more important distinctions worldwide.

Section 3: Research – Research Programs

European Research Project, coordinated by IMBB-FORTH, receives prestigious Horizon 2020 grant for the development of highly selective and safe insecticides.

Action Coordinator, Professor John Vontas, Director Pesticide Science lab, Department of Crop Science, Group Leader Molecular Entomology, Institute Molecular Biology and Biotechnology/Foundation for Research and Technology (IMBB/FORTH).

Honeybees pollinate the majority of crops, but their survival is under threat and the parasitic mite Varroa destructor may be a major cause of honey bee decline. Beekeepers use selective chemical acaricides with low bee toxicity to control Varroa infestation, a powerful "pro-drug" approach, relying on species-specific bioactivation, to attain this selective toxicity and protect bees. The group of Prof. John Vontas (on behalf of the Agricultural University of Athens and IMBB-FORTH), in collaboration with several major European Research Institutes and Industrial partners, as well as the University of Kentucky (USA), won an important grant, within the framework of the EU Horizon 2020 Programme.



The project is called CypTox. It will apply biotechnology excellence to exploit the cytochrome P450 (CYP) metabolic/detoxification pathway of target and non-target organisms, to develop novel insecticides, efficient against selected insect & mite pests, but highly selective and safe for bees, pollinators and the environment.

The program has a duration of four (4) years. It will provide excellent research training and networking, within a creative and flexible environment that actively promotes the integration of academic rigor and commercial pragmatism, through mobility between sectors and focused training events. CypTox will also highlight to the society the urgent need to develop new generation insecticides/bioinsecticides, to control insect pests and disease vectors, which seriously threaten human health and food security.

This highly innovative Research Program was based on a recent breakthrough paper of Vontas group, led by the PhD student Spyros Vlogiannitis (AUA), which was published in the Proceedings of the National Academy of Science (PNAS)1. This study featured an evolutionary rare strategy for circumventing pesticide resistance in the major bee parasite, via suspending the Cytochrome P450 based activation mechanism, and highlighted the importance of the pathway in toxicity and selectivity.



Figure 1. Resistant varroa, one of the most destructive bee parasite worldwide, is feeding undisturbed on a bee, but is not affected by high insecticide doses, which should "normally" kill them.

By combining bioassays, biochemical assays with radiolabeled insecticides, full genome transcriptomic analyses and reverse functional genomic approaches, Vlogiannitis et al. identified a high resistant Varroa population from Greece, which escapes toxicity, by down regulating the activating enzyme, a P450 monooxygenase.

This rare, but evolutionarily powerful solution to achieve resistance, demonstrates that the current proinsecticide approach is under threat, as it can be circumvented, and highlights the need to re-consider the pipeline to develop selective pest control agents. It also indicates opportunities for exploiting this primary metabolic pathway for the development of highly efficient, selective and safe insecticides.

The CypTox will contribute novel solutions for pest control, and it will promote the excellence and international networking of the Agricultural University of Athens.

The work is published today, in Proceedings National Academy of Science (PNAS)¹.

¹ Vlogiannitis S, Mavridis K, Dermauw W, Snoeck S, Katsavou E, Morou E, Harizanis P, Swevers L, Hemingway J, Feyereisen R, Van Leeuwen T, Vontas J. (2021) Reduced proinsecticide activation by cytochrome P450 confers coumaphos resistance in the major bee parasite Varroa destructor. PNAS. 118(6) e2020380118. DOI: 10.1073/pnas.2020380118.

Check out more here:

https://www.pnas.org/content/118/6/e2020380118

Development of Innovative "Tools" for the Authenticity Identification of major exportable Greek products of high added value, through "non- invasive, non - destructive" analytical techniques:

Motivation of Professionals and Consumers

Action Coordinator, **Petros A. Tarantilis**, Professor on Instrumental Chemical Analysis of Natural Products, Laboratory of Chemistry, Department of Food Science & Human Nutrition, Dean of the School of Food and Nutritional Sciences.

Consumers' right to receive trustful information about the food they purchase has been, formally set by European Commission, whilst food quality remains a fundamental goal of World Health Organization. Nonetheless, traditional Greek products of amazing benefits, such as extra virgin, virgin olive oil and honey, are highly susceptible to several types of food fraud.

On the grounds of strong economic motivations, intentional substitution and/or addition of injurious-to-health, cheaper or inferior quality substances, false declaration regarding geographical and botanical origin, besides food mislabeling are highly observed, setting the "authenticity" of such products questionable, leading to public health concern, having strong implications for Greek economy, too.

QuaAuthentic_GR principal aim is to verify the quality standards of Greek traditional products of high added value, so as to firstly, protect final consumer from non-authentic food products and secondly, enhance Greek food producers, suppliers and service establishments, to competitively enter and remain in national and international markets.

A holistic approach will be followed, commencing from the basic research, through the development of Innovative "Tools", to verify the authenticity of Greek olive oil and honey, by estimating their distinctive, both qualitative and quantitative profile, according to their geographical and botanical origin.



To meet this purpose, among others, innovative "non-destructive/non-invasive" laboratory analyses and chemometrics will be applied, in the context of metabolomics. This will be framed by, appropriately designed educational activities to enhance food producers', food service operators' and consumers' awareness, as regards authenticity and adulteration issues. To manage all the aforementioned, accredited food laboratories, research organizations and food service establishments, are to collaborate.

