

Foreword

As a way of promoting a culture of responsible conduct in the chemical sciences and to guard against the misuse of chemistry, in November 2014 Germany put forward a proposal to develop ethical guidelines for chemistry professionals, related to the Chemical Weapons Convention. The proposal was endorsed by the Conference of the States Parties at its Nineteenth Session, in December 2014. Ownership of this proposal was immediately passed to the international scientific and industry community, which had already addressed similar proposals.

The OPCW facilitated two workshops involving a group of more than 30 scientists and chemistry professionals from over 20 countries, including all regional groups, to discuss and draft possible ethical guidelines for the practice of chemistry under the norms of the Convention. The workshops were held on 10-11 March and 17-18 September 2015 at OPCW Headquarters in The Hague, and were chaired by Professor Alejandra Suárez of Argentina.

As an outcome of the workshops, *The Hague Ethical Guidelines* were drafted, intended to serve as elements for ethical codes and discussion points for ethical issues related to the practice of chemistry under the Convention. The core element of the guidelines, which draw on many existing elements, is based on the premise that "achievements in the field of chemistry should be used to benefit humankind and the environment". The guidelines provide a useful framework for debating the vital dimension of ethics in relation to chemical disarmament and non-proliferation.

The Hague Ethical Guidelines was formally announced to the States Parties of the Chemical Weapons Convention by the OPCW Director-General in the opening remarks to the 80th session of the Executive Council:

The Hague Ethical Guidelines have been made available on the OPCW public website. I encourage all States Parties to share the guidelines with their National Authorities, Ministries of Education, educational institutions, scientific communities and other stakeholders to advance understanding of the importance of nurturing responsible and ethical scientific development among chemistry professionals (EC-80/DG.24, Dated 6 October 2015, paragraph 17).

Cover image: Word cloud generated from the text of The Hague Ethical Guidelines and the 142 codes of conduct and codes of ethics relevant to the practice of chemistry described in the presentation of Amir Imani (See page 34 of Appendix 3)

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Workshop Participants and Observers (17-18 September 2015)



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Leiv Sydnes, (28) Dr Mark Cesa, (29) Dr Muhammad Zafar-Uz-Zaman, (30) Dr Robert Mathews, (31) Dr Philip Coleman, (32) Dr Detlef Maennig, (33) Dr Nancy Jackson (34) Mr Steven Hill, (35) Dr Prashant Yajnik, (36) Professor Dr Henning Hopf.



Executive Summary

This report summarizes the second Workshop on Ethical Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention (CWC), held from 17-18 September 2015 at the Organisation for the Prohibition of Chemical Weapons (OPCW) Headquarters in The Hague, The Netherlands and chaired by Professor Alejandra G. Suárez.

Thirty-three chemistry practitioners, with representation from all regional groups arrived at a consensus text, *The Hague Ethical Guidelines*,¹ and discussed how these guidelines could be taken forward. The guidelines are the outcome of an initiative originally proposed by the permanent representation of the Federal Republic of Germany to the Nineteenth Conference of States Parties to the Chemical Weapons Convention (see C-19/5, Dated 5 December 2014, paragraph 23.3).²

The Hague Ethical Guidelines, the outcome of this workshop, have been made publically available so that all chemistry practitioners can reference them and consider their use in initiatives and education related to the responsible practice of chemistry and ethical considerations of the norms of the CWC. This report summarises the workshop and its recommendations.

¹ Available on the OPCW public website at:
<https://www.opcw.org/special-sections/science-technology/the-hague-ethical-guidelines/>

² Available on the OPCW public website at:
https://www.opcw.org/fileadmin/OPCW/CSP/C-19/en/c1905_e_.pdf

Introduction and Purpose

The second Workshop on Ethical Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention (CWC) continued the work started in March 2015 to take forward a proposal by the permanent representation of the Federal Republic of Germany. This initiative to the Nineteenth Conference of States Parties (CSP-19) to the Chemical Weapons Convention called for a text of ethical guidelines for chemical professionals related to the Convention. From the States Parties of the CWC:

The Conference **welcomed** the initiative for a text of ethical guidelines for chemical professionals related to the Convention and **invited** the Secretariat to inform the Council of its efforts for the advancement of the initiative and its objectives in close collaboration with relevant professional and chemical industry organizations. The Conference **encouraged** States Parties to discuss the matter further (C-19/5, Dated 5 December 2014, paragraph 23.3).

The first workshop held from 10-11 March 2015, included eighteen participants representing academia, industry and chemical societies. The workshop reviewed previous and current ethical code initiatives, was briefed on experiences from the Biological and Toxin Weapons Convention (BTWC) and the participants were provided with a chemical industry perspective. Key elements of CWC relevant ethical guidelines, principles and best practices for drafting guidelines, and synergy with other current initiatives were discussed. A report from this workshop is available on the OPCW public website.³

A Steering Committee of five participants from the March workshop prepared draft text to be further considered by a larger group. This group met from 17-18 September 2015 in The Hague, at the second workshop on Ethical Guidelines for the Practice of Chemistry under the Norms of the CWC. Thirty-three participants, chemistry practitioners from all regional groups (see Appendix 1 for a full list of participants), were in attendance; including fifteen of the original eighteen participants of the first workshop. Working iteratively and in breakout groups addressing different thematic elements, the workshop arrived at a consensus text, *The Hague Ethical Guidelines*,⁴ and discussed recommendations for taking these guidelines forward.

³ Available on the OPCW public website at:
https://www.opcw.org/fileadmin/OPCW/SAB/en/March_2015_Ethical_Codes_Workshop-Report.pdf

⁴ Available on the OPCW public website at:
<https://www.opcw.org/special-sections/science-technology/the-hague-ethical-guidelines/>

Agenda

Workshop on Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention

Thursday, 17 September

- 9:00 Opening remarks by OPCW Director-General
- 9:10 Tour de table
- 9:20 Goals/purpose of workshop
- Welcome and background, Workshop Chair, Alejandra Suárez
- Draft text next steps (Steering Committee)
- Process (Steering Committee)
- Synergy with other initiative (ACS, IUPAC)
- 10:15 Codes of conduct and ethics in chemistry
- Overview of existing codes of conduct and ethics relevant to the practice of chemistry (Amir Imani, Wardah Amir)
- Education and Outreach at the OPCW and its connection to codes of ethics (Joseph Ballard, OPCW)
- 11:00 Coffee break and group photograph
- 11:30 Discussion (led by Steering Committee)
- 13:00 Lunch
- 13:30 Discussion/Breakout groups (continued)
- 15:30 Coffee break
- 15:45 Discussion/Breakout groups (continued)
- 17:15 Planning for Day 2
- 18:00 Workshop Day 1 concludes

Friday, 18 September

- 9:00 Day 1 review and Day 2 goals
- 9:15 Discussion/Breakout groups (continued)
- 10:30 Coffee break
- 10:45 Discussion/Breakout groups (continued)
- 12:00 Breakout group summaries
- 12:30 Finalizing text
- 13:00 Lunch
- 13:30 Finalizing text (continued)
- 14:45 Transportation to German Mission for afternoon reception
- 16:15 Return from German Mission
- 16:30 Finalizing text (continued)
- 17:00 Briefing on workshop outcome and next steps (led by steering committee)
 - Introductory remarks by OPCW Deputy Director-General
 - State Parties in attendance
- 18:00 Workshop concludes

Summary of Presentations

Summaries of the presentations from the workshop are provided here for reference. The complete set of slides and materials of the workshop are included in Appendix 3 of this report.

Opening Remarks by OPCW Director-General⁵

Professor Suarez,

Distinguished participants,

Ladies and gentlemen,

I am delighted to welcome such an accomplished group of chemistry practitioners here at the OPCW to continue this important discussion on the responsible practice of the chemical sciences.

I especially wish to thank Professor Suarez, a former chairperson of our Scientific Advisory Board, for her able stewardship of the March workshop and for convening this important follow-up.

The need to promote peaceful uses of chemistry has never been greater.

This year, in April, we marked the centenary of the first large-scale use of chemical weapons.

And more recently, we have heard – and continue to hear – allegations of the use of chemicals as weapons in Syria and Iraq.

Over the past century, the misuse of chemicals has spread fear and terror, which the Chemical Weapons Convention has over the past 18 years allowed us to abate and almost completely remove.

Recent developments have however shown that we cannot be complacent, especially given new threats posed by non-state actors, coupled with the accessibility of many toxic industrial chemicals.

At the same time, we are seeing breath-taking advances across the sciences – advances that offer extraordinary benefits: for example, in health through the creation of new diagnostic tools, and in energy through the development of new chemical production technologies.

⁵ Available on the OPCW public website at:
https://www.opcw.org/fileadmin/OPCW/ODG/uzumcu/20150917_Director-General_Ethical_Guidelines_Workshop_Opening_Remarks.pdf

These not only serve to ensure a sustainable future for humanity. They can also directly benefit our work at the OPCW – work which advances the goals of human security and global peace.

As scientific developments continue to proceed at an ever increasing pace, it is crucial that we strengthen our partnership with the scientific community.

Science underpins the Chemical Weapons Convention, and it is those who are trained in science and engineering – here at the OPCW and in national jurisdictions – will continue to contribute to our common objective to rid the world of chemical weapons, and to prevent them from ever re-emerging.

As we promote science and engage technical stakeholders, we must work to address and allay the concerns that policy-makers might have about the implications of scientific developments.

This means that our policy-makers must seek and engage with scientists and the advice they provide.

In short, they must make efforts to become more science-literate.

There are many paths to promoting this sort of dialogue, ranging from citizen science projects that seek to engage technical and non-technical participants alike, to more proactive efforts by the scientific community to show how science can serve as a tool for peace as well as prosperity.

The initiative before you – ethical guidelines for the practice of chemistry under the Chemical Weapons Convention – represents an overarching commitment in this area.

It is intended to strengthen bonds between science and society by better sensitising scientists to the importance and impact of their work.

This is an initiative by scientists for scientists – an initiative whose objectives we wholeheartedly support.

Your discussions from the March workshop have evolved into the draft guidelines you will be discussing today.

Key elements include the use of chemistry for the benefit of humankind and the environment, safety and security awareness, sustainable practice, oversight and accountability, and education.

These elements address the many areas in which chemistry affects our lives.

They remind us how science can generate concern amongst disarmament policy makers, and they provide a basis for fostering a culture and practice of responsible science.

I very much look forward to the outcome of your deliberations.

The text you will agree on, and the recommendations you will draw, will make a valuable contribution to advancing discussion on ethical issues touching on your work – to ensure that such issues are not left behind, as science and technology continue to march rapidly forward.

