



Simposio Internacional: **Investigar, educar, dialogar. Las lecciones que aprendimos de José Mariano Gago (1948-2015)**

*International Symposium: Researching, Educating, Dialoguing. The lessons that we learnt from José Mariano Gago (1948-2015)*

Madrid, 1 y 2 de junio de 2016

Madrid, June 1-2, 2016

## **ABSTRACTS**

### **FIRST SESSION**

#### **Inaugural lecture: Knowledge and the collective ambition for Europe: Learning from José Mariano Gago in policy making**

**Manuel Heitor**

Minister of Science, Technology and Higher Education of Portugal.

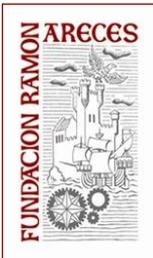
Public policy formulation in Europe, after a decade hit by recession and economic and budgetary problems, must take into account countercyclical measures, while focusing on advanced education of human resources and strengthening science and technology activities (S&T) in all branches of knowledge. The continuous qualification of the workforce at large is a persistent challenge that requires broadening the social basis for advanced education, as well as for further internationalizing knowledge and innovation networks.

Following many of the reflections continuously made by José Mariano Gago over the last three decades (e.g., Solomon and Gago, 1994, Gago 2004), this should also consider active public policies to attract and retain qualified human resources all over Europe, as well as considering public actions towards promoting new markets. The way in which the economic fabric may gain competitiveness and access to external markets may require enhancing the degree of internationalization of the scientific community and encouraging international knowledge and innovation networks.

Cross-disciplinary new frontier research should be the result of ambitious initiatives yet to be developed or stimulated from the huge potential of European organisations, including Intergovernmental European research laboratories, like CERN, EMBL, ESO, ESRF or ESA, as well by many others national and European initiatives.

We all should remember that José Mariano Gago was himself a student and, for many years, a physicist at CERN and he has acknowledged an immense debt to Intergovernmental European research laboratories, both as a scientist and as a citizen of the world. In addition, as a politician, he has continuously remembered all of us how unique and how critical are the continuous generosity and dedication of scientists and engineers for the future of science. In other words, “scientific activism” and the active engagement of scientists in policy making has become one of the greatest challenges Europe is facing to foster innovative policy frameworks.

The need for a revisited public policy framework giving priority to knowledge and technological change across the entire Europe must consider the dynamics of cumulative data on R&D expenditure and the qualification of human resources across Europe. This is because analysis shows an increasing internal divergence on knowledge investments across Europe, beyond the increasing gap between Europe as a whole and North



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America. For example, levels of accumulated investment per researcher in Europe 50% lower than in the USA by 2014 and that the average investment in R&D per citizen in Europe has decreased comparatively to that in USA. As a result, I argue that new paradigms and conditions for responsible science and innovation policy across EU require the collective action of R&D institutions and a system approach to higher education, together with new initiatives towards international cooperation across an enlarged Europe.

Why is it not trivial to understand that investing in S&T creates jobs and exports and is indispensable for long run growth in modern economies and societies? This question is increasingly relevant because, in recent years, it has been very important to place many European countries and regions on track with EU average investment levels in R&D, but this remains insufficient. In addition, the accumulation of that investment in many European regions and countries is still very low, if compared to any industrially developed region, particularly in the USA.

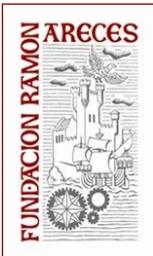
Recent data also shows that only those European nations that have increased the investment in S&T and managed, at the same time, to diversify their economic structure have fully guarantee the necessary absorptive capacity to foster the impact of S&T in economic development. The implications for Europe is notorious and call for the need to increase the budget allocated to R&D all over Europe with measures oriented towards technological diversification and intensification of the industrial base across different sectors.

In short, the increase in R&D expenditure carried out in universities and firm is not inevitable, but a choice. European citizens at large and their governments must make this choice, and it is important that they are aware that if we do not continue to grow in those areas, it will be difficult to encourage technological innovation and economic competitiveness. In order to achieve these objectives, it is paramount to mobilize and employ more PhD graduates throughout entire Europe, foster research in universities, strengthen the relationship between universities and the business sector, and guarantee scientific and technological relationships with the leading institutions worldwide. And this can be only achieved if we simultaneously stimulate demand and supply of the ability of carrying out R&D.

