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ADVANCING WORLDWIDE CHEMISTRY

*International Union of  
Pure and Applied Chemistry*

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## STATEMENT

**BY PROF ALASTAIR W M HAY AND PROF GRAHAM S PEARSON**

**ON BEHALF OF THE**

**INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY**

**TO**

**THE MEETING OF EXPERTS IN AUGUST 2008 OF THE PARTIES TO THE**

**CONVENTION ON THE PROHIBITION OF THE DEVELOPMENT,**

**PRODUCTION AND STOCKPILING OF BACTERIOLOGICAL**

**(BIOLOGICAL) AND TOXIN WEAPONS AND ON THEIR DESTRUCTION**

**Thursday, 21 August 2008**

Mr. Chairman, Distinguished Representatives, Ladies and Gentlemen. It is a great honour to be invited to participate in this Meeting of Experts of the States Parties to the Biological and Toxin Weapons Convention which we are doing on behalf of the International Union of Pure and Applied Chemistry (IUPAC) and with the explicit endorsement of the President of IUPAC, Professor Jung-Il Jin of Korea. The Mission of IUPAC is to advance the worldwide aspects of the chemical sciences (the term "chemical sciences" is used here to refer to chemistry, broadly defined, and to those disciplines and technologies that make significant use of chemistry) and to contribute to the application of chemistry in the service of Mankind. In so doing, IUPAC promotes the norms, values, standards, and ethics of science and advocates the free exchange of scientific information and unimpeded access of scientists to participation in activities related to the chemical sciences. IUPAC currently has 51 National Adhering Organisations<sup>1</sup> (NAOs) and a further 17 Associate National Adhering Organisations (ANAOs)<sup>2</sup>.

Mr. Chairman

IUPAC notes that the topics to be considered by this Meeting of Experts are:

- **National, regional and international measures to improve biosafety and biosecurity**, including laboratory safety and security of pathogens and toxins.
- **Oversight, education, awareness raising, and adoption and/or development of codes of conduct** with the aim of preventing misuse in the context of advances in bio-science and bio-technology research with the potential of use for purposes prohibited by the Convention.

IUPAC welcomes the opportunity to contribute towards the strengthening of the Biological and Toxin Weapons Convention. IUPAC has participated in meetings related to the Chemical Weapons Convention (CWC) since 2002 when IUPAC carried out a review of the advances in science and technology of relevance to the CWC prior to the First Review Conference of that Convention in April 2003. The report<sup>3</sup> of that review published in *Pure and Applied Chemistry* was widely appreciated by the States Parties to the CWC and it played a useful part in the successful outcome of the First Review Conference. A further

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<sup>1</sup> The countries of the 51 National Adhering Organizations are: Australia, Austria, Bangladesh, Belarus, Belgium, Brazil, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Denmark, Egypt, Ethiopia, Finland, France, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Korea, Kuwait, Netherlands, New Zealand, Norway, Pakistan, Poland, Portugal, Puerto Rico, Russia, Serbia and Montenegro, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, USA and Uruguay.

<sup>2</sup> The 17 countries linked to IUPAC as Associate National Adhering Associations are: Argentina, Cyprus, Estonia, Hong Kong, Kenya, Malaysia, Mauritius, Mexico, Peru, Philippines, Romania, Singapore, Sri Lanka, Tanzania, Thailand, Tunisia, and Vietnam.

<sup>3</sup> *IUPAC Workshop: Impact of Scientific Developments on the Chemical Weapons Convention*, *Pure and Applied Chemistry*, Vol. 74, No. 12, December 2002, pp. 2229-2352. Available at <http://old.iupac.org/publications/pac/74/12/>

review of advances in science and technology was carried out prior to the Second Review Conference in 2008 and the report<sup>4</sup> again provided a useful input to that Conference.

A key element of IUPAC is its Committee on Chemical Education which advises on matters relating to chemistry education, including the public understanding of chemistry. In July 2005 IUPAC and the Organisation for the Prohibition of Chemical Weapons (OPCW) organised a workshop<sup>5</sup> in Oxford to address *Education, Outreach and Codes of Conduct to Further the Norms and Obligations of the Chemical Weapons Convention*.