In March, you discussed a number of existing codes of conduct and ethics relevant to chemistry.

Your work has not taken place in a vacuum, but in a tradition that taps into more than 140 such codes.

This provides a solid foundation on which to build and introduce new ideas that complement and strengthen an already impressive body of work in this area.

As demonstrated by the many common themes across these codes, responsible science knows no borders.

I am pleased to see participants from across all regions of the world, from academia and industry, from prominent national and international scientific societies.

This group provides unique perspectives that, I am certain, will stimulate many useful new ideas and fresh approaches.

Over the next two days, we must appreciate that producing an ethical code is just the beginning. It is practice that justifies and shapes theory, and creates better norms of behaviour.

To this end, all successful codes of this sort must be permitted to evolve as a way of attesting to their usefulness and relevance.

We have before us the very real prospect of a future free of chemical weapons – a future in which the chemical sciences will play a vital role in preserving disarmament gains.

The sort of discussion you have engendered shows the world that scientists are much more than stakeholders in the disarmament project, but also drivers of science that actively serves peace and security.

It is in this role that you and your peers are creating a culture in which such barbarous weapons can, effectively, no longer be created.

This is, to my mind, a crucial investment in ensuring that chemical weapons remain forever relegated to history.

I wish you every success. Thank you.

Workshop on Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention (Professor Alejandra G. Suárez, Dr Jo Husbands and Professor Alastair Hay)

Briefing the participants on the background of the ethical guideline initiative and the objectives of the workshop, Professor Alejandra Suárez summarised the outcome of the March workshop and the formation of the Steering Committee; Dr Jo Husbands introduced the draft text produced by the Steering Committee; and Professor Alastair Hay explained the process through which the participants of the September workshop would proceed. Slides from this presentation can be found on page 21 of Appendix 3.

The Global Chemists' Code of Ethics Project: An Overview (Dr Nancy Jackson, Mr Steven Hill)

Dr Nancy Jackson updated the workshop on the Global Chemists' Code of Ethics Project. The goals of the project are to bring together chemists from around the world, share ideas and expertise and find synergies and common themes in other codes in order to produce a Global Chemists Code of Ethics (GCCE) and training materials. The GCCE will cover several main categories: research, safety, scientific writing, environment and security. *The Hague Ethical Guidelines* could serve as a source of elements and text to the GCCE to touch upon issues related to the practice of chemistry under the norms of the CWC. Slides from this presentation can be found on page 27 of Appendix 3.

Ethical Guidelines for Chemists (Dr Mark C. Cesa)

In 2007 a project on *Recommendations for Codes of Conduct* was conducted by IUPAC. Dr Mark C. Cesa presented these recommendations, which are a series of draft elements as guiding principles for revision of existing codes and establishment of new ones. The draft elements are dynamic and emphasize the benefits of chemicals to humankind. Dr Cesa described the process by which the draft elements were developed, how they were received and have been used, and the lessons learned from the experience. Dr Cesa's slides can be found on page 30 of Appendix 3.

Codes of Ethics and Conduct: A Data Driven Insight (Mr Amir Imani)

Mr Amir Imani presented the results of a text analysis on a set of one-hundred forty-two existing codes of conduct and codes of ethics relevant to the practice of chemistry. Similarities and differences across the data set as well as the occurrence of content related to the key elements being discussed within the workshop were highlighted. This presentation was a follow up to a similar analysis, on a smaller set of codes that Mr Imani had presented at the March workshop. The results produced similar conclusions to those discussed in March: the text used in the existing codes tends to distinguish itself not by region or type of code (e.g. ethics or conduct), but by the type of organisation that has produced the code and its purpose (for example: Chemical Industry, Academies of Science, Chemical Societies, Clinical Chemistry Associations or International Organisations).

In discussion, workshop participants noted that codes relevant to the practice of chemistry, independent of their purpose, have much in common with one another, yet they must engage their stakeholders in order to accomplish their purpose i.e. those who intend to use the codes must ultimately draft their own text and champion the values of their code. It was agreed that providing guidelines on topical areas (e.g. ethical guidelines for the practice of chemistry under the CWC) would allow others to adopt elements into new and existing code initiatives that are tailored to the needs and outlooks of each unique initiative.

The compilation of one-hundred and forty-two codes used in Mr Imani's analysis is available upon request from the OPCW (contact the Science Policy Adviser at scitech@opcw.org). Mr Imani's slides can be found on page 34 of Appendix 3.

Keywords in the Compiled Codes and Ethics Education for Undergraduate STEM Students (Ms Wardah Amir, OPCW)

Wardah Amir (of the Technical Secretariat) provided a follow on to the presentation of Mr Imani, identifying the codes within the compilation that include text related to chemical and/or biological weapons. The presentation continued with a survey of ethics courses offered within science, technology, engineering and mathematics (STEM) programmes across the top one-hundred ranked STEM universities worldwide at the undergraduate level (medical and public health programmes were not considered in this survey). It was found that across the top one-hundred universities, forty-nine offered ethics courses for undergraduate STEM students (a total of sixty-two courses were identified across these STEM departments). While the survey indicated that ethical discussions are not absent from STEM education programmes, the participants felt that integrating ethical considerations into the general coursework was a more effective means of raising awareness on the topic rather than holding a specialised course. The presentation can be found on page 43 of Appendix 3.

Education and Outreach at the OPCW and its Connection to Codes of Ethics (Mr. Joseph Ballard, OPCW)

Joseph Ballard (of the Technical Secretariat) delivered a presentation on the Organisation's education and outreach activities, describing the increasing importance of education and outreach within the context of the achievement of the Organisation's strategic goals. The presentation outlined the establishment of a new Advisory Board on Education and Outreach and its expected contribution to the further development and strategic orientation of the Organisation's education and outreach programmes. It was noted that the development and publishing of *The Hague Ethical Guidelines* was likely to be a useful addition to those programmes, not only in the context of outreach to chemistry practitioners but also with a broader range of stakeholders. The presentation can be found on page 51 of Appendix 3.

Informal Briefing to States Parties

Introductory Remarks by OPCW Deputy Director-General⁶

Good afternoon,

Excellencies,

Distinguished delegates, workshop participants,

and Ladies and Gentlemen

I would like to welcome you all to this briefing, where we will hear about the outcomes of the workshop on ethical guidelines for the practice of chemistry related to the Chemical Weapons Convention.

As the Director-General noted yesterday, the need to promote peaceful uses of chemistry has never been greater. Global chemical disarmament has enjoyed remarkable success over the past two decades. But we must now buttress this success by preventing chemical weapons from re-emerging – in any form, under any circumstances.

The international community has voiced its serious concerns on mounting allegations of use of chemical weapons in Syria and Iraq – including by non-state actors. Such attacks remind us of the invidious dual-use challenges that come with any action to prevent chemical weapons development and use.

Over the past century, chemical weapons have often given science a bad name.

All of us are familiar with the case of a scientist, who saved tens of millions from starvation by creating a method for synthesizing ammonia and creating the modern fertilizer industry. Later this same Nobel Chemistry Prize laureate also applied his knowledge to masterminding his country's chemical weapons programme during World War I and, what is more, saw it as an obligation to do so.

What the Chemical Weapons Convention shares in common with the aims of this workshop is the obligation of science to work always in the cause of peace and security. It is to bring forth applications that serve to benefit humankind, and never again to harm it. These applications should improve human health, agricultural yields, environmental management and consumer production in sustainable ways for future.

⁶ Available on the OPCW public website at https://www.opcw.org/fileadmin/OPCW/DDG/20150918_Deputy_Director-General_Ethical_Guidelines_Briefing_Opening_Remarks.pdf

The OPCW understandably takes a very close interest in the work of this distinguished group of scientists and industrial chemistry practitioners to commit themselves to an awareness of the ethical dimensions of their work.

The Conference of the States Parties welcomed this initiative last December, and we will now learn of the fruits of its labour. I know that they are based on thorough research of past efforts in this area across the globe. Importantly also, I know that they speak to the realities that scientists and practitioners deal with, since it is scientists and practitioners who are driving this initiative.

Drilling down to the ethical foundations of these realities is what this initiative has been about from the outset, so that changing perspectives brought about by scientific advances are always tied to the constant of ethical and professional responsibility.

I understand that a number of the participants here with us today are involved in the Global Chemists Code of Ethics project. I hope that concepts relevant to the Chemical Weapons Convention discussed here in The Hague will also find their way into discussions on this project scheduled to take place in Dhaka later this year.

In all of this, we need to remember that any effort to develop ethical guidelines of this sort can only be endorsed in widespread practice. Nurturing a culture of responsible science will, I hope, be our common commitment as we move forward.

I wish to acknowledge here the impetus for this initiative provided by the German delegation to the OPCW, as well as the efforts of our former Scientific Advisory Board chair, Professor Suarez, in convening a series of workshop. With that, I would like to thank Professor Suarez and all the participants for their valuable contributions, and invite Professor Suarez to now brief us on their deliberations.

Thank you for your attention.

Informal Briefing for Delegations (Professor Alejandra G. Suárez, Dr Jo Husbands, Professor Alastair Hay)

The workshop concluded with a briefing to States Parties of the CWC. Professor Alejandra G. Suárez and Dr Jo Husbands provided an overview of both the March and September workshops and the process through which the German initiative was taken forward. Professor Alastair Hay introduced *The Hague Ethical Guidelines* (Appendix 2). Twenty-three States Parties were in attendance. The slides presented at the briefing can be found on page 57 of Appendix 3.

Outcomes and Next Steps

The final product of this workshop, *The Hague Ethical Guidelines*, along with a preamble drafted by the participants to describe the purpose and use of these guidelines, was endorsed by participants from both the March and September workshops and posted on the OPCW public website.⁷ The complete text (preamble, guidelines and endorsements) are available in Appendix 2 of this report.

To best promote and disseminate *The Hague Ethical Guidelines*, workshop participants recommended that the document could be usefully shared with all National Authorities of the CWC, education ministries in CWC States Parties, government agencies and ministries responsible for the practice of chemistry (who could further distribute to appropriate professional associations) and scientific societies. The workshop called for translation into other languages; ideally beginning with the six official languages of the OPCW and then moving beyond these languages with possible support from relevant States Parties.⁸

In reaching out to the scientific community, it was suggested to circulate the guidelines by means of international or regional chemistry conferences organized by organisations such as The World Academy of Sciences (TWAS), the International Union for Pure and Applied Chemistry (IUPAC), the American Chemical Society (ACS), the Royal Society of Chemistry (RSC), and all other national, regional, or international chemistry societies. Building partnerships with international organisations with ties to promote science, such as UNESCO, would provide a further means to raise awareness of these guidelines.