QuaAuthentic_GR methodology will be organized, as follows:

- Critical review - Needs assessment,

- Development of Innovative "tools" to identify authenticity of Greek olive oil and honey varieties, through GC-MS, FT-IR and chemometrics - Database synthesis,

- Verification of the developed "tools" in food products "real-market setting" – Geographical and botanical origin identification,

- Critical assessment (through questionnaires) of consumers', producers' and food service operators' awareness and views, regarding food authenticity issues and design of appropriate educational material.



The expected outcomes are:



Development of Innovative "tools" identifying authenticity parameters -in Greek traditional products- with high accuracy and sensitivity, accessible to laboratories and food safety authorities,

 \checkmark

Inclusion of protocols in food industries' "Good Manufacture and Industrial Practice", as an additional preventive measure, against financial penalties, so as to retain their good reputation,



Consumers' skills acquisition, in order not to be easily deceived.

QuaAuthentic_GR outcomes, will be financially and commercially exploited, by all partners, based on their professional field, e.g., database, with the standards of Greek olive oil and honey, according to their geographical and botanic origin, available for sale, innovative services provision, of high accuracy to verify the authenticity of food products, attracting new clients, use of the "authenticity" verification, as an additional marketing tool. The potential deposition of the developed methods, in "The Association of Official Agricultural Chemists, AOAC" will be of extra prestige for all partners, enhancing their reputation.

In conclusion, QuaAuthentic_GR is to have a dual positive effect; along with the public health impact, the verification of "authentic" Greek traditional products, with a holistic quality-standards approach, it is expected to strongly, enhance their competitiveness, in national and international markets, too.



SPME-GC-MS – Geographical Differentiation







Section 4: Innovative Products

CAROBITES - a Ready to Eat sweet snack of high nutritional value, based on Carob, combined with the innovative technology of edible coating, ideal for everyone, including athletes, people on diet, diabetics, and children - THE AWARD WINNING, actually the first ECOTROPHELIA Award 2014, AND COMMERCIALIZED INNOVATIVE PRODUCT OF the AUA

CAROBITES - A delicious dessert that brings the feeling of satiety, by eating it. Carobites is a naturally sweet, nutritionally superior snack, owing its special taste in carob's inherent sweetness. It contains carob flour, locust bean syrup, locust bean honey, margarine and hazelnut paste.

The originators of that brilliant idea: Panagiotis N. Skandamis, *PhD Professor Lab. Food Quality Control & Hygiene, Department of Food Science & Human Nutrition, in collaboration with a group of remarkable faculty staff and researchers.*



What about Health Benefits of carob products?

Carob is up to 8% protein. It contains Vitamins A, B, B2, B3 and D. It is high in calcium, phosphorus, potassium, magnesium and contains iron manganese and copper. Carob Products are offered, in different shapes and sizes.

- The most recently made carob products, correspond to the regulations of the European Union, having received the bio qualification in Greece and in the European Union, from TUV Austria, the Organisation of Testing and Certification of Organic Products,
- Carob is a healthy alternative to cocoa. Carob, unlike cocoa, is free from caffeine and theobromine that are both stimulants,
- In addition, Carob does not contain amine and phenylethylamine, which can trigger migraines and allergic reactions,
- Carob has no oxalic acid, which prevents the body from using calcium and zinc, Oxalic acid in cocoa, may be connected to the onset of spottiness, in some teenagers, by eating larger amount of chocolate,
- Carob is gluten free, thus it is a great treat, for those who suffer from a condition, called celiac disease,
 All of the Carob Products are gluten free, high in protein and low in fat,
- Carob Products contain twice as much calcium, than dairy milk,
- Carob Products aid digestion, lower cholesterol levels, relieve diarrhoea in infants and adults, relieve asthma (whether or not caused by allergies), act as an expectorant, are caffeine free, ease coughs and colds, contain Gallic acid, and help polio prevention, too,
- Integration of innovating technology of edible coatings enhances its stability and handling (portioning), while the limited processing requirements along with its recyclable package enforce "Carobites" ecological character.

Press HERE, for product availability by ESHOP

For more information, click in the link https://cretacarob.com/en/carob/

Section 5: Distinctions, Awards, Excellence- Scholarships

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Faculty Staff

THE ANTARCTICA SERVICE MEDAL-ASM

Dr. Ioannis Baziotis, Assistant Professor at the Natural Resources Management & Agricultural Engineering Department, received a special award on February 2021. In fact, he has received the Antarctic Service Medal-ASM of the United States for his participation in the NASA-NSF- sponsored mission, called "The Antarctic Search for Meteorites - ANSMET".



This medal represents a very prestigious award, given to those in the service of the United States great interest in studying the Antarctic Sciences.

Starting in 1st January 1946, four medals have been established, so far:

- 1. "The Byrd Antarctic Expedition Medal",
- 2. "Second Byrd Antarctic Expedition Medal",
- 3. "The U.S. Antarctic Expedition Medal", and
 - 4. "The Antarctica Service Medal".

It is notable that, ASM is issued back in 7th July 1960; at the reverse side of the medal, three words are written on it, wisely: "Courage", "Sacrifice", and "Devotion". Following Ralph's Harvey (the Principal Investigator - PI of ANSMET) words, Dr. Baziotis is the first Greek ANSMET member, having received such an award.

