

MINISTRY OF NATIONAL RESOURCES

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BALINT MAGYAR'S SPEACH ON THE CLOSING SEANCE OF THE WORLD SCIENCE FORUM 12TH OF NOVEMBER 2005

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Science is the way to keep the creativity of our students alive

Dear Distinguished Guests!

Ladies and Gentleman!

On behalf of the Hungarian government it is my great pleasure to welcome the participants of the World Science Forum. I feel honored to see all the distinguished scientists, political leaders and other members of the social elite, who sacrificed their time and came to discuss our common problems. A great expertise gathered here together for these few days. However, we are not here to celebrate ourselves but to ask disturbing, sometimes annoying questions and trying to find answers to them. Do we have enough women scientists among us? Do we have enough young scientists among us? Do we start early enough the recruitment of our best students to science? How can we be better in all of this? In my speech I will summarize some of our ideas in Hungary, which try to answer these questions.

Scientists should not be a special class of the society any longer, who live a secretive life and speak a coded language. We need science to survive each of the seconds in our life. Without understanding science it is impossible to use it for all the large variety of situations it became needed. The number of potential "science-users" tremendously expanded in the last few years. Thus, proper science communication is a key point for the survival of a modern society. But science communication is more than that. It is a hallmark of scientific excellence. The scientific results, which can not be formulated on a language that the mother of the scientist could understand them, are either not important enough to be formulated at all, or their essence was not understood enough by the scientist. However, science communication is not only a hallmark of the scientific excellence today. It is also a necessity for the scientific excellence of the future. Without making science understandable and approachable we will loose our hopes to recruit the next generation of scientists. We may still insist to recruit them and we may succeed in that. But without a proper science communication the result will be very far from the excellence we need.

"The world can not be predicted - it can just be invented" - as Dénes Gábor, the Hungarian-born Nobel Laureate said. Life has been accelerated a bit, since these words were said for the first time. Now we have to re-invent the world, and re-define the world almost continuously. The Hungarian education was and is very good to give a solid and high level lexical knowledge to our students. However, in a world, where knowledge is re-invented and re-defined continuously this is not enough. We need to prepare our students for comparisons and proper judgments. "Does this Internet-page seem reliable? Is it in accordance with my previous knowledge or should I double check its content? Do the dozen different definitions what I read on the same subject converge, or all of them were just pieces of misleading rubbish?" These are the questions to which our students seek the answer. The recent reform of our final examination system in the Hungarian high schools forces the schools to help our students to form their independent judgment. Self-controlled, independent opinion is crucial, if the students do not want to sink hopelessly in the ocean of unscientific, useless, fake information.

However, we need more than independent judgment. If we have only judgment, we will be parasites of the existing knowledge and after a short while we will run out of the solutions to judge. We have to help our students to preserve their creativity and curiosity. Or in other words, we have to prevent our education system from committing a systematic crime: killing the creativity and curiosity of our students.

Science education, scientific research practice is a way to keep the creativity of our students alive. As a minister of education I am lucky, since my friend, Professor Peter Csermely launched a civil movement in Hungary ten years ago, which gives research opportunities to more than 5,000 motivated high school students by now. The initiative made a Network of Youth Excellence, which has similar initiatives as members from 33 countries, and which is sponsored by the UNESCO. Professor Csermely is not here now. He is in Finland, where the Finnish National Board of Education now considers starting a similar movement. They have ongoing adaptations of this project in the Czech Republic, Slovakia and Romania. To help this civil initiative this April the Hungarian government launched a

program, called "Way to the Science" to promote research in hundreds of high schools in Hungary. We hope that this exceptionally successful movement will be followed by many others all around the world.

It is not enough, if we only recruit students to science, we need to help them in all the key points of their career. We will introduce a pre-doctoral loan option to our PhD students to extend the funding of their studies. This will be an unusual loan, since we will not ask the money back, if the student defends her thesis in two years. We have quite a number of state-sponsored PhD options by now. As a next step we will increase the number of postdoctoral positions. More importantly, from next year we will open a very flexible option to receive funding to start spin-off firms even by undergraduate students. The value of a good idea is independent from the age. As an example, the 19 years old Dániel Rátai, who won 6 prizes at the Intel contest earlier this year, already started his firm with state support.

Ladies and Gentleman,

it is not only a matter of politeness to put "Ladies" first, when I greet the participants of this Forum. It is extremely important that women got their due share of science, of scientific elite and of scientific leadership. Working groups on women in science are often abbreviated "WISE". This is a wise abbreviation. We all need the wisdom of women in scientific research. Here in Hungary we seem not to understand this lesson. In my country the ratio of women among university students is 54%, but among PhD students it is already lowered to 43%. The ratio of women among assistant professors shrinks further to 35% and only an astonishing 6.5% of the professors are women. This trend, these numbers are not acceptable. As a sociologist I can not see any "social law" behind this. Steps of hidden discrimination and insufficient help at the crucial points of the career are the most important reasons, which widen the gap at every single step. We decided to make a concentrated effort to change this.

- We will introduce specific grant options, which will add an extra source to existing scientific grants to help the housekeeping and administrative duties of women scientists.
- We will give flexible deadlines in scientific grants, and key points of career development for women.
- We will introduce flexible working hours and other measures of a family-friendly working place.
- We will require detailed plans from all the involved institutions from the lowest one to the state level to increase the number of women both in the scientists and in all committees and posts. These plans will be a mandatory part of all major grant applications in Hungary.

However, we need more than this.

- Gender studies will be introduced to the general curriculum in high schools and universities especially in teachers' education.
- We will make special attention to stereotypes invoking an unequal role of women in the accreditation of our textbooks.
- We will launch a campaign to show role models of successful women scientists and innovators in the media.
- Last, but not least: we will help to surface all the problems we are not aware of at the moment. We will organize forums, contact points and institutional forms to help women scientists both at the local and national level.

Ladies (and Gentleman),

we, Hungarians used to be proud of the 13 Nobel Laureates we have in science. However, it is only seldom mentioned that only one of them, Albert Szent-Györgyi received the Nobel Prize while being still in Hungary. We were exceptionally successful to deter or explicitly expel all the rest of them before this prestigious award.

Talented people need a special care. Many times they just need space to grow. The youngest generation of scientists, women scientists seek their role in the scientific life as we sit here. We have to open new ways for them: not to escape, but to grow. However, we should not let them alone, but need to make a network of the bests. This is how they can stimulate each other, and how they can grow even better. Women are especially good in building up, in nurturing and stabilizing social networks. Let me ask the other men in this room: please learn this lesson from women scientists. Without these networks we can not continuously re-build the scientific life, and can not give enough space for the youngest and the best. Our common responsibility for the future and for the best is the major message I wanted to share with you in these few minutes today.

Many thanks for your attention.

The minister's speech on video ([WMV, 69,1 MB](#))