In reaching out to industry, it was suggested to share the guidelines with industrial associations through the Responsible Care initiative and through conferences organised by industry organisations such as the International Council of Chemical Associations (ICCA) as well as any other national and regional affiliated industry organisations.

The participants themselves agreed to share and distribute the guidelines with their respective chemical societies and national industry associations. Several participants intend to organise workshops to further promote and discuss the guidelines.

Moving forward, the guidelines are currently being considered for their relevance to the Global Chemists Code of Ethics (GCCE) workshop to be held in 2016. The workshop recommended sharing *The Hague Ethical Guidelines* through a presentation at the GCCE. A side event at the 20th Conference of States Parties in December 2015 with presentations from members of the steering committee is also planned.

⁷ Available on the OPCW public website at:

<https://www.opcw.org/special-sections/science-technology/the-hague-ethical-guidelines/>

⁸ At the time of the writing of this report, a Spanish language version of *The Hague Ethical Guidelines* had been prepared by National Authorities of Argentina; available at:

<http://www.mrecic.gov.ar/lineamientos-eticos-de-la-haya>.

Appendix 1

Participants of the Second Workshop on Ethical Guidelines for the Practice of Chemistry under the Norms of the CWC

The Hague, The Netherlands

17-18 September \2015

	Name of Participant	Affiliation
1	Professor Muhamad Abdulkadir Martoprawiro	Bandung Institute of Technology Bandung, Indonesia
2	Professor Jasim Uddin Ahmad	Jahangirnagar University Dhaka, Bangladesh
3	Professor Abeer Al-Bawab	University of Jordan Amman, Jordan
4	Professor Fernando Albericio Palomera	IRB Barcelona Institute for Research and Biomedicine Barcelona, Spain
5	Professor Jan Hendrik Apotheker	University of Groningen Groningen, The Netherlands
6	Professor Mahdi Balali-Mood	Medical Toxicology Research Centre Mashhad University of Medical Sciences Mashhad, Islamic Republic of Iran
7	Professor Djafer Benachour	LMPMP Faculté de Technologie, Université Ferhat Abbas Setif, Algérie
8	Dr Mark Clark Cesa	International Union of Pure and Applied Chemistry Naperville, Illinois, USA
9	Dr Philip Coleman	ECM Technologies (Pty) Ltd Pretoria, South Africa
10	Professor Dr Hartmut Frank	University of Bayreuth Bayreuth, Germany
11	Professor Alastair Hay	Molecular Epidemiology Unit LIGHT Laboratories University of Leeds School of Medicine Leeds, United Kingdom
12	Mr Steven Hill	American Chemical Society Washington DC, USA
13	Professor Dr Henning Hopf	Technische Universität Braunschwig, Institut für Organische Chemie Braunschweig, Germany
14	Dr Jo Husbands	The National Academies Washington DC, USA
15	Professor Jorge Ibañez	Iberoamerican University Mexico City, Mexico
16	Mr Amirhossein Imani	Consultant New York, USA

	Name of Participant	Affiliation
17	Dr Nancy Jackson	International Biological and Chemical Threat Reduction Sandia National Laboratories Albuquerque, New Mexico, USA
18	Dr Patrick John Lim	Chair of the Chemistry Department University of San Carlos Cebu, Philippines
19	Professor Mohd Jamil Maah	Academy of Sciences Malaysia Kuala Lumpur, Malaysia
20	Dr Detlef Maennig	Evonik Industries Hanau, Germany
21	Dr Robert Mathews	Defence Science and Technology Organisation (DSTO) Melbourne, Australia
22	Professor Temechegn Engida Merine	Addis Ababa University Addis Ababa, Ethiopia
23	Dr Kabrena Rodda	Pacific Northwest National Laboratory Richland, WA, USA
24	Dr Ting Kueh Soon	Institute Kimia Malaysia Kuala Lumpur, Malaysia
25	Professor Alejandra Graciela Suarez	Universidad Nacional de Rosario. Consejo Nacional de Investigaciones Científicas y Técnicas. Argentina
26	Professor Leiv Kristen Sydnnes	University of Bergen Norway
27	Mr Cheng Tang	The Ministry of National Defence Beijing, China
28	Professor Natalia P. Tarasova	Vice President IUPAC Mendeleev University of Chemical Technology Moscow, Russia
29	Dr Christopher Martin Timperley	Defence Science & Technology Lab (Dstl) Porton Down Salisbury, Wiltshire, United Kingdom
30	Dr Prashant Yajnik	Indian Chemical Council (ICC) Mumbai, India
31	Dr Muhammad Zafar-Uz-Zaman	National Engineering & Scientific Commission DDG (Chemicals) Islamabad, Pakistan
32	Professor Zuriati Binti Zakaria	Malaysia-Japanese International Institute of Technology Kuala Lumpur, Malaysia
33	Mr Muhammad Setyabudhi Zuber	Federation of the Indonesian Chemical Industry Jakarta, Indonesia

Appendix 2

The Hague Ethical Guidelines

Applying the norms of the practice of chemistry to support the Chemical Weapons Convention

The responsible practice of chemistry improves the quality of life of humankind and the environment. Through their many peaceful uses, such as in research and industry, chemicals play an essential role in this improvement. However, some chemicals can also be used as chemical weapons or to create them, and these weapons are among the most horrific in the world.

The 1993 Chemical Weapons Convention (CWC) embodies the powerful international norm against chemical weapons, requiring its States Parties *“never under any circumstances: (a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone; (b) To use chemical weapons; (c) To engage in any military preparations to use chemical weapons; (d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention.”* The task of destroying the world’s declared stockpiles of chemical weapons is close to completion, but the threats that the use of chemicals as weapons pose to global security have not yet been eliminated.

As destruction of the remaining chemical weapons continues, a concerted effort is needed to prevent their re-emergence. This includes training and raising awareness among chemistry practitioners, defined as anyone trained in chemistry as well as others dealing with or handling chemicals. Their support is needed so that production and use of chemicals is accompanied by recognition of the responsibility to ensure that they are applied solely for peaceful and beneficial purposes. Fortunately, ethical standards established by the global chemistry community already provide a foundation. Building on that foundation, a group of experts from 24 countries from all regions of the world convened to define and harmonize key elements of ethical guidelines as they relate to chemical weapons based on existing codes.⁹

Such codes are primary ways through which the community’s ethical standards are addressed. The key elements presented in this text should be incorporated into new and existing codes in order to align with the provisions of the CWC. A code need not mention chemical weapons or the CWC to support its basic goals, and provisions may need to be tailored for particular sectors or circumstances, while still reflecting the fundamental values. Taken together, “The Hague Ethical Guidelines” provide the key elements that should be applied universally.

⁹ “Code” is used as a general term and includes the full range of such documents, from aspirational statements such as the Hippocratic Oath to codes that are enforceable, for example as part of a practitioner’s terms of employment.

The Key Elements

Core element. Achievements in the field of chemistry should be used to benefit humankind and protect the environment.

Sustainability. Chemistry practitioners have a special responsibility for promoting and achieving the UN Sustainable Development Goals of meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Education. Formal and informal educational providers, enterprise, industry and civil society should cooperate to equip anybody working in chemistry and others with the necessary knowledge and tools to take responsibility for the benefit of humankind, the protection of the environment and to ensure relevant and meaningful engagement with the general public.

Awareness and engagement. Teachers, chemistry practitioners, and policymakers should be aware of the multiple uses of chemicals, specifically their use as chemical weapons or their precursors. They should promote the peaceful applications of chemicals and work to prevent any misuse of chemicals, scientific knowledge, tools and technologies, and any harmful or unethical developments in research and innovation. They should disseminate relevant information about national and international laws, regulations, policies and practices.

Ethics. To adequately respond to societal challenges, education, research and innovation must respect fundamental rights and apply the highest ethical standards. Ethics should be perceived as a way of ensuring high quality results in science.

Safety and Security. Chemistry practitioners should promote the beneficial applications, uses, and development of science and technology while encouraging and maintaining a strong culture of safety, health, and security.

Accountability. Chemistry practitioners have a responsibility to ensure that chemicals, equipment and facilities are protected against theft and diversion and are not used for illegal, harmful or destructive purposes. These persons should be aware of applicable laws and regulations governing the manufacture and use of chemicals, and they should report any misuse of chemicals, scientific knowledge, equipment and facilities to the relevant authorities.

Oversight. Chemistry practitioners who supervise others have the additional responsibility to ensure that chemicals, equipment and facilities are not used by those persons for illegal, harmful or destructive purposes.

Exchange of information. Chemistry practitioners should promote the exchange of scientific and technical information relating to the development and application of chemistry for peaceful purposes.

Endorsed by

Professor Muhamad Abdulkadir Martoprawiro (Indonesia)
Professor Jasim Uddin Ahmad (Bangladesh)
Professor Abeer Al-Bawab (Jordan)
Professor Fernando Albericio Palomera (Spain)
Professor Jan Apotheker (The Netherlands)
Professor Mahdi Balali-Mood (Islamic Republic of Iran)
Professor Djafer Benachour (Algeria)
Dr Mark Cesa (United States of America)
Professor Al-Nakib Chowdhury (Bangladesh)
Dr Philip Coleman (South Africa)
Professor Dr Hartmut Frank (Germany)
Professor David Gonzalez (Uruguay)
Professor Alastair Hay (United Kingdom of Great Britain and Northern Ireland)
Mr Steven Hill (United States of America)
Professor Dr Henning Hopf (Germany)
Dr Jo Husbands (United States of America)
Professor Jorge Guillermo Ibañez Cornejo (Mexico)
Mr Amirhossein Imani (Islamic Republic of Iran)
Dr Nancy Jackson (United States of America)
Dr Patrick John Lim (Philippines)
Professor Mohd Jamil Maah (Malaysia)
Dr Detlef Maennig (Germany)
Professor Peter Mahaffy (Canada)
Dr Robert Mathews (Australia)
Professor Temechegn Engida (Ethiopia)
Dr Kabrena Rodda (United States of America)
Dr Ting Kueh Soon (Malaysia)
Professor Alejandra Graciela Suarez (Argentina)
Professor Leiv K. Sydnnes (Norway)
Mr Cheng Tang (China)
Professor Natalia P. Tarasova (Russian Federation)
Dr Christopher Timperley (United Kingdom of Great Britain and Northern Ireland)
Dr Hans-Georg Weinig (Germany)
Dr Prashant Yajnik (India)
Dr Muhammad Zafar-Uz-Zaman (Pakistan)
Professor Zuriati Binti Zakaria (Malaysia)
Mr Muhammad Setyabudhi Zuber (Indonesia)

Appendix 3 Slides from Presentations

Workshop on Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention (Professor Alejandra G. Suárez, Dr Jo Husbands, Professor Alastair Hay)

WORKSHOP ON GUIDELINES FOR THE PRACTICE OF CHEMISTRY UNDER THE NORMS OF THE CHEMICAL WEAPONS CONVENTION

BACKGROUND & OBJECTIVES

Alejandra G. Suárez, Jo Husbands, Alastair Hay



The word cloud features various terms such as: LAWS, MANAGEMENT, COMPLIANCE, COMMUNITY, RELATED, RESPECT, ETHICS, WORK, POLICIES, CONDUCT, REPORT, STANDARDS, REQUIREMENTS, INFORMATION, RESEARCH, REQUIREMENTS, PERSONAL, USE, SHALL, CODE, ENSURE, PRACTICE, SECURITY, LEGAL, OPERATIONS, PUBLIC, RESPONSIBILITY, ACTIVITIES, CUSTOMERS, FAX, INVOLVEMENT, FOLLOWING, PERSONAL, APPROPRIATE, MAKE, DATA, PARTIES, SCIENTIFIC, CONSENT, HUMAN, CONTROL, INCLUDING, ACTIVITY, PROTECT, SAFETY, PRINCIPLES, CONFLICT, FAIR, ACTING, CONFIDENTIAL, REPORT, STANDARDS, REQUIREMENTS, INCLUDING.