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The ribbon of the Antarctica Service Medal is elaborate in its thematic symbology. The outer bands of black and dark blue comprise five-twelfths of the ribbon's width, representing five months of the Antarctic darkness; the center portion, by its size and colors – grading from medium blue, through light blue and pale blue to white – symbolizes the seven months of solar illumination, and the Aurora Australis, too.

COVID-19

Featuring the specialized labs of the AUA, within the framework of the global fighting, against the Corona Virus, SARS-COV-2

The pandemic: The AUA Scientists in new discovery - The Key Protein for the early diagnosis of the Covid 19 disease

Development of a Portable, Ultra-Rapid and Ultra-Sensitive Cell-Based Biosensor for the Direct Detection of the SARS-CoV-2, S1 Spike Protein Antigen

One of the key challenges of the recent COVID-19 pandemic is the ability to accurately, estimate the number of infected individuals, particularly asymptomatic and/or early-stage patients.

The AUA Scientists, herewith report the proof of the methodological concept development of the novel biosensor assay, able to detect the SARS-CoV-2, S1 spike protein, expressed on the surface of the virus.

That biosensor is based on membrane-engineered mammalian cells, bearing the human chimeric spike S1 antibody. Experts demonstrate that the attachment of the protein to the membrane-bound antibodies, resulted in a selective and considerable change, in the cellular bioelectric properties, measured by means of a Bioelectric Recognition Assay.

In fact, the novel biosensor provided results in an ultra-rapid manner (3 min), with a detection limit of one (1) fg/mL and a semi-linear range of response, between ten (10) fg and one (1) μ g/ml.

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Conclusions

Plan to optimize the assay, by expanding the number of cell lines to be membrane-engineered with the human chimeric spike S1 antibody and by further, investigating the cross-reactivity and specificity of the biosensor, in particular, against the S proteins of other coronaviruses,

Supportive work on improving the interface of the read-out device, with an embedded software, displaying the ability to provide the end-user with results, as a functional decision-support tool.

Fervent hope to be able to supply an efficient monitoring tool for assisting transmission pattern analysis and the identification of asymptomatic cases, as a new contribution to the global effort to manage the Coronavirus pandemic.

For more details about the materials and methods adopted, as well as the results attained and the references included, check out in the link

https://www.mdpi.com/1424-8220/20/11/3121/htm

Instant self-test for COVID-19 detection from the Agricultural University of Athens

With the mobile phone, or a tablet and in just three minutes, we will be able to see, whether we have been infected with COVID-19.

Scientists at the Agricultural University of Athens have developed a biosensor that can be integrated into an easy-to-use platform and offers rapid detection of the spike S1 Sars-CoV-2 surface protein, the most important marker of the virus, at the first day of the infection, even if there are no symptoms.

In terms of use, the test will be very simpler, simpler than the common self-tests. The "Greek" biosensor can also be used for the rapid and mass evaluation of drugs that block the entry of the virus, or its interaction with the host cells (i.e. humans).

Currently, the Researchers of the Agricultural University of Athens are working feverishly, to publish new results from their successful clinical trials, in samples of nasopharyngeal swab and saliva, in collaboration with a Large Public Reference Hospital and to optimize more sensor parameters. The Researchers see these improvements, as means to promote the use of their test, in mass testing worldwide.

The method of SARS-CoV-2 detection has already, been validated in a clinical study, conducted by an independent Research Team and the results were published in the prestigious scientific journal of Virological Methods, confirming the effectiveness of the innovative cell biosensor, developed by the AUA Research Team.



According to the Rector of the Agricultural University of Athens and Director of the Cell Technology Laboratory of the Department of Biotechnology, Prof. Spyridon Kintzios, "the results of clinical trials show that, the method is very reliable and in the near future, will enable citizens to test themselves at home, even with saliva samples". In addition, the Rector mentioned, with pride and motivation that "Our university, in collaboration with distinguished Greek Scientists, is a pioneer in the creation of cellular biosensors of extremely advanced technology, not only for common viruses, such as influenza, but also, for many other dangerous infectious diseases".



AWARD TO A MUCH PROMISING STUDENTS TEAM IN THE GLOBAL CONTENT OF SYNTHETIC BIOLOGY

Meet iGEM Athens 2020!

IGEM Athens 2020 engineers microorganisms to create a structurally coloured material, aiming to replace conventional dyes.

Under the coordination of Vassiliki Koumandou, Assistant Professor of the Lab: Genetics of the Department of Biotechnology, on the part of the Agricultural University of Athens. Optimum use of the Genetics Laboratory Infrastructure for the Project Implementation.

Let's meet the Enthusiastic Team...



Twelve (12) dynamic Undergraduate Students, from the National and Kapodistrian University of Athens, the National Technical University of Athens and the Agricultural University of Athens.

Spyros, George and Kally study at the Department of Biology, Orsalia at Medicine School, Silia, Klea, Ilias, Dimos and Eleftheria at the Chemical Engineering School, Natalia at the Electrical and Computer Engineering School, Marianna and Andreas, at the Biotechnology Department, with a lot of passion and excitement, have joined their forces for the creation of the third team, in a row from Athens that has participated, in the iGEM Competition! Although each one of them, work on specific aspects of the research work, necessary for their project, such as modeling and conducting laboratory experiments, they operate as members of an interdisciplinary team, constantly interacting with each other and moving as one, towards the goal of gaining knowledge, in areas they meet for the first time.