The current level of European economic and technological development requires a major and sustained effort of public funding of R&D across all over Europe. This will contribute not only to graduate new PhD students and foster scientific employment, but also, directly and indirectly, to foster demand. This has been the way regions and countries with high levels of R&D and a large percentage of business R&D have followed. The faster Europe at large addresses this challenge, the quicker it will be kept up with.

**Main and selected References:**

- Gago, J.M. (2004), "Europe needs more scientists", Contribution to the EC conference



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- Increasing Human Resource for Science and Technology, Brussels 2 April, 2004.
- M Heitor (2015), *Science Policy for an increasingly diverging Europe*, J. Research Policy & Evaluation 2.
  - Solomon, J. and Gago, J.M., Eds. (1994), "Science in School and the Future of Scientific Culture in Europe", European Commission, Euroscienta Conferences.

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**The Academia Europaea, challenging the future**  
**Sierd Cloetingh**

President of the Academia Europaea.

The founding of the Academia Europaea (AE) in 1988, was born out of a vision to create a pan-European Academy of individual scholars that was interdisciplinary, transborder (in fact borderless and independent of nationality, citizenship or geographical influence) and inclusive of the entire European continent. At the very first meeting, held in Cambridge in 1988, the mission was established: *"to promote a wider appreciation of the value of European scholarship and research; to make recommendations to national governments and international agencies concerning matters affecting science (in the sense of wissenschaften), scholarship and academic life in Europe; to encourage interdisciplinary and international research in all areas of learning, particularly in relation to European issues; to identify topics of trans-European importance to science and scholarship and propose appropriate action to ensure that these issues are adequately studied"*. I can look back with some pride that Jose Mariano Gago was involved in the establishing of this vision and then through his continued and active engagement with the AE, including during his periods in government. In the twenty-eight years following establishment, the AE has grown. It now has over 3500 members; a new and dynamic Young Academy of Europe has been established under the AE umbrella and the AE has forged strong working linkages with a wide range of other European associations, to become a key and independent voice in the new Science Advice Mechanism (SAM) of the European Union. As AE President, I am therefore pleased to continue the vision of the founding fathers and play a part in enabling European scholars' to provide expertise for science into policy and policy for science. I will explore some of the issues of the academic-policy interface and provide examples of some of the challenges that are current and emerging for the future of academe.

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**The scientific career (the ICREA and Serra Hunter programmes)**  
**Genoveva Martí**

Universidad de Barcelona.  
Member of the Academia Europaea.

In my presentation I will compare the hiring and promotion systems that are common in the Universities of most Anglo-Saxon countries and some European countries (such as Sweden,



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Norway, Finland or Switzerland) with the Spanish system. My purpose is to provide arguments to show that the Spanish system is riddled with fundamental problems that make the pursuit of excellence in research and teaching difficult. Nevertheless, the problems I identify are not the ones that are usually identified as culprits: reliance on civil servants and endogamy. Even though I do not wish to deny that the latter are indeed crippling Spanish Universities, I will argue that they are rather symptoms, for the root of the problems lies elsewhere. Programs such as ICREA, Ikerbasque and the Serra Húnter initiative should be models to bring about a much needed change.

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**Development of a research centre of excellence (CNIO) and its relation with the citizen**

**María A. Blasco**

Director, Centro Nacional de Investigaciones Oncológicas (CNIO).

The CNIO is a centre of excellence accredited as such by the Ministry of Economy and Competitiveness. Criteria that reflect the CNIO's excellence are the quality of the research performed as demonstrated by our high-quality and impactful scientific publications and the place of CNIO among the top cancer research centres in international rankings. According to the *SIR World 2013* report of SCImago, the CNIO occupies the second position among the top cancer research centres worldwide. With respect to EwL (Excellence with Leadership) parameter, which measures how many of these publications have CNIO's investigators as corresponding authors, the Centre holds the fourth position among cancer research centres. The main goal of the CNIO is to investigate in cancer, covering the whole spectrum of translational research from basic to clinical investigation. To achieve this, we have increased the number of clinical research units at the CNIO to facilitate collaboration with several hospitals and carry out preclinical trials. CNIO's approach to the development of new drugs, which are eventually licensed to pharmaceutical industry partners, is substantially shortening the time needed to bring a drug from the bench to the bedside. The Centre is fostering public participation in scientific cancer research through the platform "Amigos del CNIO". The Centre is involved in numerous public engagement activities to help the public participate in scientific research and understand the CNIO's science strategy and achievements. Among these initiatives, CNIO has repeatedly been part of GEPAC, an organization that includes many cancer patient associations, and has also established monthly guided tours of the research facilities to meet the scientists.