BACKGROUND

Workshop on Guidelines for the Practice of Chemistry under the Norms of the CWC

11 March 2015 at the OPCW, Headquarters in The Hague

OBJECTIVE: discuss an initiative to develop a text of ethical guidelines for chemical professionals related to the CWC



A group of approximately 25 individuals, including men and women in professional attire, are posed for a group photograph in front of a brick building with large windows.

18 Participants from the chemical community: academics, scientists, representatives from the chemical industry, chemical associations.



TOPICS ADDRESSED:

- ✓ **Analysis of previous and current initiatives:**
 - Existing codes and guidelines
 - IUPAC
 - Other chemical associations
- ✓ **Experiences from the BTWC**
- ✓ **The Chemical Industry Perspective**

Three key issues were addressed in breakout groups

- **Key elements of CWC relevant ethical guidelines**
- **Principles and best practices for drafting guidelines**
- **Synergy with other current initiatives**

Agreed a process to move forward

- **Final report of the March workshop to be drafted**

https://www.opcw.org/fileadmin/OPCW/SAB/en/March_2015_Ethical_Codes_Workshop-Report.pdf

- **Subgroup of original participants have been appointed to draft key elements of Ethical Guidelines under the norms of the CWC** (Steering Committee)

- **All participants will review and provide feedback on the Draft of Ethical Guidelines.**

The reviewed draft was distributed

Workshop on Guidelines for the Practice of Chemistry under the Norms of the CWC

17-18 September 2015, OPCW Headquarters, The Hague

33 Participants from the chemical community from different regions of the world

AIMS

- ✓ **Bring together stakeholders across the chemical sciences to discuss and agree upon text that can be used as guidelines in the development or updating of codes of ethics**

OBJECTIVES

- ✓ **A consensus text Ethical Guidelines under the norms of the CWC.**
- ✓ **Recommendations for how it would be used.**

Working Toward A World Free of Chemical Weapons



A Safer World For the Future

The Draft Before You

- Prepared by small Steering Group, drawing on results of March workshop
- Assumptions:
 - Want to build from existing ethical standards and practices in chemistry
 - A code does not have to mention CWC to include ethical guidelines that support the Convention
- Implications:
 - Need to identify what ethical guidelines – called “elements” in draft – are key to supporting CWC
 - Current draft has candidate list with one core/essential element and others that are important, drawn from March meeting and other codes and similar documents
 - It is illustrated with examples from existing codes as a discussion starting point

Purpose of This Workshop

Starting from the draft document and proceeding based on your inputs, we will develop a set of ethical guidelines on the practice of chemistry under the norms of the Chemical Weapons Convention.

This text is a product of the workshop.

Tasks for Today and Tomorrow

- Refine the “key elements”
 - One core principle and supporting principles?
 - Is this intended to be a complete list or to illustrate options?
 - Should examples from existing codes be included or should draft explicit language be drafted?
- Arrive at a consensus text
- Decide on a Working Title. Perhaps?
“The Hague Guidelines for the Practice of Chemistry Under the Norms of the CWC”

Breakout Groups

- **Group 1**
 - Core element
 - Sustainability
 - Coordinators: Jo Husbands, Alejandra Suarez
- **Group 2**
 - Awareness
 - Education
 - Coordinator: Alastair Hay, Djafer Benachour
- **Group 3**
 - Safety and Security
 - Oversight
 - Accountability
 - Coordinator: Bob Mathews, Philip Coleman
- **Group 4**
 - Moving forward and synergies with other initiatives
 - Coordinator: Detlef Mannig, Prashant Yajnik

The Future

- We will invite the practitioners of chemistry and their professional societies to review this document and consider its content with a view to incorporating in their own codes elements and concepts that support the CWC.
- OPCW, State Parties interaction?

The Global Chemists' Code of Ethics Project: An Overview (Dr Nancy Jackson, Mr Steven Hill)


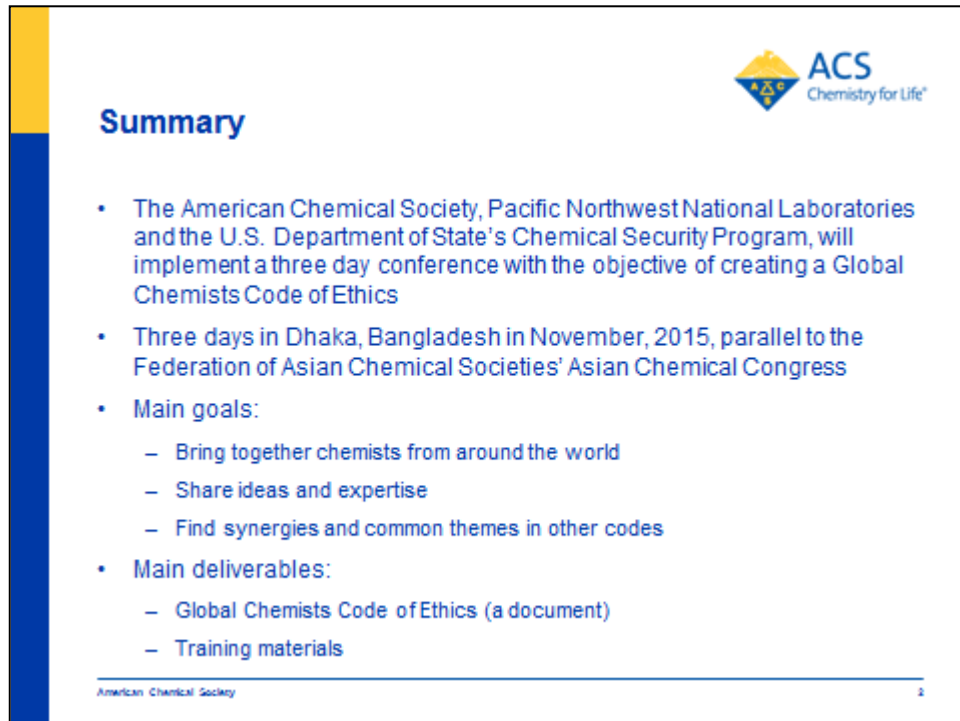


American Chemical Society



The Global Chemists' Code of Ethics Project: An Overview

Nancy Jackson and Steven Hill



Summary

- The American Chemical Society, Pacific Northwest National Laboratories and the U.S. Department of State's Chemical Security Program, will implement a three day conference with the objective of creating a Global Chemists Code of Ethics
- Three days in Dhaka, Bangladesh in November, 2015, parallel to the Federation of Asian Chemical Societies' Asian Chemical Congress
- Main goals:
 - Bring together chemists from around the world
 - Share ideas and expertise
 - Find synergies and common themes in other codes
- Main deliverables:
 - Global Chemists Code of Ethics (a document)
 - Training materials

American Chemical Society 2

Global Chemists Code of Ethics (GCCE)



- The GCCE will be created by practicing chemists from a wide range of countries and regions
- The code and training materials will be presented as a training package that can be used by chemists in various environments, including academia, government and industry.

- Will include the following categories:

The Global Chemists' Code of Ethics (GCCE)



Main Categories

Research

Safety

Scientific Writing

Environment

Security

Global Chemists Code of Ethics (GCCE)




- We are looking for input and feedback from you:
 - Last week, Jonathan sent out a request from our colleague Kabrena Rodda asking you to take a few minutes to fill out some questions regarding these subjects. If you have time, please do so
 - If you are interested in participating in the workshop, there are still some spots available. Please contact Steven Hill (s_hill@acs.org) to receive more information.
-

Ethical Guidelines for Chemists


Mark C. Cesa
President,
International Union of
Pure and Applied Chemistry

16 September 2015



OPCW Ethical Guidelines Workshop 9-12 mcc.ppt 16 September 2015
1 mcc

IUPAC Advancing Worldwide Chemistry



It is against this background that it is timely and important to examine why Codes of Conduct are relevant and matter to all those engaged in chemistry. The Codes of Conduct project arose from a working task assigned in late 2005 to address research, education, and the implementation of the Chemical Weapons Convention. Organized by IUPAC and the Organization for the Prohibition of Chemical Weapons (OPCW), the working group was charged with the task of examining the broader view of how chemistry might be improved—whether as first steps, to learn the lessons, or to help better in general. The discussion has focused on the responsibility of all who are engaged in chemistry to make it better, whether they are engaged in industry, academia, or government, wherever chemists are engaged. They must consider the ethical implications of their work. And this question is especially relevant today in our era of globalization.

IUPAC and Codes of Conduct

Workshop in Oxford, UK 2005
Outgrowth of 2002 Review for CWC

2007 Project on Recommendations for Codes of Conduct

Extend existing codes where possible
universal principles
professional society codes
codes for institutions/
workplaces

http://www.chemsci.org/chemsci/2011/11/06/2_papers.html 11/26/2014

OPCW Ethical Guidelines Workshop 9-12 mcc.ppt 16 September 2015
2 mcc

Recommendations for Codes of Conduct

Series of **draft elements** recommended as guiding principles for revision of existing codes and establishment of new ones

Dynamic, not static

Recognize and emphasize benefits of chemicals to humankind

IUPAC Task Group Recommendations for Codes of Conduct

- **Draft elements: Chemists should ensure that:**
 - Their work is ethical and upholds the dignity, standing, reputation and integrity of the profession.
 - Scientific knowledge and technologies are used only for the benefits and betterment of humankind and the environment.
 - Their work is in accordance with the principles of sustainable development and safeguards the earth's capacity to support life in all its diversity.
 - Chemicals, equipment and facilities under their care and supervision are not used for illegal, harmful or destructive purposes.