Their project:

The title of their project is "An engineered biofilm for the production of a new, structurally coloured material". In nature, colours can come in two forms, either by chemical pigments, or due to the physical structure of surfaces.

Certain bacterial strains, such as Flavobacterium johnsoniae, exhibit structural colours, when grown on solid media, or in naturally, occurring biofilms. This phenomenon is, largely caused by a tight, single-layered cellular arrangement, in the micron scale.

In their project, they aim to engineer Flavobacterium johnsoniae to produce cellulose, in order to create a structurally, coloured material. In parallel, they want to transfer these properties to an engineered Escherichia coli strain.

A novel stochastic model that estimates cell interactions and processes will be created, along with a simulation, predicting the colour of a known structure. This in silico toolbox will be used to guide the wet lab experiments and give us an insight into the mechanisms involved.

The biofilm will be engineered in vivo, by modulating cellular adhesion and communication. In a second step, they will manipulate the cells to excrete an extracellular matrix that retains the structural colour, to be used, as a novel material.



Their inspiration & applications:

One of the biggest global problems that needs humanity's attention is climate change. Its consequences are visible, and its causes are numerous. Part of this problem is pollution, caused by the mass use of dyes in products, facilities, and supplies. These dyes are, neither environmentally friendly, nor beneficial to human health.

At this point, they draw inspiration from nature, which, through the evolution of structural colour, provides them with the alternative of replacing conventional dyes. Structural colour can be found, in a variety of organisms and bacterial strains and has a wide range of useful properties, such as thermal insulation, hydrophobicity, and iridescence.

Having a clear goal, plenty of inspiration and the tools of SynBio, they aim to engineer a sustainable biological material, with structural colour properties, which can be a substitute for a significant part of chemical dyes, leading to the reduction of their harmful properties.

The successful creation of this material is expected to be used, in a variety of applications, such as coating surfaces on cars, buildings and numerous technology products.

Due to the uniqueness of their structure, it can also, be used for the authentication of credit cards and banknotes, inasmuch, as a new tool for BioArt.

These applications are further, reinforced by other advantageous properties of the material, such as its biodegradation, its sustainable production, and the absence of unwanted by-products during the formation process.



It is remarkable that since 2021, the iGEM Athens team has been participating in the contest anew, under the topic "in vivo production dNTPs, for a user - friendly and accessible method PCR"

The project of the iGEM Athens Team had met the contest criteria, for the silver category and is available on the official webpage, in addition to its award gained for the best promotional video of the contest, in the category of the Undergraduate projects.

The elaborated project forms a noteworthy example of the remarkable National and International Actions, into which the Agricultural

University of Athens has been participating for years, having earned pioneering distinctions in the contemporary and advanced Sections of Molecular Genetics, Bioinformatics, Animal Biotechnology, Molecular Evolution and the Genetics of diseases, branches that further aim at developing and upgrading the traditional role of the University, since it keeps on fulfilling the productive and development needs of the Greek Agriculture and the society in general, in the best possible way.

Follow the team on their journey!

They are always excited to share their new story and the events they organize, as well as to exchange ideas, with other teams and individuals!

> Contact the iGEM Athens Team, at their e-mail, igemathens2020@gmail.com & igemathens2021@gmail.com

> like their Facebook page and follow them on Instagram!

GRADUATIONS HELD



During the graduations held, with respect to the new Graduates of the AUA Departments, in December 2020, by means of online - remote platforms, abiding by the Joint Ministerial Decision, entitled "Functioning of the Higher Education Institutions, under the framework of the measures, taken for the prevention of the Coronavirus spreading, while operating, (JMD 115744/Z1/04.09.2020, art 9, (1) of the Official Government Gazette B' 3207, 04.09.2020), the Award Ceremonies of the Bequests - Legacies and Sponsorships- Grants, supplied by the AUA, in addition to those of the Praises of the Students with Excellent Achievements, of the pertinent Departments, that took place at the same time, accompanying, such an important event.

Needless to say that, within such a strict framework of closely following all the necessary protective measures, the distant graduation ceremonies of Postgraduate Students, concerning both the Master's and the Doctoral Degrees, were organised in mid-December.



Section 6: Extroversion -Internationalization



EUCONEXUS

European University for Smart Urban Coastal Sustainability

EU-CONEXUS was created in the framework of the European Universities' initiative, being led by the European Commission, with the purpose to strengthen strategic partnerships, across Europe and develop international competitiveness amongst European Universities, making fruitful transnational alliances, which will become the Universities of the future, promoting European values, as well as establishing the Higher Education Area of tomorrow.

What EU-CONEXUS means: The main goal

of the EU-CONEXUS Consortium is to implement a brand-new idea, namely, that of the European University. It means:

- New inter-disciplinary and international study programs, among the members of the Consortium,
- Strengthening International Scientific Research,
- Creation of common digital libraries,
- Development of a smart University Campus,
- Strengthening of Universities' competitiveness at national and international level,
- New models of mobility,
- Specialists, able to learn and research the sustainability of urbanized coastal areas, blue growth, and all the pertinent topics,
- New international academic activities, using professional and innovative methods for the solution of global problems,
- Close cooperation between Universities, Companies, and Municipal Authority Institutions for joining forces to solve arising regional problems.

