



Hellenic Bioscientific Association
in the USA

Hellenic Bioscientific Association in the USA

www.hba-usa.org

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Message from Mr. Angelos Pangratis, Deputy Head of Delegation of the European Commission to the United States



Dear Col-
leagues,

It is a great pleasure to contribute to the Hellenic Bioscientific Association in the USA

website and newsletter. I appreciate being able to share with you some updates on European research, as well as on research funding and opportunities that the European Union plans for the coming years.

As many of you know, with the implementation of the Lisbon Strategy set out in 2000 and re-launched in 2005, Europe takes further important steps towards becoming a knowledge-based economy. Between the years 2007 and 2013, under the Seventh Framework Program (FP7), over 50 billion Euros will have been committed to research. (This is on top of funding at the national level, which varies from country to country.) Every year during this period, the budget committed to research will be steadily increasing, from 6 billion in 2007, to 11 billion in 2013, with an average of 7.2 billion a year. These numbers are a clear indication of how serious Europe is about promoting scientific progress and research excellence. As we face the current financial crisis, we stay committed to increasing our funding for science and technology, because we believe that those investments will bring us success over the long term. "If you think excellence is costly, try mediocrity," said Professor Fotis C. Kafatos, the President

of the European Research Council, and this is that we feel in Europe these days, when it comes to investing in research.

We also believe that Europe's strong push towards international collaboration in research and technology offers a promise of faster developments in many areas where collaboration is indispensable. Success resulting from this strategy can already be seen in numerous fields, including biological science, environment, energy, and technology. We expect more areas of successful transatlantic collaboration to emerge, and hope that you, an important part of the European scientific diaspora, will play an important role in this process. As Europeans, who live and work in the United States, you are best suited to be ambassadors of both European and American research, bringing about collaborations and scientific breakthroughs which are only possible when diverse teams with different expertise and perspectives get involved.

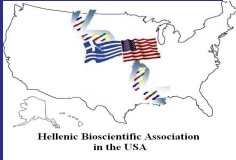
Europe offers many mechanisms to facilitate such collaborative efforts, most prominently the Cooperation projects under the FP7, for which more than 32 billion Euros have been committed over the period of seven years. The idea behind this funding program is to foster collaborative research across Europe and other partner countries through projects by translational consortia of industry and academia. Scientific partners in the United

States are welcome to participate in this program.

We also have many funding opportunities that are available for individual investigators. Among these are: the Marie Curie International Re-integration Grant, supplementing income for scientists returning to Europe after a longer stay abroad; the MC International Incoming Fellowships for investigators interested in coming to Europe to join an on-going research program; and the European Research Council's grants for young and advanced investigators, that promote breakthrough research and reward brave and innovative ideas with funding of up to 2.5 million Euros for the period of five years. I encourage you to find out more about these Seventh Research Framework Programs, and apply.

If you would like to stay informed about our funding opportunities, our research policy, and other developments in the European Research Area, I invite you to join the Network of European Researchers Abroad, [EURAXESS Links USA](http://EURAXESS.Links.USA). With a monthly electronic newsletter, funding alerts, and social events around the country, this free membership will keep you connected with Europe, whether you decide to go back to Europe or pursue your career in the United States.

With best wishes
Angelos Pangratis



*Congratulations
to all!*

Refer to the next page to read an interesting interview with Dr Papavasiliou, about the **No 1 publication** "A yeast-endonuclease-generated DNA break induces antigenic switching in *Trypanosoma brucei*"

TOP 10 PUBLICATIONS LIST

The best 10 original papers published during the quarter of Feb '09 - Apr '09 by Greek/Greek-American researchers, that have registered with the HBA-USA, have been posted on the association's website (www.hba-usa.org). This is an effort aiming to highlight the scientific achievements of the Greek researchers who are members of the Hellenic Bioscientific Association in the USA.