IUPAC Task Group Recommendations for Codes of Conduct

- **Draft elements: Chemists should:**
 - Ensure the safety of and minimize risk to their fellow workers and colleagues, the general public, the environment and develop sustainable processes.
 - Ensure that their work is, and is perceived to be, adherent to or compliant with national laws and international conventions on chemicals and other related substances.
 - Cooperate with governments and organisations to identify gaps in legislation, regulations and standards, and to develop and implement new laws, regulations and standards to meet these gaps.
 - Report any misuse of chemicals and facilities for criminal and/or destructive purposes to the relevant authority.

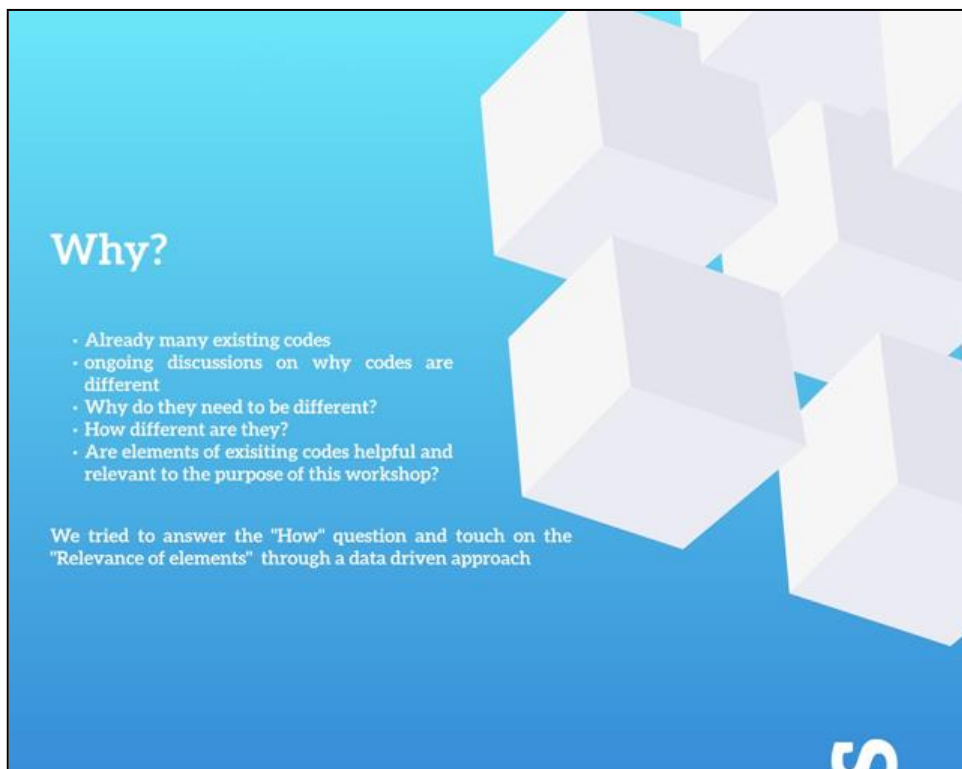
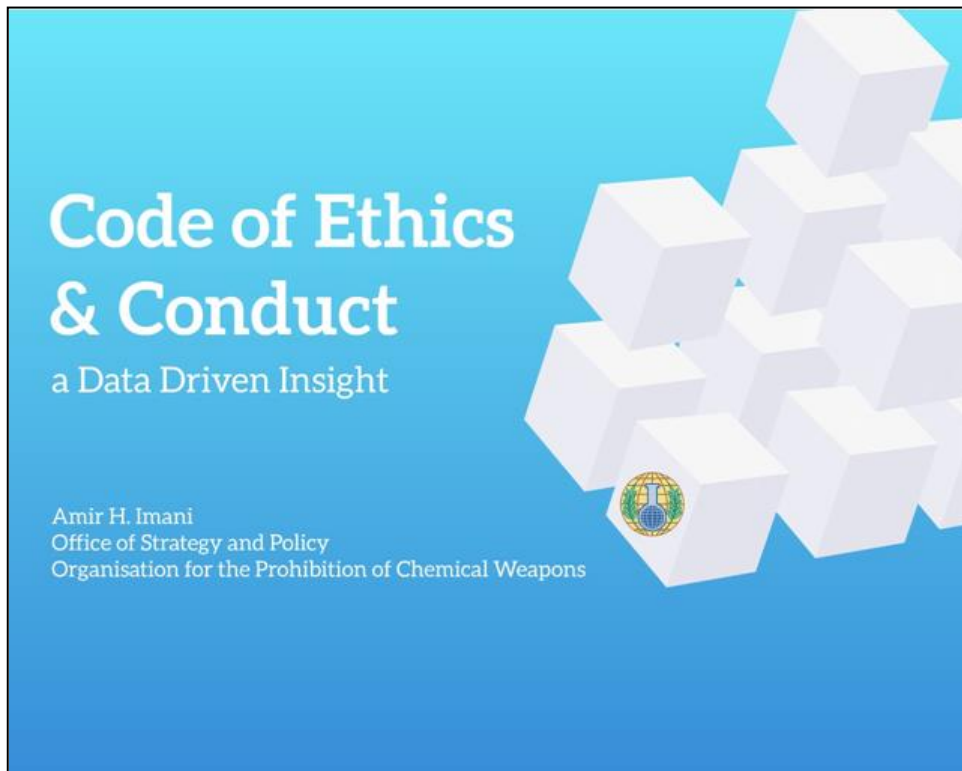
IUPAC Task Group Recommendations for Codes of Conduct

- **Draft elements: Chemists should:**
 - Update their knowledge on the latest development in the health and environmental risk of chemicals and related substances.
 - Conduct regular health, safety and security assessments of their work and facilities under their care.
 - Use their knowledge and understanding to facilitate public education, understanding and appreciation of the benefits arising from chemistry.

Acknowledgments

Prof. Graham Pearson
Prof. Sultan Abu-Orabi
Prof. Edwin Becker
Prof. Alastair Hay
Dr. Jo Husbands
Prof. Peter Mahaffy
Dr. Robert Mathews
Prof. Ting-Kueh Soon
Prof. Leiv Sydnes
Prof. Natalia Tarasova
Prof. Maria Van Dam-Mieras
Dr. Bernard West

...and many other IUPAC volunteers
...and the OPCW

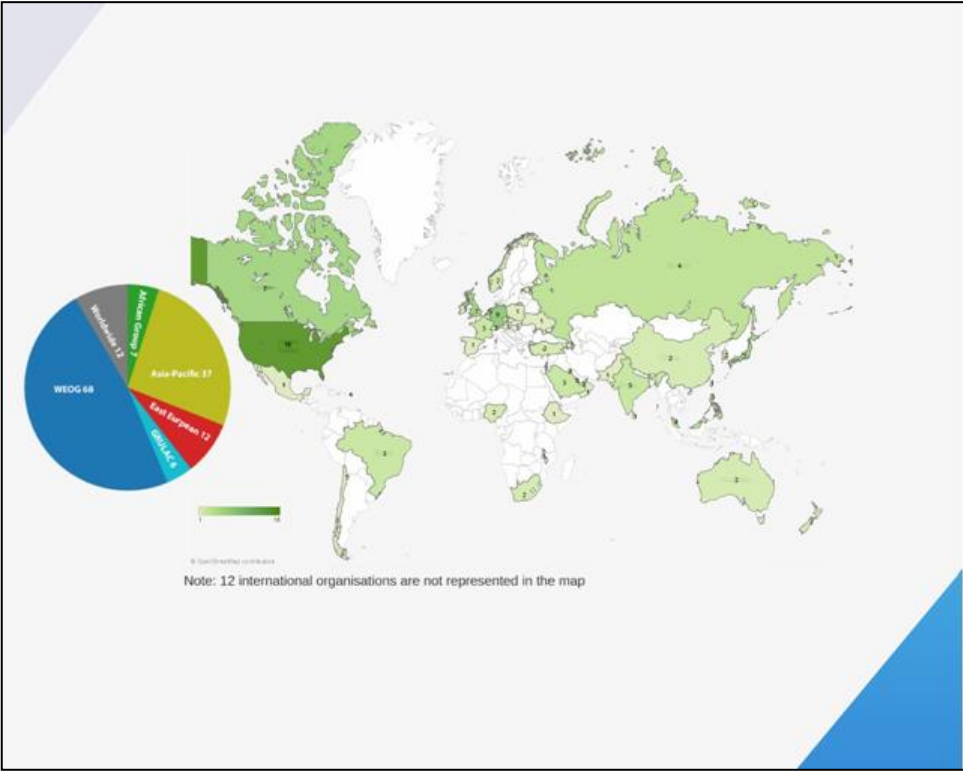


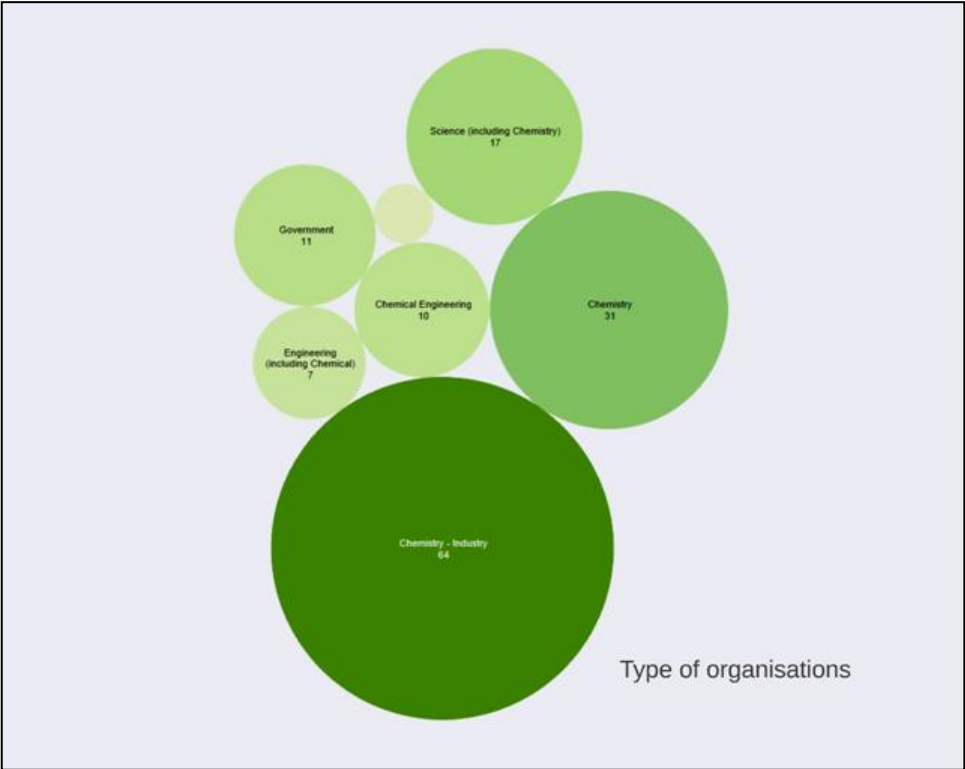


Collected Data

142 documents from 46 countries
359903 words - 9993 unique words
1022 pages for you to read!