Two Minor Programmes:

Launch of the first EU-CONEXUS joint educational offer, on an Undergraduate level, offering 19 courses in 10 thematic areas, individualized to the needs and interests of the Sts:

1. "Minor in Blue Economy and Growth" and

2. "Minor in Coastal Development and Sustainable Maritime Tourism".

The completion of the Minors is not compulsory and attendance is free. The Minor Certificates are obtained, after the completion of 30 ECTS, corresponding to five (5) modules. The selective courses should be drawn by, at least two (2) scientific sectors and three (3) different Universities.

For more info, please visit the official webpage EU-CONEXUS www.eu-conexus.eu/en/ and the facebook page,

The AUA acting as Coordinator of the European Project DiTECT

(Digital TEChnologies as an enabler for a conTinuous transformation of food safety management systems)(EU-CHINA project 861915)

Action Leader Prof. George - John Nychas, [BSc, PhD & DSc] lab of Microbiology and Biotechnology of Foods, Department of Food Science & Human Nutrition,



Project's summary

DITECT will develop an integrated framework for real-time detection, assessment, and mitigation of biological, chemical and environmental contaminants, throughout the food supply chain. Bringing together research, industrial and food authority partners, representing the agro-food industry in the EU and China, **DITECT** aspires to establish the foundation for future food safety monitoring platforms, through the development of a standards-based, modular, Big Data-enabled platform, capable of accurately predicting food safety parameters of a given food product, based on data, collected in real-time, via cost-efficient sensors, at crop, grain storage, livestock and finally in the food supply, incorporating blockchain processes.

DITECT integrates multidisciplinary research teams, from fields such as microbial and spectroscopic fingerprinting technologies; emerging ICT-based food tracing systems; signal analysis and data mining. Microbial profiling will be attained, via conventional microbiological analyses in tandem with advanced molecular methods (e.g., NGS-based metagenomics), while spectroscopic profiling will be based on spectral data, generated using appropriate rapid, non-invasive methods and sensor devices.

DITECT recognizes that current foodchains are lacking a complete snapshot view of food safety at the crop/livestock and finished product levels, and thus, foresees the development of a cloud-enabled storage system, for all data corresponding to different insights of product-specific safety aspects, to be integrated into. The novel food safety services will be demonstrated in four (4) real-world Pilots, with the active engagement of 21 EU and 13 CN partners, using real datasets to validate efficiency improvements.

The carefully structured work plan embodies a "multi-actor" approach to prototype and validates a ready-for-take-up framework of significant exploitation potential for the agro-food industry."

DITECT envisages to facilitate the creation of transparent and reliable national and international food supply chains, through an integrative approach, supported by state-of-the-art authentication and traceability technologies, usable, across the entire food chain.





To accomplish this vision, **DiTECT** will focus on a predefined set of food and food chains, namely corn (both as farm feed and raw material), cattle (including meat products and milk), poultry (including poultry meat products) and fish (as food) (Fig.1).

The successful implementation of **DiTECT** is expected to significantly reduce biological and chemical hazards and environmental contaminants, through means of early detection, before they make their way to the final product.

Moreover, the collaboration between the EU-China food businesses and research partners will result in enhancing consumers' confidence in the safety of food traded between the two regions, throughout the farm-to-fork continuum.

The **DITECT** project exhibits a rather, innovative potential, lying in the design and adoption of an interdisciplinary approach, which is based on a versatile monitoring tool and is expected to be applied for the qualitative and quantitative control of critical quality and performance attributes (e.g. from the field to processing and distribution chains), thus serving as a fundamental element of practical decision-making and early warning systems.

Anyone interested in becoming aware of the progress and the developments made in the particular project can run through the following social media links:

Facebook: @DitectProject LinkedIn: @ditect-project-eu-china Twitter: @DitectProject

AUA RANKING AMONG TOP UNIVERSITIES IN THE WORLD IN 2021!

The Best Ranked Subjects of the Agricultural University of Athens in Global Ranking of Academic Subjects (2021)



Collaboration of Professor Georgios Zervakis, Head at the Laboratory of General and Agricultural Microbiology, of the Department of Crop Science, with the International and Public Relations Office

The 2021 Global Ranking of Academic Subjects (GRAS), known as Shanghai Ranking, is annually, published by the Organisation Shanghai Ranking Consultancy.

That List assesses more than 1500 Higher Education Institutions every year and publishes the 500 highest ranked Universities. Indeed, that Ranking is considered to be as one of the top and best- known Universities Ranking Lists. From 2009 onwards, ranking lists are published, every year, pertaining to the scientific fields involved in the Global Ranking of Academic Subjects.

On May 26, 2021, the Ranking List of the best Universities was released, per academic subject, in 2021. In particular, that List contains rankings of Universities in 54 academic subjects, linked to Natural Sciences, Engineering, Life Sciences, Medical Sciences, and Social Sciences, too. More than 1800 out of 4000 Universities, across 93 countries, are listed in the rankings.

