



**EUROPEAN COMMISSION**

**Máire GEOGHEGAN-QUINN**

European Commissioner for Research, Innovation and Science

**"Collaboration, competition, connection - evidence of intelligent design in European science policy?"**

Check Against Delivery  
Seul le texte prononcé fait foi  
Es gilt das gesprochene Wort

Euroscience Open Forum/Dublin  
**13 July 2012**

Ladies and gentlemen,

I am immensely proud that the Euroscience Open Forum (ESOF) is taking place in Dublin this year. And I'm proud that Ireland has gone even further by embedding it into a whole year of science through the Dublin City of Science 2012 initiative.

Ireland can hold its head high in scientific circles. For example, it was an Irish man, John Tyndall, who made a breakthrough in the understanding of light that later led to the development of fibre optics – vital to 21st century communications.

And an Irish woman, Jocelyn Bell Burnell, arguably made the greatest astronomical discovery of the twentieth century when she found pulsars.

Jocelyn is here today. Indeed, this is a unique gathering, bringing together world renowned scientists, young researchers, policy makers, Irish, European and international media, and indeed members of the general public.

It's a great opportunity for me to set out my thoughts as I reach the middle of my term as the European Commissioner for Research, Innovation and Science.

Since taking up the job, I have encountered, on an almost daily basis, fantastic science, and more often than not, the scientists who carried it out.

In my long experience of public life, this has been one of the most fascinating positions I have held.

It has been a privilege, as a non-scientist, to see, at close quarters, how science works.

I have drawn some clear conclusions:

- - The first is how important it is to respect the rational methods of science.
- - The second is the equal value of – and close connection between - curiosity-driven research and challenge-driven research, which aims to solve defined problems, whether for industry, public policy or wider society.
- - The third is a growing determination to put science at the heart of Europe, and Europe at the heart of science. Indeed, that is why I believe it so important that, in Euroscience, we have a Europe-wide, grassroots organisation which shares these goals.

I will elaborate on each of these three points.

First of all, why do I feel that it is necessary to underline the value of the scientific method?

Surely, this is to state the obvious?

Well, I'm not so sure.

The means of expression are being democratised, and while this is positive, it carries some risks.

The authority of scientists and other experts may be undermined.

I worry that we may be sliding into a situation where arbitrary opinion is given the same weight as tested and verified truth.

It's not that scientists know everything. They don't. They are always very keen to stress this.

But the scientific method forces us to think in a rigorous and disciplined way.

It is integral to European culture. It makes progress possible. It is the best means we have of establishing the truth.

It must be upheld. And politicians should rely heavily on evidence-based advice from scientists, to allow us to make informed decisions.

Of course, they cannot be the only people we listen to, but they are very important.

This brings me to the second question – to what end should we deploy the scientific method?

What kind of research should we be doing?

Of course, the link between science, innovation and economic growth is very close.

Equally, we face a series of complex, systemic problems affecting all aspects of our societies, such as climate change, energy insecurity and world hunger.

Scientific and technological breakthroughs will play an important part in tackling these issues.

Humanity's future, I believe, does depend on science.

But – and this may surprise you – I am not going to say that we should simply be harnessing science to solve these challenges or produce economic growth.

I believe that, beyond any practical benefits it brings, intellectual inquiry is a worthwhile pursuit in itself.

Science satisfies our drive to understand the world around us. To uncover the truth. It reveals to us the most profound ideas.

The story of life on earth. How we became human. The complex and surprising relationships between different species which make life possible. How our genes make each of us unique. Our place in the universe. The expanding universe.

Indeed, we live in an age of discovery. Just last week, scientists at CERN announced that they had found a new particle consistent with the Higgs Boson. They are tantalisingly close to confirming the Higgs' existence.

I was on the edge of my seat waiting for the announcement. Everyone was. Because it writes the next chapter in the book. It opens up a whole array of new questions and new frontiers of knowledge.

Indeed, what I found interesting was the level of excitement the announcement generated, across all ages, all countries, all cultures.

It showed that the desire to understand the universe really is universal. Even children often ask cosmological questions!

So, for me, it is about achieving a balance between challenge-driven and curiosity-driven research.

Indeed, even if we were only interested in achieving our policy goals, which is not the case, we could not do that simply by funding challenge-driven research.

Because we all know that curiosity-driven research can provide breakthroughs that cannot be predicted beforehand.

Silicon chips, for example, resulted from the fundamental breakthroughs in quantum mechanics. But I doubt that Niels Bohr had any inkling that his ideas would eventually lead to the development of whole new industries, such as consumer electronics and telecommunications.

And, of course, Tim Berners Lee developed the World Wide Web as an information management system for CERN scientists. A couple of decades later, it has transformed the way we live, how we work and how we socialise.

I would also point out that challenge-driven research can lead to fundamental discoveries too. For example, trying to improve the design of aircraft wings has led to breakthroughs in the science of fluid mechanics.