Classifiers: Region, Type of Documents, Type of Organisation

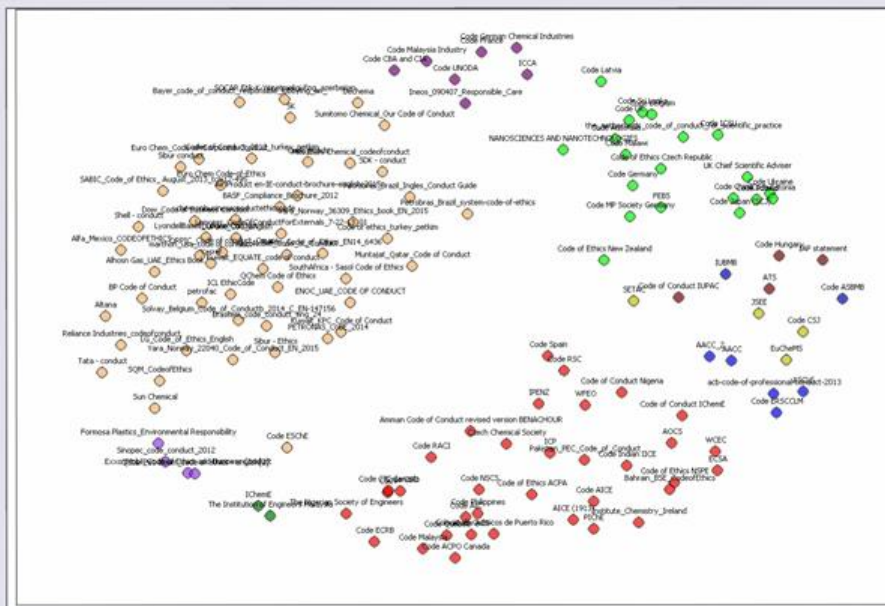


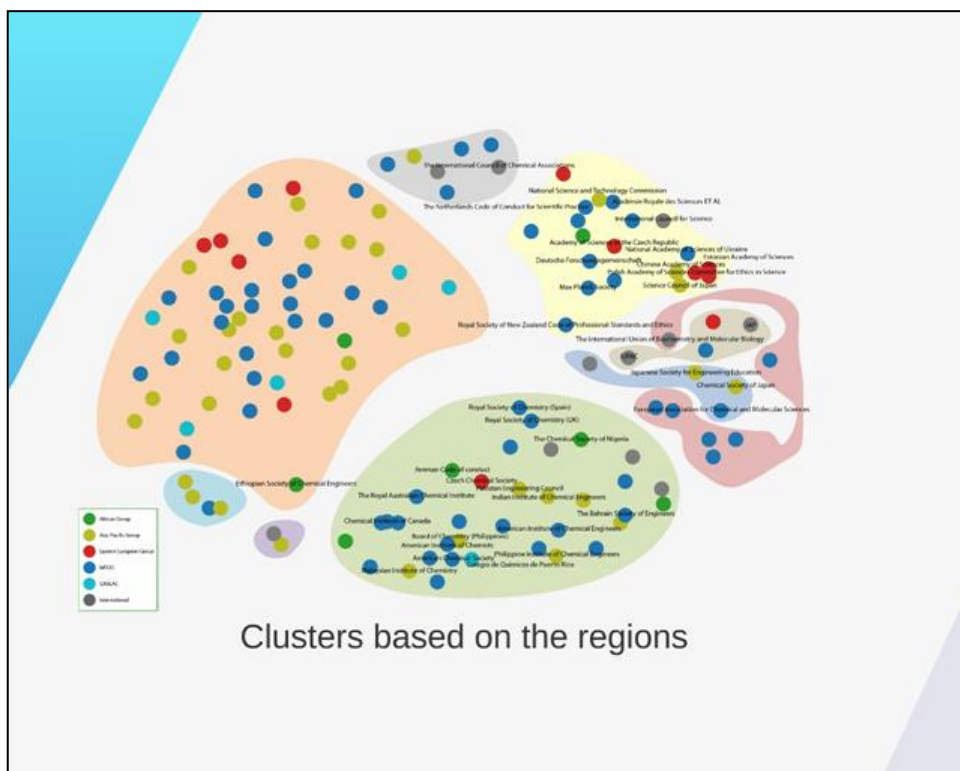
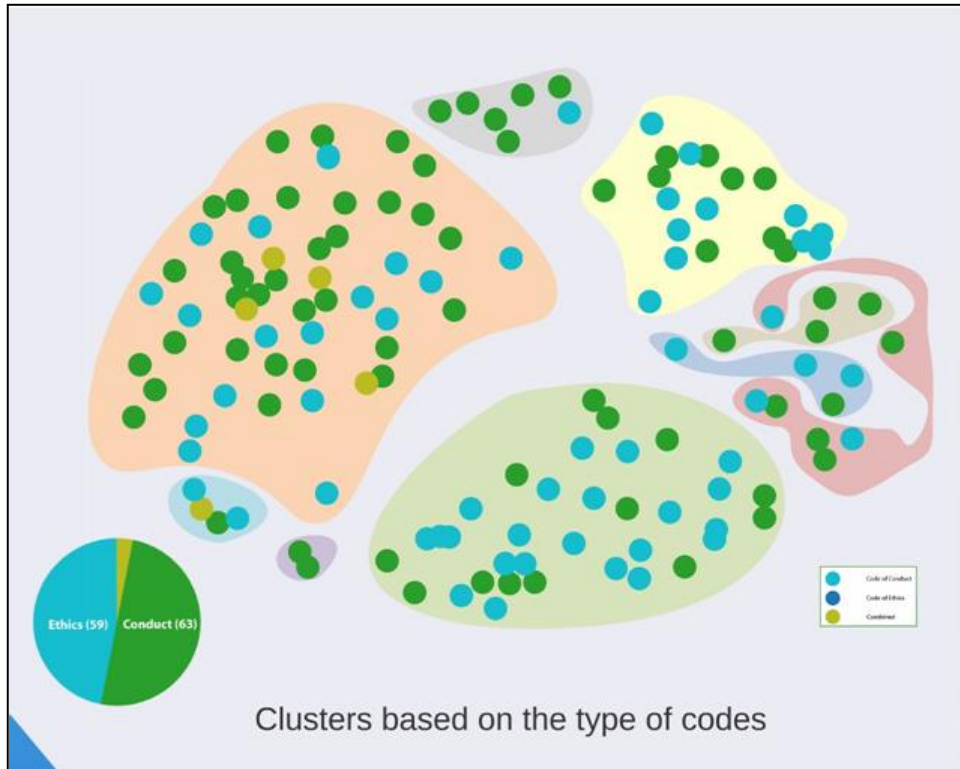


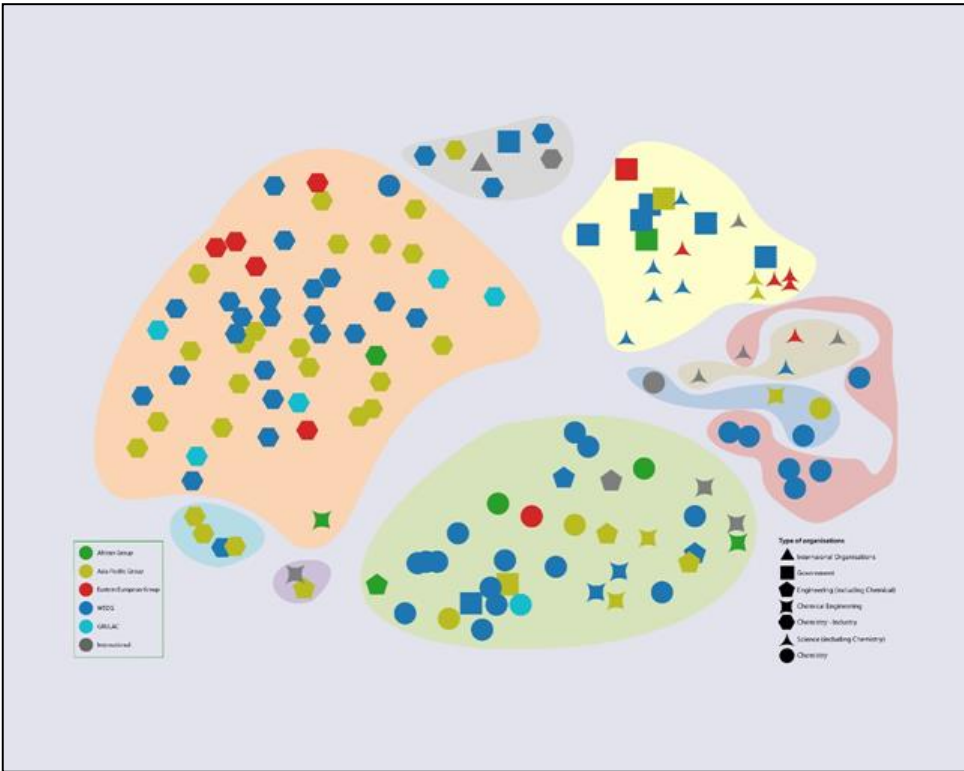
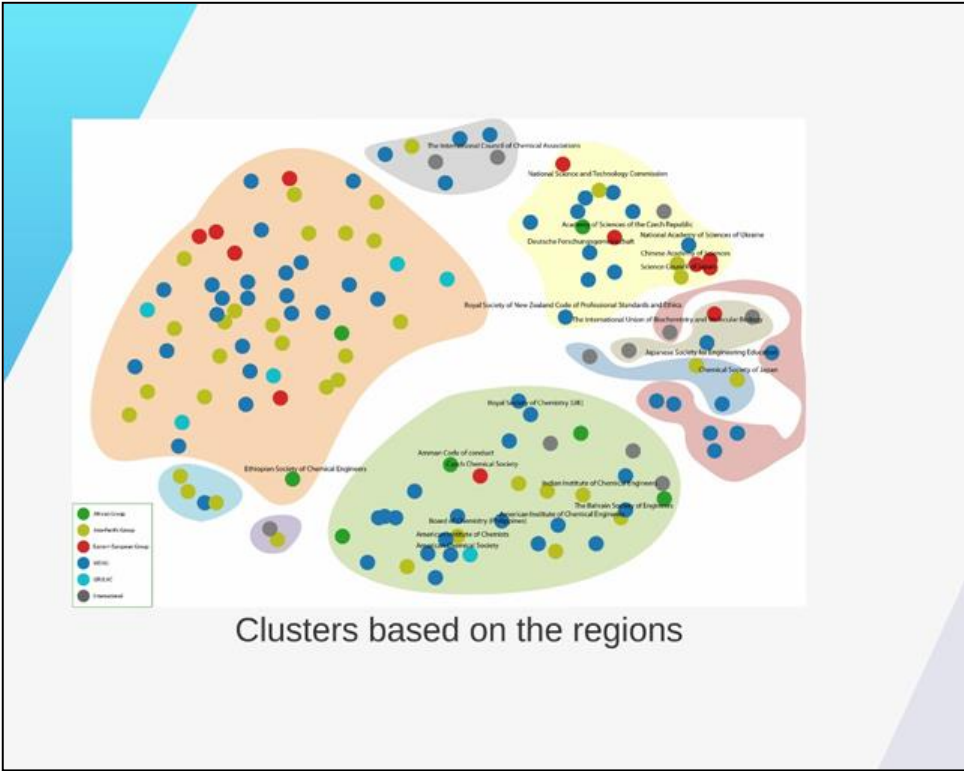
Analysis