Methodology, including the Criteria, the Indicators and the Scoring of the Universities involved, is analytically described in the link http://www.shanghairanking.com/methodology/gras/2021. Therefore, the Agricultural University of Athens is ranked, as follows:

Global Ranking of A Best Agricultural University (20	Global Ranking of Academic Subjects Best Agricultural University of Athens Ranked Subjects (2021)							
Subject	Rank							
Food Science and Technology	101-150							
Biotechnology	301-400							
Agricultural Sciences	401-500							

The above table was formed, based on the data extracted, from the official webpage of the Ranking List 2021: https://www.shanghairanking.com/institution/agricultural-university-of-athens

Section 7: Education

Evaluation of false seedbed technique as an important weed management practice

With the Initiative taken by Ilias Travlos, Assistant Professor of Agronomy & Weed Science, Laboratory of Agronomy, Department of Crop Science

Important parameters that influence weed seeds' germination and seedlings' emergence can also, affect the efficacy of false seedbed, as weed management practice. These parameters consist of environmental factors, such as soil temperature, soil water potential, exposure to light, fluctuating temperatures, nitrates concentration, soil pH, and the gaseous environment of the soil. Soil temperature and soil water potential can exert a great influence on composition of the weed flora of a cultivated area.

Base soil temperatures and base water potential for germination vary among different weed species and their values can possibly be used to predict which weeds will emerge in a field, as well as the timing of emergence. Predicting the main flush of weeds in the field, could maximize the efficacy of false seedbed technique, as weed management practice. Timing, depth, and type of tillage are important factors, affecting weed emergence and, subsequently, the efficacy of false seedbed. The importance of shallow tillage as a weed control method, in the false seedbed technique has been highlighted.

Further research is needed to understand and explain all the factors that can affect weed emergence, so as to maximize the effectiveness of eco-friendly weed management practices, such as false seedbed in different soils and under various climatic conditions.



FACTORS TAKEN INTO ACCOUNT

- The Impact of Soil Temperature and Water Potential on Weed Seed Germination and their Roles for Predicting Weed Emergence,
- The Possible Effects of Light, Gaseous Environment of the Soil, Soil Nitrates Content and Soil PH on Seed Germination of Various Weed Species,
 - The Importance of Tillage, as Stimulator of Weed Emergence and as Weed Control Method in False Seedbed Technique.

A great deal of significant References that were included, contributed to the work achieved.

Click here for more details: https://www.frontiersin.org/articles/10.3389/fagro.2020. 00001/full & https://link.springer.com/article/10.1007/s12600-020-00783-x

DISCOVER

Innovative dissertation topics, interesting actions in the context of the **Antarctic Research**, with particular focus on meteorites.

Topics include:

- Petrography and mineralogy of matrix minerals and melt veins of the Antarctic meteorites,

- Raman studies of the Antarctic meteorites,

- Thermal modelling of L6 ordinary Chondrite from Grosvenor Mountains (Antarctica),

- P-T relationships of calcium-aluminum inclusions from carbonaceous chondrite (Antarctica).

Leading scientist: **Dr. Ioannis Baziotis**, Assistant Professor, of the Natural Resources Management & Agricultural Engineering Department.

Read more: https://sites.google.com/view/greekpolarcommunity.



Heading Towards Electronic Evaluation!

Fully automated procedure!

Dissemination of the electronic evaluation processes of the educational work, for both the AUA Undergraduate and Postgraduate Programs.

A specially designed web platform was available for Spring Semester Evaluation Schedule 2020-21, starting from 10th of May 2021, up to the end of the semester. Entry Access to the web based platform, by means of the personal user names and passwords.

On-line web courses and teachers evaluation, ensures students anonymity, impartiality of the procedure, easy access and smooth use, as well as results credibility.

The evaluation process, has been taking place repeatedly, from 2008 onwards, including statistical analysis, development and distribution of standardized electronic questionnaires, besides the electronic processing of data and indicators, contributing to the improvement of the Programmes of Studies, inasmuch the teaching staff, expressing respect towards the students, encouraging them to contribute to such a vital quality process of the University, giving prominence to the educational tasks of the Professors, too.

"Smart Agriculture" at the disposal of Greek Farmers

Under the coordination of **Thomas Bartzanas**, Associate Professor, of the Department of the Natural Resources Management & Agricultural Engineering Department.

New technological advances enter the territory of the Greek farmers-producers, by the aid of the Agricultural University of Athens. The AUA scientists, offering all the specialized know – how and expertise, are to contribute to the increase in the production numbers, while at the same time, yielding a decrease in expenses, fertilizers, medicine, water, energy and so on. Indeed, the first region, to be benefited from "Smart Agriculture", shall be that of Central Greece.

The AUA has created the Innovation Hub in Smart Agriculture and Circular Bioeconomy, all over the building facilities, in the region of Central Greece.

In the framework of a relevant Call for Proposal in the Action: "Reinforcement of Research and Innovation Infrastructure," being funded by the Operational Programme, entitled: "Competitiveness, and Entrepreneurship Innovation", within the National Strategic Reference Framework (NSRF) 2014-2020 (EPAnEK), by the co-financing of Greece and the European Union, in particular, the European Fund of Regional Development, the Agricultural University of Athens, had submitted a pertinent proposal, which has been, actually, evaluated with excellence.