1. Boothroyd C, Dreesen O, Leonova T, Ly K, Figueiredo L, Cross G, **Papavasiliou F**. A yeast-endonuclease-generated DNA break induces antigenic switching in *Trypanosoma brucei*. *Nature* 2009 Apr 15. [Epub ahead of print]
2. Chambers S, Fasano C, **Papapetrou E**, Tomishima M, Sadelain M, Studer L. Highly efficient neural conversion of human ES and iPS cells by dual inhibition of SMAD signaling. *Nature Biotechnol* 2009;27:275-80
3. **Papapetrou E**, Kovalovsky D, Beloeil L, Sant'angelo D, Sadelain M. Harnessing endogenous miR-181a to segregate transgenic antigen receptor expression in developing versus post-thymic T cells in murine hematopoietic chimeras *J Clin Invest* 2009;119:157-68.
4. Moussawi K, Pacchioni A, Moran M, Olive M, Gass J, Lavin A, **Kalivas P**. N-Acetylcysteine reverses cocaine-induced metaplasticity. *Nature Neuroscience* 2009;12:182-9.
5. Means T, **Mylonakis E**, Tampakakis E, Colvin R, Seung E, et al. Evolutionarily conserved recognition and innate immunity to fungal pathogens by the scavenger receptors SCSRF1 and CD36. *J Exp Med*. 2009 206;637-53.
6. Zivanovic O, Leitao M, **Iasonos A**, Jacks L et al. Stage-specific outcomes of patients with uterine leiomyosarcoma; a comparison of the International Federation of Gynecology and Obstetrics and American Joint Committee on cancer staging systems. *J Clin Oncol*. 2009 27;2066-72.
7. Zimmer M, Gray J, Pokala N, Chang A, Karow D, Marletta M, Hudson M, Morton D, **Chronis N**, Bargmann C. Neurons detect increases and decreases in oxygen levels using distinct guanylate cyclases. *Neuron*. 2009;26:865-79.
8. Schierwater B, Eitel M, Jacob W, Osigus H, Hadrys H, Dellaporta S, **Kolokotronis S**, Desalle R. Concatenated analysis sheds light on early metazoan evolution and fuels a modern "urmetazoon" hypothesis. *PLoS Biol*. 2009;27:e20.
9. Barnes M, Krebs P, Harris N, Eidschenk C, Gonzales-Quintal R, Arnold C, Crozat K, Sovath S, Moresco E, **Theofilopoulos A**, Beutler B, Hoebe K. Commitment to the regulatory T cell lineage requires CARMA1 in the thymus but not in the periphery. *PLoS Biol*. 2009 2009;7:e51.
10. Eid R, Rao D, Zhou J, Lo S, Ranjbaran H, Gallo A, Sokol S, Pfau S, Pober J, **Tellides G**. Interleukin-17 and interferon-gamma are produced concomitantly by human coronary artery-infiltrating T cells and act synergistically on vascular smooth muscle cells. *Circulation*. 2009;119:1424:32.



Q: Dr Papavasiliou, could you please give us an introduction of your academic profile?

A: I grew up in Thessaloniki, Greece, came to the U.S. for college and stayed for graduate school and beyond. I've had my own lab at the Rockefeller since 2001.

*Q: Can you brief us on the major findings on antigenic variation in *Trypanosoma brucei* that is described in your recent paper in Nature?*

A: Our immune system hunts and kills invading parasites like *T. brucei* (which is the causative agent of African sleeping sickness) using B-lymphocytes, which detect pathogens and produce custom antibodies to attack them. B-cells determine what type of antibodies to fight an invader with based in part on the structure of the proteins on the surface of the invading cells. But the *T. brucei* parasite responsible for African sleeping sickness has evolved to hide from antibodies by constantly rearranging its surface proteins. The immune system then has to produce new antibodies to attack the parasitic cells. And by the time these new antibodies are produced, the parasite has again changed its disguise. It's a back-and-forth battle of one-upmanship that the immune system never wins. The paper deals with the mechanism by which the parasite changes its surface coat. Basically, we found that an exogenous DNA break at specific locations in the trypanosome genome could stimulate high rates of coat switching that, for all practical purposes, looked identical to those which occur during the course of an infection.

Q: Is there evidence that DNA double-stranded break is a molecular mechanism that may be used also by host immune cells?