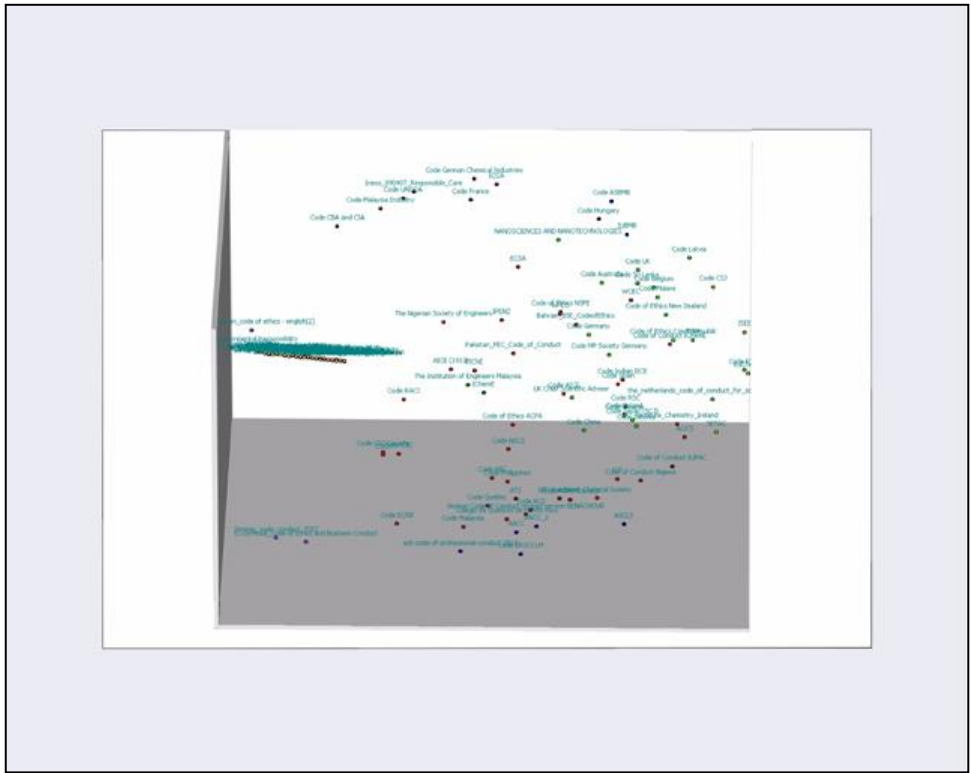


- Text mining using Provalis QDA Miner
- Text Analysis using Provalis Word Stat
 - quantitative analysis
 - Exploratory text analysis
- Data visualisation: Clusters & Heatmaps

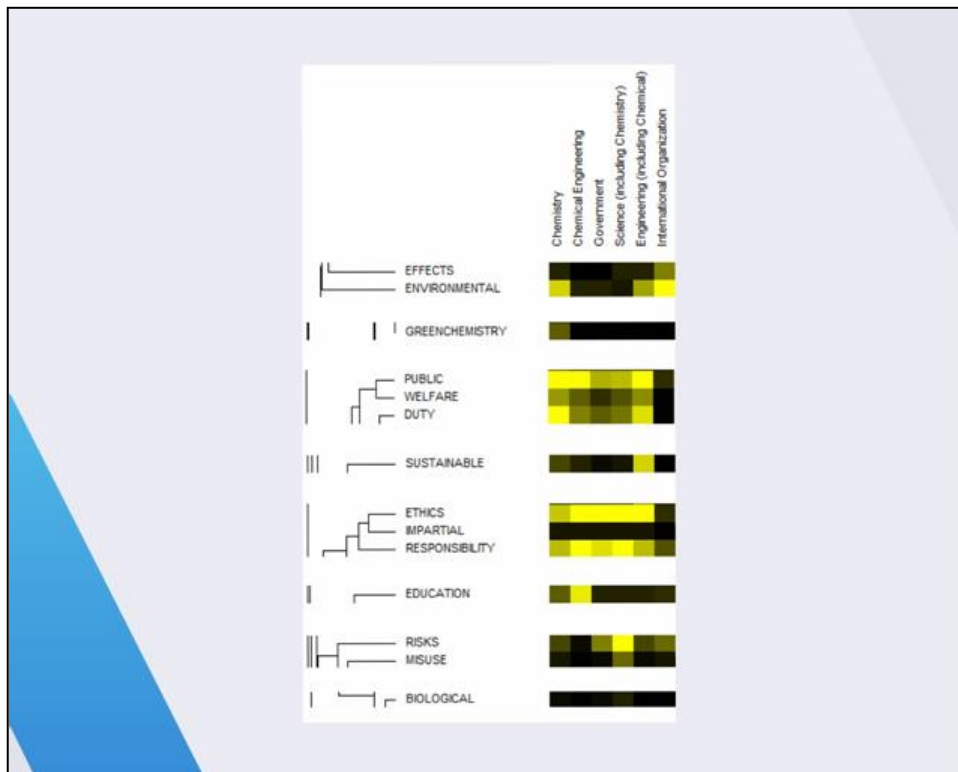






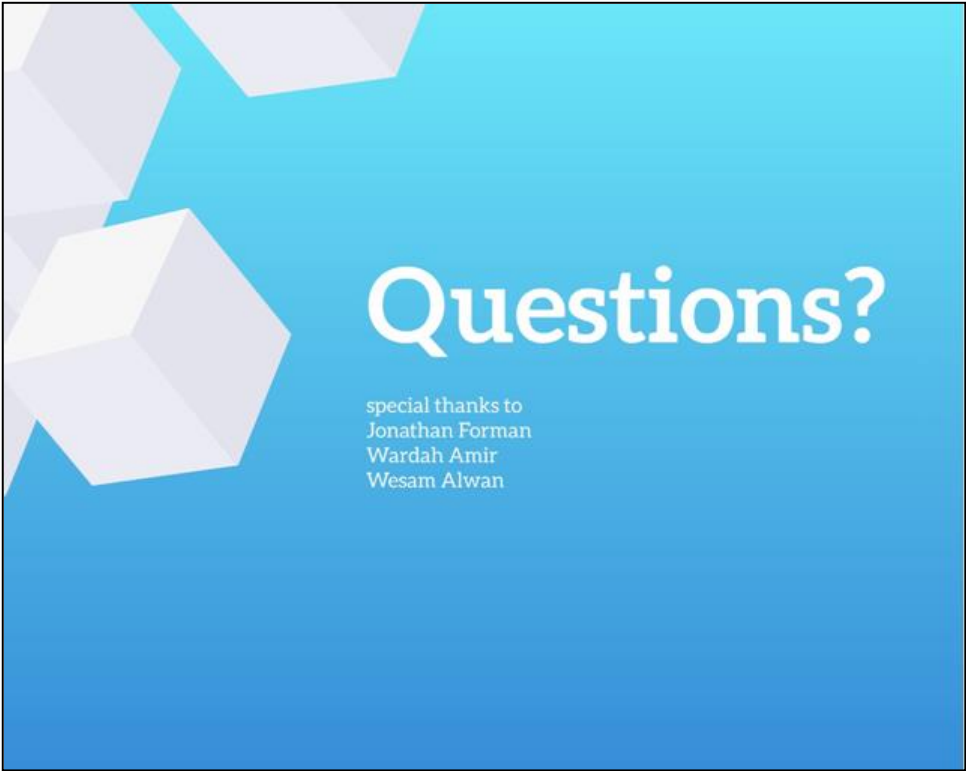


Theme	Key words	#cases	#mentions	
Responsibility	culture of responsibility	1	2	3
	responsible science	1	1	
Safety and Security	Chemical safety	2	3	16
	chemical safety and security	9	13	
Dual use	dual use	6	21	126
	misuse	34	99	
	peaceful use	4	6	
Education & outreach	Education	42	83	89
	outreach	3	6	
International cooperation	int cooperation	4	6	8
	int collaboration	2	2	
WMD	WMD	3	4	21
	EW	4	7	
	Toxins	3	6	
	CWC	3	4	
Drugs	drugs of abuse	1	1	25
	illegal drugs	12	16	
	illicit drugs	2	2	
	illicit production	2	2	
	Narcotics	2	3	
	non-medical drugs	1	1	
Green Chemistry	Environment	528	530	648
	sustainable development	18	43	
	Sustainability	23	47	
	Green chemistry	2	26	



Conclusions

- Expansive body of existing codes of conduct and ethics
- Type of organisation seems to override other classifiers in clusterings texts
- An objective data-driven analysis is beneficial to extract textual relations among available codes



