Regional Meeting on Education and Outreach
Buenos Aires, Monday 7 April 2013

Ahmet Üzümcü, Director-General OPCW

Distinguished guests,
Ladies and gentlemen,

It is a great pleasure for me to address you here today on a topic that I take close personal interest in.

Education and outreach are opening a new front in our efforts to guard against chemical weapons. This meeting – the first of its kind – seeks to point ways forward for broadening this front.

A front that must bring together a well-integrated community of scientists and researchers working proactively for chemistry that benefits – and never harms – humankind.

I take this opportunity to warmly thank Argentina for organizing this important event.

I also wish to acknowledge the leading role Argentina has played through its national project on education and outreach, involving national governments, regional organizations, academics and industry representatives.

The report you submitted to the last session of our Conference of States Parties last December clearly shows the breadth and quality of these efforts.

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This event could not be timelier. We are meeting almost one year to the day since States Parties, at the Third Review Conference in The Hague, for the first time called for action on education and outreach.

In its final report, the Third Review Conference "acknowledged the role of education, outreach and awareness-raising as a relevant activity for the national implementation of the Convention." It means alerting academia and relevant scientific communities to the provisions of the Convention, as well as domestic laws and regulations relevant to its implementation.

In support of the Review Conference recommendation, I have called for special efforts to be made in education and outreach this year.

There are many reasons why, at this particular time, we need to focus on this area of activity, as recognized by States Parties.

Foremost among these is the challenge posed by dramatic advances in science and technology, as well as our capacity to keep abreast of them. This has been further complicated by increasing globalization of the chemical industry, new and faster means of communication, and almost limitless access to information.

At the same time, all this is occurring in a rapidly changing strategic environment.

While we are reaping the security benefits associated with the removal of chemical weapons from states' arsenals, we face a new, far less predictable threat from terrorist groups. Several such groups have made no secret of their ambitions not only to acquire, but also to use chemical and other weapons of mass destruction and terror.

Against this backdrop, the confirmed use of chemical weapons in Syria last year has reminded us of the horrific impact of these weapons, and why we should not slacken our efforts to consign them to the past forever.

It is my strong view that how we respond to these challenges must look beyond present and emerging dangers to lay solid foundations for a common approach to how we use chemistry across the globe into the future.

Many in the policy-making community would, for instance, argue that we must redouble our efforts to control new dual-use substances and technologies.

Voices in the scientific community, however, argue that advances in chemistry, especially in areas where they converge with and enable other sciences such as biology, must be nurtured for the benefit of humankind.

To narrow the distance between these opposing tracks and to run them into a single gauge, scientists and policy-makers must work together better.

We must explore new avenues of cooperation and dialogue to deny neither threat nor opportunity in the circumstances in which science will make advances over coming decades.

The American plant pathologist, Elvin Stakman, put it very succinctly: "Science cannot stop while ethics catches up – and nobody should expect scientists to do all the thinking for the country."

The best way to address the duality of chemistry is through dialogue, engagement and education about such issues with the scientific community. Without this, we cannot hope to be successful in ensuring that dual-use knowledge is only ever put into practice in a single use – to benefit humankind.

As the participants in the World Science Forum in Rio de Janeiro in November 2013 declared, "Scientists are individually and collectively ethically responsible for the advancement of Science and the use of its benefits for society. Developments in many research fields … have considerable moral and ethical implications that require an urgent and global dialogue between scientists and the wider public."

Over recent years, the OPCW and States Parties have devoted considerable effort to enhancing our partnerships with the scientific community and chemical industry as a means of inculcating habits of dialogue.

A key vehicle for informing and building up these partnerships has been the OPCW's Scientific Advisory Board.

The Scientific Advisory Board is, as most of you are aware, a body of 25 eminent independent experts who advise me on issues relating to science and technology. In this capacity, the Board has played a crucial role both as an early-warning system on science of interest to the goals of the Chemical Weapons Convention, as well as a sounding board on what can be done to address emerging issues.

The Scientific Advisory Board is currently chaired by Professor Alejandra Suarez from Argentina's University of Rosario. Unfortunately, while we are here, Professor Suarez is actually in The Hague for a Board meeting. But she is well represented here today by colleagues from Rosario.