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### SECOND SESSION

#### **Promotion and development of a science of excellence policy (the CERCA Institution)**

**Andreu Mas-Colell**

Universidad Pompeu Fabra. Member of the Academia Europaea.

I'll review a number of ideas and principles that have informed the launching of new research centers in Catalonia in the last 15 years: legal standing, critical mass, private law management, a board with effective responsibility, a scientist as Director, with authority in scientific and management issues, own personnel policy, labour contracts, periodical evaluation by an external committee, multi annual programming, at a university campus, international outlook, above all: striving for excellence.

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#### **Scientific cooperation in Europe. The European Science Foundation**

**Enric Banda**

General secretary, European Science Foundation (1998-2003).

Member of the Academia Europaea.

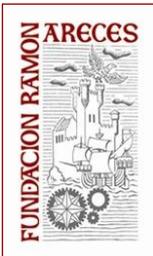
I learnt a number of things from Mariano Gago. In the learning process the activity I enjoyed most with him was "dialoguing". One of our preferred subjects for debate was scientific cooperation in Europe, with particular attention to basic research. This is one of the reasons why he visited us at the European Science Foundation (ESF), at the time I was there, as many times as we invited him to come. The ESF used to be a hub in European scientific cooperation, a useful example of bottom up procedures that very often would converge towards a multilateral cooperation of funding agencies and research performing organisations in projects defined from scratch by scientists. We have, at present, lost that platform for collaboration. We found scientific cooperation to be one of the weak points in Europe and one of the strong points, perhaps the only one, of the ESF. Intergovernmental organisations such as CERN, ESO, EMBL and many others are fortunately still there. However, I claim that a lean structure for collaboration at European level is a must that we should be worrying about.

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#### **Shaping EU cancer research policy: Towards a virtual European Cancer Institute** **Julio E. Celis**

Chair of the Science Policy Committee of the European Academy of Cancer Sciences.  
Danish Cancer Society Research Center.

Cancer is one of the major health issues affecting our societies. Today, basic research prompted by the explosion of novel high-throughput technologies available for the analysis of



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genes and their products is leading to a better understanding of the biological processes underlying disease pathogenesis; yet advances that improve lives, extend survival and enhance the quality of life of cancer patients have been harder to achieve. The latter is because the paths through which basic discoveries are translated into new and more efficient tailored treatments and diagnostics are complex, lengthy, and difficult to organize. Although Europe has well-organized Clinical and basic/preclinical cancer centres in the Member States, there are several barriers that preclude us from benefiting from the scientific expertise and resources available: these include the fragmentation and duplication of research activities and the resultant sub-optimal critical mass; weakness of the links between basic, applied and clinical research, and the lack of sustainability, critical infrastructures, and coordination between national and EU activities. In this presentation, I will describe the efforts that the oncology community and policy advisors have been doing for the last fourteen years to structure translational cancer research in Europe. In particular, I will give a historical account of the key events leading to the funding of the EurocanPlatform in FP7 - a Network of Excellence that links 23 cancer research centres in Europe - and to the recent establishment of Cancer Core Europe (CCE) by six leading European cancer centres. CCE has triggered interest in structuring other areas such as prevention, early detection and outcomes' research, and represents the first step towards the creation of a virtual European Cancer Institute. The impact of CCE on personalized/precision medicine, Open Science, and Science Diplomacy will be discussed.

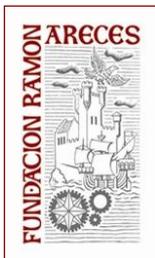
**THIRD SESSION**

**José Mariano Gago. Who he was; what he did**

**Rosalía Vargas**

President, Ciência Viva. Portugal.