A: Absolutely, in fact that's exactly how we started forming parallels between mammalian cells that undergo antibody diversification (class switch recombination and somatic mutation of antibody genes) and parasites that diversify their surface receptors (which we call antigenic variation). So we knew that DNA double strand breaks were intermediates of antibody diversification reactions. Of course, DNA breaks are tremendous sources of danger for the cells that carry them, as they are the inevitable precursors to chromosomal translocations (indeed, most lymphomas in humans arise as errors of antibody diversification reactions, in that B cells for example fail to properly resolve the broken DNA intermediates). It just turns out that trypanosome antigenic variation (ie coat switching) is in fact a regulated chromosomal translocation event!

*Q: Antigenic variation is a strategy for immune evasion used by a variety of pathogens. Do you think that the molecular mechanisms responsible for this variation will provide clues to the pathogenesis of parasites other than *Trypanosoma brucei*?*

A: Yes. I'm convinced that many pathogens which rely on surface coat switching (usually to evade the immune response) will vary that coat by relying on similar mechanisms. Such pathogens may be bacterial (neisseria gonorrhoea, borrelia spp) or eukaryotic (several yeasts, for example, could be doing this, though we tend to forget that yeasts are in fact pathogenic in the real world). But surface coat switching need not be a pathogenic weapon; in fact, it may also mediate self-nonself interactions such as neuronal attraction or avoidance during synapse formation; or "social" interactions at the organismal level, e.g. in the mould *Dictyostelium*.

Q: Sleeping sickness is a major health and economy issue for countries in sub-Saharan Africa. The disease, although almost disappeared by 1960, has emerged again in the area, according to WHO. Do you think that the parasite uses more sophisticated ways, than it used in the past, to evade the immune system?

A: There are very few drugs available to treat sleeping sickness. They are all highly toxic (some ridiculously so); and mostly unavailable in sub-Saharan Africa. The main mode of disease control in the past was control of the fly that carries the parasite, in this case the tse tse vector. However, political instability has led to decreased vigilance and an upswing in the tse tse population. At the same time, one can control the vector but not eliminate it, so the disease will always be with us (though hopefully to a lesser extent). In terms of limiting the disease directly, it seems to me that the smarter option is to attempt to stop the parasite from switching; the immune system is then perfectly capable of getting rid of it. So that's where we are focusing our future efforts.

Thank you

EVENT IN BOSTON

On the 12th of May the first Greek biosciences trade mission in the USA was organized in Boston, MA under the auspices of the Hellenic Ministry of Foreign Affairs and the support of the General Consulate of Greece in Boston and the Greek trade office of the General Consulate of Greece in New York. 8 biotech companies, the "Invest in Greece" governmental agency and 3 research institutes that are members of the Praxis network from Greece presented the opportunities that arise for the emerging Greek Medical Biotechnology sector to company executives.

The HBA-USA contributed in the organization of the event which had a significant turnout with more than 100 participants, including the president of the HBA-USA, Dr. Konstantinos Drosatos, the General Secretary, Mrs. Magda Vasiadi and the Treasurer, Dr. Dimitris Iliopoulos. In the greeting message that Dr Drosatos addressed during the opening of the event, he highlighted the importance of such missions that aim to expand the vital space of the biotech industry in Greece, for the advancement of this sector of the economy. Besides, he urged the organizers not to abolish the opportunity to differ from any of the previous endeavors that were ignited by either the Greek governmental or the private sector and indicated professionalism and consistency as the key features that can serve this aim.

The General Consul of Greece, Mr. Konstantinos Orphanides, as well as the Head of the Greek Trade Office of New York, Dr. Nikos Bellias, expressed their satisfaction for the great success of the event and promised to continue supporting similar events in the future.

Dr Vassilis Stamatopoulos, the representative of the Praxis Network stated: "The mission had been a challenge in many ways. Issues like the difference in business practice and the little known Greek Biotech sector had to be overcome. The Hellenic Bioscientific Association and the Hellenic Business Network have contributed significantly towards bridging the gap and making the event a success. Being consistent and persistent towards our long term objectives is now a further challenge that will build on this success and allow Greek Biotech to make a name for itself and develop through transatlantic collaborations. The follow up is a continuous and demanding process in order to transform the opportunities into long term partnerships. The journey has been quite an experience."