I would like to take this opportunity to express my appreciation to Professor Suarez for the sound advice and wise guidance she consistently offers, and for her strong support for our efforts in the area of education and outreach. This support was amply demonstrated last year when she and her colleagues hosted a meeting on "Chemistry for Peace," bringing together academics from across Argentina with international experts from the OPCW and the Scientific Advisory Board.

Working with Board experts and others, we have begun a concerted campaign to build links with other relevant international entities. We have strengthened our existing links with the International Union of Pure and

Applied Chemistry, we have initiated contacts with UNESCO, and we will soon broaden our outreach to include the International Council for Science and regional networks of academies of science.

The question now is how best to use these rapidly expanding networks.

I mentioned just now an early warning system. And we will of course continue to encourage proactive consideration of new applications and technologies that could have implications for implementation of the Chemical Weapons Convention.

But we also need to be realistic about the extent of our non-proliferation reach alongside our disarmament gains, especially if we consider the sheer enormity of what might need to be taken into account.

Millions of new chemical substances have, for instance, been discovered since the CWC Schedules were negotiated twenty years ago, and this number continues to grow by about 15,000 a day.

Clearly, we need to be smarter about how we exercise non-proliferation controls in this rapidly evolving environment. We simply cannot hope to police every new discovery through an ever-expanding suite of control measures – nor should we aim to do so.

Indeed, advances in science and technology overwhelmingly benefit humanity. They bring us new tools to make our lives easier, potential solutions to issues like climate change and, in our own specialised area, new

and more effective ways of detecting chemical weapons – as was demonstrated recently in the UN investigation in Syria.

We need, therefore, to invest in the future by targeting current and future generations of scientists and researchers in a bottoms-up approach to broadening our community of stakeholders.

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The importance of reaching out to scientists at the most formative stages of their careers in academia and industry was recognized by our States Parties at the Third Review Conference. They decided, "as part of efforts to promote the ethical norms of the Convention, to encourage and promote efforts by the appropriate national and international professional bodies to inculcate awareness amongst scientists and engineers at an early stage in their training that the knowledge and technologies used for beneficial purposes should only be used for purposes not prohibited under this Convention."

We can, and should, reach even further by spreading our message to high schools. The image of the exploding laboratory should not, even as a joke, be seen as a rite of passage for the young chemistry student.

At the most basic level, what we are talking about is instilling habits of responsible science. This is more than creating a sense of ethical responsibility among students, but also creating an awareness of the broader context of scientific research and potential for its misuse.

This is a message that is very persuasively conveyed in the first of a series of films produced by the OPCW under the Fires Project – a project that is intended to raise awareness, among a broad public, of chemical weapons and their impact.

Some of you may already be aware of this remarkable film and its subject, Chrétien Schouteten, a retired high school chemistry teacher and author. In the film, he and his students recount his efforts to teach them about the potential for the misuse of chemistry by giving them to pause to consider how they would respond when confronted with dilemmas about how to apply their knowledge.

Mr Schouteten draws on the example of Fritz Haber, whose Nobel Prize-winning discovery of a process for synthesising ammonia was overshadowed by his efforts to develop and deploy chemical weapons during the First World War. A memorable sequence of this short film captures a reading in Germany of Schouteten's play about Haber and the moral quandary that bedeviled his work.

For those who have not seen this film, you will have opportunity to do so here. Its message has an immediacy that is very relevant to our education and outreach objectives and is therefore a key tool for us all to draw on in engaging students.

To advance our thinking about how we can extend our reach to deliver these sorts of messages on a sustainable basis, I requested the Scientific Advisory

Board to establish a Temporary Working Group on Education and Outreach in 2011. This group is ably chaired by Professor Benachour and comprises 13 international experts in chemistry education and implementation of the CWC.

The Temporary Working Group has now convened for three meetings, each of which has adopted useful recommendations that have combined effectively with some of the initiatives the Technical Secretariat has been pursuing. The Group has also interacted closely with National Authorities at the past two annual meetings of National Authorities in The Hague.

