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Plenary opening

STEM High-Level Event 2019 - Fostering Industry Cooperation within STEM School Education Strategies
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Ladies and gentlemen,

Let me open with a personal anecdote: I was born in Geneva, the son of CERN high energy physicist. As a result, growing up, I had math and physics—and even some chemistry—for breakfast, lunch, and dinner—even on hikes high up in the Alpine tundra. Moreover, I observed my father and noticed that he could do all his calculations in his head. So, early in my teens, I forced myself to do the same and realized that it was not as difficult as it seemed—it took discipline, commitment, and practice. I know my luck. I know it very well in fact—if only from teaching remedial math and physics to my nephews and nieces. Yes. They did well in their exams. They succeeded, dispelling their initial terror of these topics, while maintaining some of their original dislike. Few children enjoy the early coaching that I recieved, a coaching that carries with it affective and cognitive comfort, self-confidence, and a sense of agency. Hence, I see your role as essential and your gift of comfort, self-confidence, and agency in STEM to children, as invaluable. I will not even mention the usefulness of your work and how it defines the future of a society.

So, I am delighted to be here today to represent the European Commission at the **STEM High-Level Event 2019 - Fostering Industry Cooperation within STEM School Education Strategies**. I am particularly pleased to

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present –among others- Scientix, as it is a very good example of the activities that the European Union is supporting in the field of Science Education.

As you all know Scientix allows every science teacher and student in Europe to benefit from the excellent teaching materials developed at European and national level. It contributes to raising interest of young people in science, engaging them in science and inspiring them to take up scientific careers. It is a place for everybody interested in science education to exchange news and views.

It is seven (7) years since the first Scientix conference took place and since then Scientix has built up an impressive portfolio of statistics:

- Almost five thousand (5,000) followers on twitter;
- Repository for five hundred (500) Science education projects;
- Ten thousand (10,000) registered users;
- Over five hundred (500) Scientix ambassadors;
- Available in eight (8) languages;
- It gets over fourteen thousand (14,000) visits a month and as you know it supports networking events, hands-on workshops and many other courses.

Scientix is a big success and I take the opportunity here to congratulate the STEM Alliance for their excellent work and their major role in supporting a better and brighter education in Europe.

Of course, the way forward is paved with many challenges from equality to equity, from fostering young talents to helping young potentials to be unravelled.

This is why we, the Union, are fully committed to support Science Education at EU level. In a sentence: making our future brighter together.

Tomorrow starts now. Hence, the Union has set ambitious goals to promote smart sustainable and inclusive growth to find pathways to create new jobs and to offer a sense of direction to our European citizens.

First, it means fighting for gender equality beginning in schools, which have lasting consequences through life with several multiplier effects such as life-long-learning self-initiatives, supported by appropriate social networks built over time.

On that regard, key findings of the European Commission's She Figures 2018 report, which monitors the level of progress made towards gender equality in research and innovation in the European Union, show that Gender balance in research is improving.

Second, it also means finding better ways of teaching and improving education. Indeed, Creative and innovative, formal and informal teaching and learning, help young people make the best use of their capacities and capabilities

Fostering sciences with and for society through our citizens, we aim at equipping them with the skills they need for active participation in the processes that will shape our futures.

The European Commission published a report recently on "Science Education for Responsible Citizenship" which makes a substantive contribution to the policy debate within Europe on how best to equip students with those skills.

Recommendations from this report have formed the basis of our recent open calls on science education. In the recent call we had on Open Schooling, we encourage schools to get involved with local communities and target the creation of new partnerships in local communities to foster improved science education for all students. Those of you familiar with the OECD's work in this area will know that our initiative on Open Schooling complements very nicely the OECD's framework for innovative learning environments.

This is crucial as the world becomes more interconnected and indeed competitive and as technological know-how expands more complex societal challenges arise, in addition to the well-known and often quoted Climate Change and food and energy security.

A good example of a new complex societal challenge is the Cambridge Analytica scandal of recent weeks. It is shocking to think that elections and national referenda could be influenced by data manipulation in technology that we all use.

This is one of the many reasons as to why science in education in Horizon 2020 has been financing a range of initiatives to pursue greater participation of young people in science and encourage long-term scientific careers at all stage of education.

On that aspect, our flagship event is undoubtedly the European Union Contest for Young Scientists, better known as EUCYS

The contest is all about youth, scientific excellence and innovative ideas. It is about encouraging talents and recognising bright ideas in a wide range of areas - from cloud computing to mathematics; from cell biology to nanotechnology.

More than three thousand contestants have taken part since the first contest took place 30 years ago.

So far, we have highlighted the need to find new ways and the crucial role of education for our future. One major point still need to be raised in that regard:

Today Europe still faces a shortfall in science knowledgeable people at all levels of society.

There is a lack of interest by many students in studying STEM subjects and thus not engaging in science and not going into careers in STEM. This situation could have serious consequences for the realisation of achieving Europe's goals on jobs and growth. We know Europe needs to radically increase its innovation capacity. Without the appropriate skills, our ambitions may not be realised.

Another extremely motivating factor to promote Science education in Europe can be found in the OECD's 2015 PISA study. As I am sure you all know, in the OECD's International Student Assessment, which assesses to which extent fifteen year olds have acquired key knowledge and skills that are essential for full participation, Europe fell short. So, where is Europe? Estonia and Finland are the highest performing EU countries in science.

As you know, TIMSS has been measuring trends in maths and science achievement since 1995 and they too are pessimistic when considering Europe. It seems that Singapore, Japan and Korea always head these tables in recent years.

At the core of this particular challenge, lies a particular Gordian knot: how to teach mathematic and rise student performance in this area? Ingenious has provided the beginning of a swift answer to this dilemma that is subject to many interesting studies across various fields of research.

To this day, the STEM Alliance builds on the success of the inGenious initiative (2011-2014) to increase the links between STEM education and careers, by involving schools throughout Europe. This is also the occasion to acknowledge the work done.

These examples are just a few select examples on why it is so important to support Science Education in Europe as we do at the EU-level.

We want Europe at the forefront of scientific and technological advancement and young European scientists are keys to realising this goal.

In order to reach those far-reaching goals, Science in education in Horizon 2020 has been financing a range of initiatives to pursue greater participation of young people in science and encourage long-term scientific careers.

Our projects include formal settings of science education and non-formal, out-of-school teaching settings in a holistic approach at all level of education, and even after by encouraging young people when pursuing careers in STEM subjects.

Finally, I fully acknowledge that we need to continue to invest in science education and modernise the science education systems at all levels, promoting excellence in education and skills development.

By fostering the interest of our young people in science and innovation, by showing them how important science is for society and how rewarding careers in science can be for them, and by nurturing highly skilled science teachers, we will help create the scientists and researchers, and the much-needed innovators of tomorrow.

They will be science-active and responsible citizen scientists in a successful Innovative Union!

Thank you for your attention and enjoy the conference.