As far as the Region of Central Greece is concerned, the primary sector, including agriculture and husbandry, conduces to a great deal of the flourishing of the economic growth, across the area, as well as its being a major source of income and employment, for a great number of its population, inasmuch being a decisive factor for the maintenance of the social and financial cohesion of its citizens.

With reference to this pioneering effort made by the University, the AUA Rector, Professor Spyridon Kintzios, highlights that "the establishment of the multifunctional nature of the Innovation Hub for Agriculture, the purpose of which, is to be at the services of the whole productive community of Central Greece, with individual Units, functioning, across Aliartos, Thebes and Amfissa, proves to be a quite ambitious project.

In such a dynamic way, the AUA sets the new technical framework, for the smooth transition of Greek agriculture, to the after covid era, in fact, "a greener season to come".

In the light of such a fruitful project, the most advanced technological developments are to be implemented upon the Greek ground, for the first time in the history of Agriculture, especially, in the fields of "Intelligent Agriculture", the application of biosensors, as well as the use of traceability systems, through the composting and biostimulants processes".



As far as the fulfilment of such a target is concerned, the concept of Precision Agriculture has been developed and met with great response, on a global level, according to which, Information and Communication Technology (ICT) is used for the precise monitoring and control of all the inputs on the cultivation system, in addition to the accurate programming of outputs. That emerging field of Circular Bioeconomy refers to the sustainable and circular management of human resources, in respect of sectors, such as agroindustry, bioenergy, and waste management.

As a matter of fact, the proposed research building facility shall expand, combine and provide networking, between the fundamental research infrastructure of the Agricultural University of Athens, across the Kopaida surroundings (Aliartos) and the new building complexes of the new Departments, established in Thebes and Amfissa.

In conclusion, the main objectives of the research infrastructure planning are described, as follows:

 Providing access to Researchers and anyone interested in the agri-food sector, through a wide range of services and networks,

 Reflecting the geographical spread of infrastructure, on a regional level,

Incorporating the natural and digital content of any kind of means, to promote Smart Agriculture to the whole ecological agricultural product,

Coverage of the lack of interconnection between Research and Marketing in the Agri-food sector, of the Region of Central Greece, by putting the gradual assimilation of knowledge, related to Smart Agriculture and Circular Bioeconomy into practice,

Fostering interdisciplinary Research and Innovation in the pertinent scientific fields, since the food chain demands the combination of all the agricultural sectors, including plant production, livestock breeding, management of agricultural waste, traceability, supply chain and circular economy,

Encouragement of collaboration with the industry of agri-food products and the relevant national and european building facilities is launched.



Section 8: Digital Transformation of Public Administration



We are glad to announce to the public that, the Undergraduate Study Programme Integrated Master, of **the Department of Animal Science**, of the Agricultural University of Athens, has been granted Accreditation, by the **Hellenic Authority**, **for Higher Education (HAHE)**, achieving full compliance, as far as the Principles of the Template of the Proposal for the Academic Accreditation of Undergraduate Programmes and the Standards, inasmuch the Guidelines of the Quality Assurance System, within the European Higher Education Area, are concerned, with a four year validity, starting from 11.02.2021, up to 10.02.2025.

In fact, it constitutes the fourth (4th) Undergraduate Study Programme that has been granted Accreditation, after the Undergraduate Study Programmes of the Department of **Biotechnology**, the Department of **Natural Resources Management and Agricultural Engineering**, as well as the Department of **Crop Science**.

Last but not least, we should bear in mind that, the Agricultural University of Athens, in the framework of the accreditation process, which was performed, under the coordination and responsibility of the Hellenic Authority, for Higher Education (HAHE), the former Hellenic Quality Assurance and Accreditation Agency (HQA), has been certified accreditation, falling, within the overall scope of the Internal Quality Assurance of the educational, research and the administrative functioning of the University, as a whole, with a four year validity, from 14.11.2019, up to 13.11.2023.

In conclusion, the AUA Quality Assurance, complies with the commitment to the University's mission and vision, so as to ensure that the quality of education, research activity and training, including that of the supportive and administrative services provided, are under continuous review and that the standards set, are appropriate and being met with success.

For more info, please address to the MO.DI.P. Secretariat Office, as well as to the Secretariat Offices of the above AUA Departments.

Section 9: Publications

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Student Welfare for all!

Digitization and special conversion of books for print-disabled students by the Agricultural University of Athens, Library & Information Center.

The Library & Information Center "Alexandros Poulovasilis", of the Agricultural University of Athens, in collaboration with the Greek Ministry of Education and Religious Affairs and the European Social Fund, runs a Program (under the M.I.S. Code: 5045556), about the accessibility of our students with learning difficulties and disabilities.

Within the framework of this Program, our Library cooperates with Accessible Multi-modal Electronic Library (AMELib). Indeed, we provide for our students with special educational and different needs, the possibility to choose a book from our catalogue, converting it to an accessible file, customized for their particular educational needs. Therefore, we are proud to announce, that the library has completed the conversion of three (3) more books from the catalogue, described, as follows:

1. "History of Alcoholic Beverages" [«Potographia» in the Greek language], 1st Edition, 2007, by Argyris Tsakiris, published by "Psychalos Publications",

2. "Industrial Plants", 2nd Edition, by Despoina Papakosta-Tasopoulou, published by "Sychroni Paideia Publications" (3/2021),

3. "Meat and its Products Technology", by Spyridon B. Ramantanis", published by "Sychroni Paideia Publications" (1/2021).