The summary findings and observations reached at that workshop in 2005 in regard to Chemistry Education and Outreach included:

- *Steps need to be taken in chemistry education both at secondary and postsecondary levels to enhance the awareness of both the benefits that science and technology using chemicals can bring and of the potential for misuse in regard to illicit drugs, chemical and biological weapons, PIC chemicals, POPs, etc.*

and in regard to Codes of Conduct included:

- *Codes of conduct are needed for all those engaged in science and technology using chemicals to protect public health and the environment and to ensure that activities in science and technology using chemicals are, and are perceived to be, in compliance, with international treaties, national laws and regulations such as those relating to illicit drugs, chemical and biological weapons, banned and severely restricted chemicals, PIC chemicals, persistent organic pollutants (POPs), etc.*

In each case, the relevance to **both** chemical and **biological** weapons was noted.

There is increasing recognition that the links between chemistry and biology are becoming ever closer and hence there is much benefit to be gained in the regimes for the prohibition of chemical and of biological weapons being aware of developments in both regimes. It is against this background that IUPAC is pleased to participate and contribute to this Meeting of Experts of the States Parties of the Biological and Toxin Weapons Convention.

Mr. Chairman

In regard to **education**<sup>6</sup>, IUPAC following the 2005 workshop has had two task forces considering

- Multiple use of chemicals and professional code of conduct (Natalia Tarasova, Moscow) (completed 2006)<sup>7</sup>.

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<sup>4</sup> *Impact of Scientific Developments on the Chemical Weapons Convention*, Pure and Applied Chemistry, Vol. 80, No. 1, January 2008, pp. 175-200. Available at <http://media.iupac.org/publications/pac/2008/pdf/8001x0175.pdf>

<sup>5</sup> *Education, Outreach and Codes of Conduct to Further the Norms and Obligations of the Chemical Weapons Convention*. Pure and Applied Chemistry, Volume 78, No. 11, 2169-2192. Available at: <http://media.iupac.org/publications/pac/2006/pdf/7811x2169.pdf>

<sup>6</sup> For further information in regard to education topics, contact Alastair Hay at [a.w.m.hay@leeds.ac.uk](mailto:a.w.m.hay@leeds.ac.uk)

- Educational material for raising awareness of the Chemical Weapons Convention and the multiple uses of chemicals (Alastair Hay, Leeds) (completed 2007)<sup>8</sup>. This material is available in Arabic, Chinese, English, French, Russian and Spanish at <http://www.iupac.org/multiple-uses-of-chemicals>

The latter IUPAC project on 'multiple uses of chemicals' reminds chemists of the choices they face, that individual chemicals can have multiple uses, and that decisions about how they are used, including not to make chemical weapons, is the responsibility of each scientist. Education projects covering related themes are needed in other disciplines to introduce scientists to biological weapons issues.

Mr. Chairman, the Meeting of Experts is recommended to include among its conclusions one along the following lines:

- Education projects for the life sciences should remind those engaged in the life sciences of the choices they face, that the life sciences can have multiple effects, and that decisions about how they are used, including not to be used as biological weapons, is **the responsibility of each individual** engaged in the life sciences.

Mr. Chairman, in regard to **codes of conduct**<sup>9</sup>, IUPAC from its considerations of this topic<sup>10</sup> would recommend that this Meeting include among its conclusions three along the following lines:

- Codes of conduct should be to ensure that activities in the life sciences cause no harm and are thus form part of a **comprehensive integrated approach** to ensuring compliance with international treaties, national laws and regulations such as those relating to the life sciences, illicit drugs, chemical and biological weapons, banned and severely restricted chemicals, etc.
- Codes of conduct should emphasis the importance that activities are both in compliance and **perceived to be** in compliance with the Convention and national implementing legislation
- Codes of conduct should emphasise that those engaged in the life sciences **will not knowingly engage** in activities prohibited by the Convention or national legislation.

Thank you, Mr. Chairman and Distinguished Representatives.

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<sup>7</sup> For further information see <http://www.iupac.org/web/ins/2005-028-1-050>

<sup>8</sup> *Multiple Uses of Chemicals: Clear Choices or Dodgy Deals?* Chemistry International Vol. 29, No. 6, Nov-Dec. 2007. Available at [http://old.iupac.org/publications/ci/2007/2906/pp2\\_2005-029-1-050.html](http://old.iupac.org/publications/ci/2007/2906/pp2_2005-029-1-050.html)

<sup>9</sup> For further information in regard to codes of conduct contact Graham Pearson at [Graham\\_Pearson@Compuserve.com](mailto:Graham_Pearson@Compuserve.com)

<sup>10</sup> For further information see <http://www.iupac.org/web/ins/2007-022-2-020>