The HBA-USA welcomes new members

George Tegos, Massachusetts General Hospital, Harvard Medical School

Konstantinos Zarbalis, UC Davis, Dept of Pathology/Shriners Hospital

Spiros Katsifis, University of Bridgeport

Alexandros Petropoulos, John Hopkins Medical Institution



Nikoletta Charizopoulou, NIH/NIDCD

Nicholas Sperelakis, University of Cincinnati College of Medicine

Panagiotis Artemiadis, Massachusetts Institute of Technology

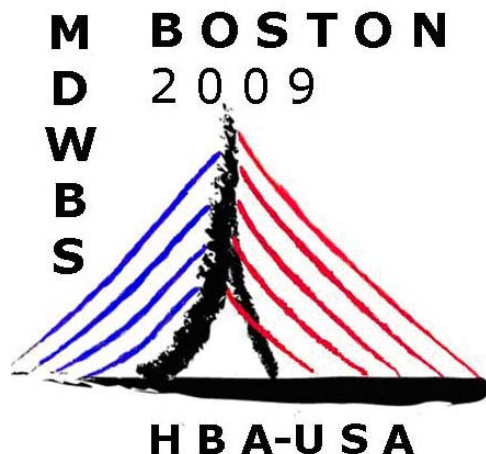
Lampros Kourtis, Stanford University

Pavlos Maragakis, D.E. Shaw Research

Spiros Getsios, Northwestern University Feinberg School of Medicine

Konstantinos Arnaoutakis, Tufts University

Sotirios Zarogiannis, University of California San Francisco

ANNOUNCEMENT**HELLENIC BIOSCIENTIFIC ASSOCIATION IN THE USA**

**Multidisciplinary Workshop in Biomedical Research: a collaborative effort
mending the gap between bench and bedside**

October 10 - 11, 2009

Boston, MA

Details to be announced in the website

SOCIAL MEETING IN BALTIMORE

With the occasion of the meeting of the International Society for Heart Research in Baltimore, MD, the president of the HBA-USA, Dr. Konstantinos Drosatos, put together a social gathering of the Greek Bioscientists who were attending the meeting with the members of the HBA-USA from Baltimore and the greater area of the state of Maryland. More than 10 people got together and discussed ideas on how to develop activities that could serve the aims of the HBA-USA, especially the functionalism of the US network and the interaction with universities and research institutes from Greece. Based on the success of this gathering, as well as previous social activities of the HBA-USA members, it was proposed to explore possibilities of organizing either similar meetings or satellite scientific symposia within the context of large meetings that take place in the USA.

[1 post-doctoral position](#) in innate immunity and fungal pathogenesis (Harvard Medical School, Boston MA)

[1 instructor position](#) in Molecular Genetics (Harokopio University, Athens Greece)

[Post-doctoral position](#) in the interrelationship between metabolism and cell cycle progression (TAMU, College Station, TX)

[Lab Research Assistant](#) position in comparative genomics (American Museum of Natural History, New York, NY)

[Post-doctoral and PhD positions](#) in Biophysics and Bioengineering (Gotingen, Germany)

[1 post-doctoral position](#) in Experimental Biophysics (Institute Jaques Monod, France)

[Research positions](#) (Democritos Research Institute, Greece)

[Board Certified or Board Eligible Pediatric Hematologist/Oncologists](#) (University of Arizona, Tucson AZ)

[1 post-doctoral & 1 PhD student position](#) in Molecular Infectiology (University of Cologne, Germany)

[1 PhD student position](#) in Molecular Immunology (University of Cologne, Germany)

[1 post-doctoral position](#) in inflammation and auto-immunity (National Cancer Institute, Bethesda MD)

[1 post-doctoral position](#) in Molecular Mechanisms of Lung Injury and Repair (Harvard Medical School, Boston MA)

[Post-doctoral position](#) in molecular basis of individual variability to pulmonary disease susceptibility (Penn State University College of Medicine, Hershey, PA)

[Physician-Scientist/Basic Scientist](#) position in Host defense, Inflammation & Lung Disease (Penn State University College of Medicine, Hershey, PA)

[1 Post-doctoral position](#) in the role of Neuropeptides in fat tissue-mediated responses (UC Los Angeles)

[Senior post-doctoral fellowships-Fondation Santé Positions](#) posted by the Research Institutes in Greece

Visit our website to find information about these positions



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P.O. Box 231134

Boston, MA 02123-9998

E-mail: administrator@hba-usa.org