These books are available, in the platform of AMELib (use by personal login account). In addition, there are more books to be converted, in due course. We would, also like to thank the publishers of those books, for their support to our project.

Find out more here: http://library.aua.gr/index.php?option=com_content&view=article&id=73&Itemid=72&Iang=en & https://www2.aua.gr/en/info/library-information-centre.



Section 10 : Features in the Greek History and Culture

Farmers and Revolution:

Their Contribution to the Establishment of the Greek State

The Greek Revolution of 1821,

marked among other things, the emergence of the Farmers in Greek History. In fact, the Peasants and the Farmers had been following the revolutionary ideas and views, inasmuch participating actively, in the Greek War of Independence, embracing the National Idea.

They had formed "the crowd", that is the largest groups of people, gathered for a common purpose, being at that time, the struggle for freedom. In the meantime, they had been aiming at the fundamental improvement of their living conditions, besides the Liberation, against any arbitrary actions of the Ottoman dominance, fighting for the tax reduction and the national land allocation, belonging to the Turkish dynasty; those stretches of land had been, already, liberated, or had been gradually, setting free.

It is noteworthy that, all the Greek national assemblies, throughout the Greek Revolution of 1821, had been recognizing the right of the farmers, over the land, leaving open the possibility of distributing the land to the landless fighters, after the Independence.

However, the total land allocation to the farmers, by the Modern Greek State, had been lagging behind, since the plots of land were nationalized, ceding only, their use to the agriculturists, in exchange for taxation. The land distribution had been acquiring greater prominence, as a major issue, whereas the Greek State had been intensely, tackling that issue, throughout the whole 19th century.

On top of that, such process, gained another scope and momentum, after the annexation of Thessaly, in 1881, as well as the doubling of the country, during the Balkan wars.



As a result of this state - of -the - art, taking into consideration the passage of a hundred of years, since the Independence, the demand that turned into a petition, for "land distribution to the growers", had been taking on explosive proportions, (Marinos Antypas, Kileler) which had been contributing to some urgent and drastic solutions, especially, after the Asia Minor Catastrophe and the massive influx of more than a million, refugees.

Therefore, the road was long, since a lot of necessary and revolutionary changes of the productive reconstruction, inasmuch the institutional changes, pertaining to the establishment of a contemporary State, according to the Western European standards, had remained incomplete. Indeed, attempts had been making, for the implementation of a great deal of the aforementioned changes, throughout the 19th century.

Needless to say, that most of the efforts had been, really prospering, during the 20th century, the interwar period, or even the post-war era, such as agricultural reform, in addition to the indigenous populations and refugees' rehabilitation, restructuring of the agricultural sector, the modernization of the banking system, with the further aim of combating usury, the mechanization of production, and so on.

The above statements had been inextricably, linked to the improvement of the living conditions, of the most numerous and historical conscious being, that ever emerged in the 19th century, through the flames of the War of Independence, namely "the crop farmers", "the cultivators" and "the stock breeders", too.

> A compelling narrative, by The Historian, Dimitris Panagiotopoulos

In addition, the previously mentioned Historian, in charge of the AUA Documentation Centre for the History of Greek Agriculture, expressed the paean of praise, for the role of the Greek Farmers and Agriculturalists in an exultant atmosphere, a joyous hymn of praise, tribute, thanksgiving, and triumph, uniting the voices of the whole world, in a great paean to liberty, within the framework of the 25th of March 2021 Commemoration.



Along these lines, the AUA Rector gave a motivating speech about the 25th of March 2021 Commemoration. Both videos, namely that of the Rector, Professor Spyridon Kintzios and the one, of the Historian, Dimitris Panagiotopoulos related to the AUA Celebration of the 25th of March 2021,

are available here: https://www2.aua.gr/en/news-events/ekdiloseis/25-march-2021-commemoration

Initiative undertaken, by the European University CONEXUS - the flags flying over the European Partners and Associates at half-mast:



Radiation of the National Anthem and Pulse, on the same wavelength, expressing the honor, through the magnificent National Celebration of the memorable 25th of March 2021 ...



E - newsletter Correspondence Column

READ US

Messages to the Mail Box

Send us your ideas and proposals for topics to be elaborated – up to 250-300 words!!! For your impressions and/or any other comments, related to the e-newsletter, Panorama, please, feel free and welcome to

express yourselves!

Indeed, we would be very happy to receive your mails, delivered to the inbox public.relations@aua.gr

Contact Person: Rania Hindiridou, International and Public Relations Office Phone Number: (+30) 210 5294841

There is also, a web service available, for the submission of proposals, by all members of the Academic Community, through the platform https://diavouleusi.aua.gr/

Entry Access to the web based platform, by means of the personal user names and passwords.



I cannot teach anybody anything

I can only make them think

Socrates

The Agricultural University of Athens, 75 Iera Odos Str, GR- 118 55, Athens, Greece

www2.aua.gr//en



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ΓΕΩΠΟΝΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ AGRICULTURAL UNIVERSITY OF ATHENS



"Save trees, Save forests, Save animals, Save earth, Save ourselves ".