So, it's important to strengthen both curiosity and challenge-driven research. And that is what we intend to do.

Let me turn now to my third point. Earlier, I said that we need to put science at the heart of Europe, and Europe at the heart of science.

What do I mean by that, and how do I intend to achieve it?

Well, first and foremost, at a time when budgets are very tight everywhere, the Commission is proposing more money for science. We have proposed an increase from 55 billion euro in the current seven-year budget, to 80 billion euro in the next one, to fund our new research and innovation programme, Horizon 2020.

But, as you would expect in these difficult times, negotiations on the next EU budget will be very tough. Not everyone is convinced that the 80 billion euro for Horizon 2020 is justified, far from it. And national budgets for science are also now at risk. It really is a battle to maintain the central place of science in European Society. To put science at the heart of Europe. So, I'm issuing a call to arms. Please get out there and make the case. Please make your voices heard!

How do we propose to spend the money, if we manage to secure it?

The first pillar of Horizon 2020 is the promotion of excellent, curiosity-driven research. We are proposing to double the funding for the incredibly successful European Research Council (ERC).

I want to pay tribute to the ERC which, in its first five years, has already helped more than 2,500 top researchers to follow their instincts.

It's hard to believe that an organisation as young as this has already established such an enviable reputation worldwide.

It's a truly impressive achievement.

The second part of the programme will drive the development of new, sustainable production processes and support young, innovative enterprises.

In the third part of the programme, funding will be challenge-based, not thematic. This will allow us to bring together research and knowledge across different fields, technologies and disciplines, including the social sciences and humanities, to really make a dent on these big problems we face.

I admit that this will be a programming challenge; it won't be business as usual; but we are determined to do it.

Horizon 2020 will be complemented by the new framework for the European Research Area (ERA), a single market for ideas in Europe.

The Commission will adopt it in just a few days time. I can't reveal everything now, but its aims can be summed up in one word: excellence.

ERA will generate excellence by opening up national funding to pan-European competition, and at the same time, increasing cross-border co-operation.

That's what excellent scientists want – to compete and cooperate.

To facilitate this, we will focus on a small number of very concrete 'big ticket' items for ERA, such as making it easier to strategically align funding from different Member States, improving researchers' careers and mobility and giving them access to world-class scientific infrastructures.

Another important strand of ERA will be open access, which we have made the default setting in Horizon 2020. We believe that the results of publicly funded research should be freely available.

ERA will be based on a smarter, sharper, much more focused partnership, involving primarily Member States, but also research stakeholders.

That's important because, in some areas, these stakeholders enjoy a degree of autonomy, and so are well placed to achieve some of the changes we want.

I need all the key stakeholders - universities, research and technology organisations, and research funding organisations – to line up behind ERA.

ERA is synonymous with excellence. It will put Europe at the heart of science. We need to build it together.

Ladies and gentlemen,

Before I end, there are three questions that I would like to put to the other members of the panel:

First competition and collaboration. I referred to this earlier. Both are necessary for scientific progress. Physicists and engineers from 85 countries collaborated at CERN, but there was competition between the two experiments – Atlas and CMS – and within them!

We need to understand how countries decide when to co-operate and when to compete.

There are technical barriers to co-operation; ERA aims to eliminate these.

But, in the end, it is about political will and mutual trust.

How do you think we can promote these, Torsten?

And Subra, where should we be co-operating more at international level?

The second question relates to co-operation between industry and academia. The Commission is strengthening this through the European Institute of Innovation and Technology, the EIT. I am keen to do more on this in the second half of my mandate; I'd welcome your thoughts on it, John.

But, as we strengthen these links, can conflicts of interest arise? Do we need to do more to protect academic integrity?

Is there a danger that these conflicts of interest could undermine public trust in science and scientists?

I've already said that it is the scientific method which gives scientists their credibility. But we need to be certain that they are rigorously applying it, that they are almost disinterested in the results of their research, their only interest being the discovery of the truth.

This brings me to my final question.

As I said earlier, science drives progress. This idea dates from the Enlightenment. But human history has also shown us that technology can be used for bad, as well as good, purposes.

And today, we are seeing the emergence of technologies, such as synthetic biology, which arouse public concerns.

These concerns cannot simply be dismissed.

For me, the key issue is risk literacy. People need to be able to assess both the potential benefits and the potential risks of emerging technologies, and then on this basis, to come to their own, informed view.

And, of course, scientists need to get better at communicating their results to their fellow citizens. So, how can we achieve this?

Ladies and gentlemen,

Last week's announcement from CERN was a magnificent moment. Amid the economic difficulties, it gave us inspiration. It made me proud to be the Commissioner whose job it is to promote science.

Our task now is to persuade everyone else of the centrality of science.

Let's put science back where it belongs - at the heart of Europe.

Let's put Europe where it belongs - at the heart of world science.

Thank you.