I met Professor Mariano Gago for the first time at a conference in Lisbon, when called for his help with my master's dissertation on the topic of discourse in science communication. Here we have something that really interests me, he replied. 20 years later I still recall from that day his generosity, wisdom and humanity. In May 1996 we launched *Ciência Viva* (Science Alive). I immediately grasped the scale of the task, but, for a moment, I feared my ability to carry it out. Why did you choose me, Professor? Because you have the ability to learn. Because the scientific community will help you. Because parents and teachers have been expecting this for a long time. Because school kids deserve it. And I learned. I did it during formal meetings for which he gathered people from many different areas - even those unlikely for a politician's office - and also during visits to bookstores (new and old second hand ones), where our discussions crossed the path of books he admired, searched for and discovered. I quickly realised that my learning would have to go beyond the reports, studies, essays and international publications that I needed to know. And from a bookshelf "Blue August" would jump out, while Manuel Ferreira Gomes inspired a conversation about literature and politics. He gave me that book, and whenever I touch or recall it, I realize the man of letters, of sciences and of the world he was at all times.



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## **Foundation and development of the Federation of Scientific Societies of Spain (COSCE)**

**Joan J. Guinovart**

President, International Union of Biochemistry and Molecular Biology (IUBMB).

Member of the Academia Europaea.

The Spanish scientific community has long been aware of the need to improve its commitment to science and technology. Therefore, in 2004, its most representative scientific societies decided to launch The Federation of Scientific Societies of Spain (*Confederación de Sociedades Científicas de España*, COSCE). COSCE aims to do the following: contribute to scientific and technological developments in Spain; act as a qualified and unified interlocutor for scientists, communicating with civil society and representative authorities; and promote the role of science and contribute to its recognition as an essential cultural ingredient. COSCE is currently formed by more than 70 Spanish scientific societies, whose membership exceeds 40,000 scientists. The federation therefore fully represents the Spanish scientific community. COSCE also aims to provide knowledge that may be of use to economic, social, and political agents. It generates expert information that can be applied to actively promote, support, and contribute to developing initiatives aimed at strengthening the role of science as a component of economic and social progress in Spain. In this regard, COSCE has become a corporate instrument, encouraging research, improving science education, disseminating the scientific spirit, and promoting social appreciation of scientific values.

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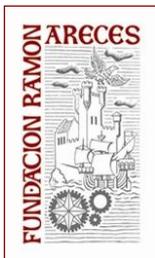
## **The European Research Council and its role to promote excellence in research at the European scenario**

**Núria Sebastián**

Vice President, European Research Council.

Member of the Academia Europaea.

The ERC is a public body for funding of scientific and technological research conducted within the European Union (EU). Established by the European Commission in 2007, the ERC is composed of an independent Scientific Council, its governing body consisting of distinguished researchers, and an Executive Agency, in charge of the implementation. It forms part of the framework programme of the union dedicated to research and innovation, Horizon 2020, preceded by the FP7. The ERC budget is over €13 billion from 2014-2020 and comes from the Horizon 2020 programme, a part of the European Union's budget. Under Horizon 2020 it is estimated that around 7,000 ERC grantees will be funded and 42,000 team members supported, including 11,000 doctoral students and almost 16,000 post-doctoral researchers. Researchers from any field can compete for the grants that support pioneering projects. The ERC competitions are open to top researchers also from



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outside the union. The average success rate is about 12%. Five ERC grantees have won Nobel Prizes. Grant applications are assessed by qualified experts. Excellence is the sole criterion for selection; there are neither thematic priorities, nor geographical quotas for funding. The aim is to recognise the best ideas, and confer status and visibility to the best research in Europe, while also attracting talent from abroad.

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### **Reasons and unreasons of research at the University** **Salvador Giner**

Universidad de Barcelona.  
Member of the Academia Europaea.

The hallowed traditional role of Universities turned them into the natural home of scientific search for objective knowledge. Yet, mass education and wrong government policies have often interfered with it. Likewise, the transfer of research to non-university labs and industrial research have undermined the Universities' central role. This has been harmful and dysfunctional. We must go back to our natural home. Science and reason will be protected if they are freed from market forces and the special interests of firms and enterprises. The University is a crucial public good, and has all the necessary tools for the successful pursuit of objective knowledge and the democratic progress of scientific research.

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