In addition to providing advice and strategic guidance to me on education and outreach, individual Group members have contributed to the production of education materials on multiple uses of chemistry and role of the CWC.

The Temporary Working Group is now considering the development of a "travelling" exhibition on the OPCW and is exploring how the OPCW could build links with science centres and museums around the world. Indeed, the science centre close to the OPCW in The Hague already has a temporary exhibition on the OPCW, and the Nobel Peace Center in Oslo is running an exhibition on the OPCW until November 2014.

All this contributes to what must be a broad-ranging effort. This includes my own representations and advocacy on this issue, both in my bilateral meetings with government officials and senior scientists, as well as in major speeches I have delivered around the world – including the 2013 Nobel Peace Prize lecture on behalf of the OPCW.

We need to spread the fires, as Chrétien Schouteten puts it – not to destroy, but to enlighten.

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The best guarantee of a multiplier effect for our outreach endeavours is the production of teaching materials and modules – an area in which the OPCW is investing new effort, as per the exhortation of the Third Review Conference that we "assist States Parties, upon request, in implementing education and outreach activities, including by disseminating materials, conducting workshops and regional meetings."

Samples of such materials will be presented to you during the course of this meeting – for example, the "Multiple Uses of Chemistry" website, which was developed jointly with IUPAC and the "Chemistry in Conflict" workbook produced by chemistry teachers at high schools in The Hague.

Such materials, produced by chemistry educators, are made freely available as resources for use by teachers at high school and university level. One important function of this meeting is to inform those of you who work for National Authorities of the availability of these materials and to encourage you to distribute them widely to your domestic stakeholders.

We do not expect National Authorities to become teachers themselves, but we would encourage them to inform their counterparts in ministries of

education, science and technology and so on that these materials are freely available for use in schools and universities.

To this end, we now need to share our networks for distributing these materials in a more strategic way. This meeting is a valuable opportunity to this end. The regional dimension is particularly important, given that it allows us to draw on synergies in education systems, common language, cultural familiarity, in addition to building upon existing academic exchanges.

The OPCW Technical Secretariat is likewise seized of opportunities for network-building. In cooperation with the Vienna Center for Disarmament and Non-Proliferation, we co-organised an international workshop on disarmament and on-proliferation education and capacity development in November 2013. This workshop was the first of its kind to bring together experts and practitioners from international organizations, scientific associations, academia and civil society, working across all categories of weapons of mass destruction.

One of the workshop's recommendations was to create a network for communication and coordination of future efforts as well as sharing effective practices and lessons learned. I think the OPCW can play a leading role to that effect.

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In conclusion, we have an extraordinary opportunity at present to advance education and outreach.

Between the Syria mission, Nobel Prize and the upcoming centennial of first mass-scale use of chemical weapons, the work of chemical disarmament will remain very much in the limelight. And we must ensure that public interest is well informed and engaged in a way that supports our goals in ensuring chemical weapons are never again used or produced.

To do this well, one thing should be very clear in our messaging. Knowledge can no longer be jealously guarded or developed without reference to a broader context.

What we need are not only more ethical scientists, but also more capable and well-rounded ones.

Scientists who have a world view and can contextualize the broader purpose and applications of their research.

Scientists who can also make their advice more widely and better understood by non-scientists and policy-makers.

It is up to us to work towards this end by engaging our existing community of stakeholders – and broadening it through new approaches to education and outreach.

I take this opportunity to thank Argentina, once again, for this important initiative

It is my firm hope that this meeting will spawn fresh thinking and new ideas as to how we advance education and outreach at the national and regional levels, as well as across the globe.

As a matter of course, the OPCW will now include an education and awareness-raising theme in future regional meetings of National Authorities – next time around in June in Nairobi.

I also take this opportunity to announce that the OPCW will host a conference later this year at OPCW Headquarters focused on education and outreach. I hope that we will all be able to report substantial progress in this important area at that event.

Thank you for your attention.

Verification mechanisms either national or those mechanically provided by international organisations like OPCW will not on their own be adequate to prevent misuse of chemistry, of proliferation of weapons. Therefore external inputs that we collectively raise awareness on potential security risks in handling chemistry.