Keywords in the Compiled Codes and Ethics Education for Undergraduate STEM Students
(Ms Wardah Amir, OPCW)

Keywords in the Compiled Codes and Ethics Education for Undergraduate STEM Students

Workshop on Guidelines for the Practice of
Chemistry under the Norms of the Chemical
Weapons Convention

17/9/15

Presented by:

Wardah Amir (BSc Chemical Engineering)

Office of Strategy and Policy (OSP)

Organisation for the Prohibition of Chemical Weapons (OPCW)

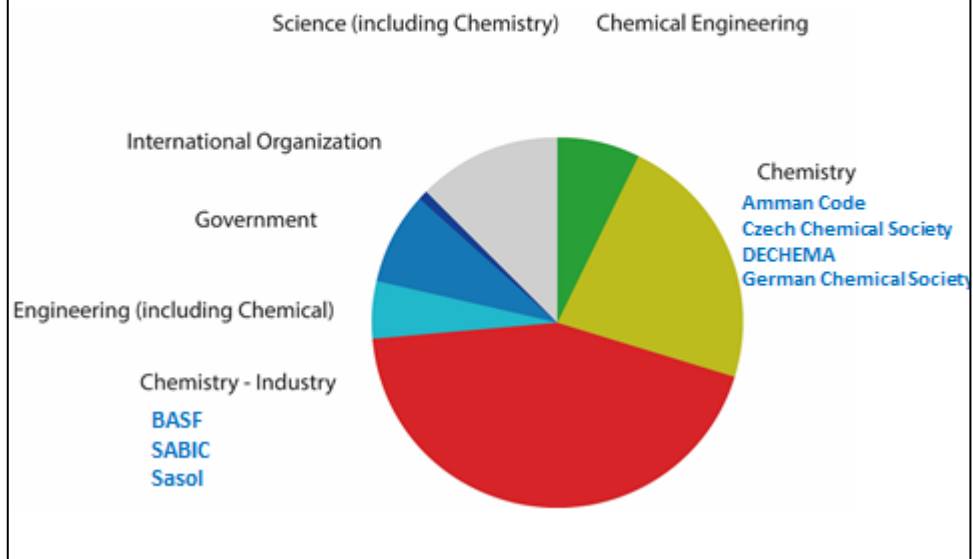
wardah.amir@opcw.org



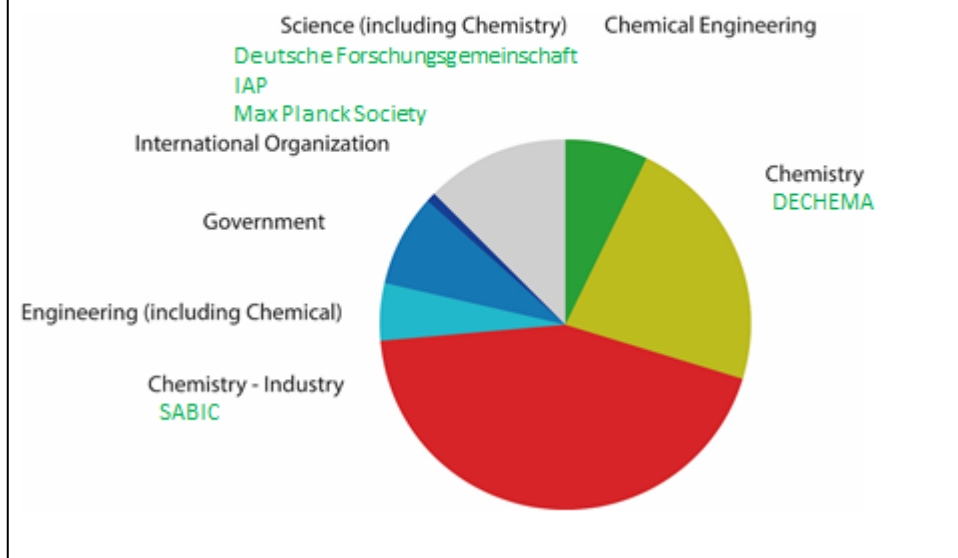
Word Cloud of Compiled Codes



Keyword: Chemical Weapons



Keyword: Biological Weapons



Ethics Education for Undergraduate STEM Students



Subject Ranking 2013-14: Engineering & Technology

<https://www.timeshighereducation.co.uk/world-university-rankings/2014/subject-ranking/engineering-and-IT#/>



<https://www.timeshighereducation.co.uk/world-university-rankings/2014/subject-ranking/engineering-and-IT#/>

What is an Ethics Course?

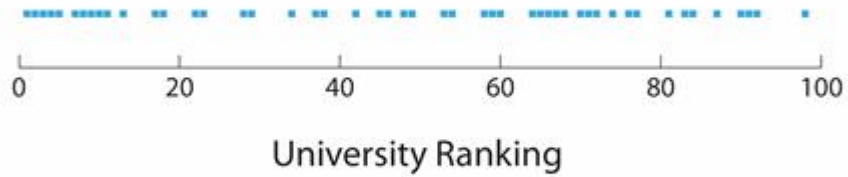
- An “Ethics Course” is being defined as a course in which the main subject matter is ethics and is delivered to a STEM audience.

An Example of an Ethics Course

- ENGR 131 – *Ethical Issues in Engineering* offered in Stanford University
 - Course Description: Moral rights and responsibilities of engineers in relation to society, employers, colleagues, and clients; cost-benefit-risk analysis, safety, and informed consent; the **ethics** of whistle blowing; **ethical conflicts** of engineers as expert witnesses, consultants, and managers; **ethical issues** in engineering design, manufacturing, and operations; **ethical issues** arising from engineering work in foreign countries; and **ethical implications** of the social and environmental contexts of contemporary engineering. Case studies, guest practitioners, and field research.

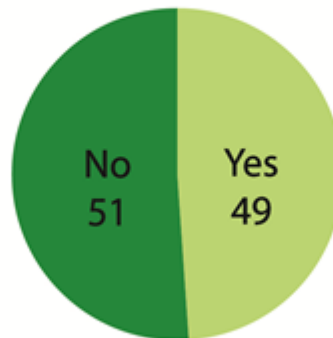
<http://explorecourses.stanford.edu/search?q=ENGR+ethics&view=catalog&academicYear=&catalog=&page=1&filter-coursestatus-Active=on&collapse=>

The Top 100 Universities that Offer Ethics Courses

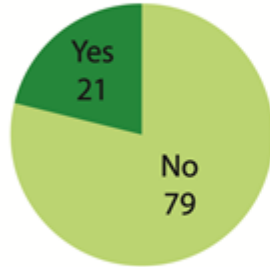


<https://www.timeshighereducation.co.uk/world-university-rankings/2014/subject-ranking/engineering-and-it#/>

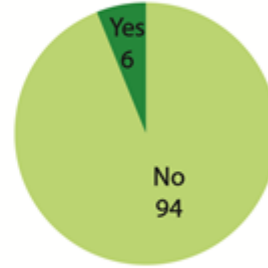
Does the university offer an ethics course for STEM students?



Does the university offer an ethics course through the Chemical Engineering or Chemistry Departments?

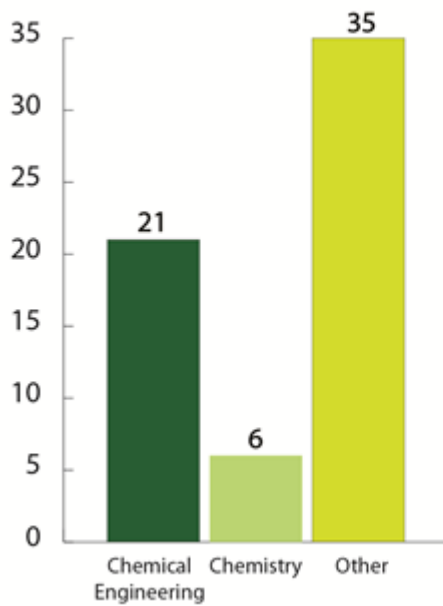


Chemical Engineering



Chemistry

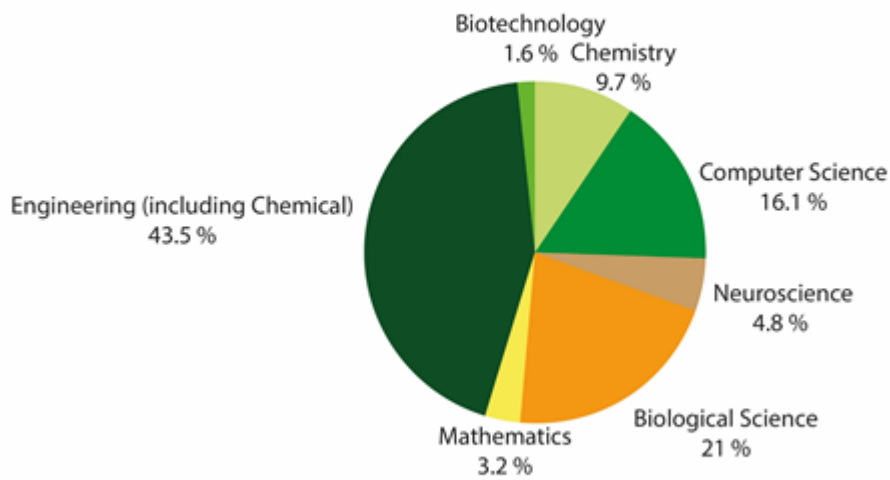
Breakdown of Ethics Courses



Total number of universities that offer ethics courses = **49 universities**

Total number of ethics courses across all universities = **62 courses**

Breakdown of STEM fields that offer Ethics Courses



This data shows the breakdown between STEM disciplines of the 62 ethics courses offered in the 49 universities that offer ethics courses.

Conclusion

- Across the top 100 universities
 - 49 universities offered ethics courses for undergraduate STEM students;
 - 62 ethics courses were offered to undergraduate STEM students.
- Increasing multidisciplinary interaction between the “non-scientist” and the “scientist”.

Special thanks to:


Dr. Jonathan Forman (OSP)

Mr. Wesam Alwan (OSP)



Follow us on Twitter @OPCW_ST

Education and Outreach at the OPCW and its Connection to Codes of Ethics (Mr. Joseph Ballard, OPCW)



ORGANISATION FOR THE
PROHIBITION OF CHEMICAL WEAPONS

Working together for a world free of chemical weapons


Education and Outreach - where do ethical guidelines fit in?

Office of Strategy and Policy
OPCW

September 2015

www.opcw.org

1



ORGANISATION FOR THE
PROHIBITION OF CHEMICAL WEAPONS

Working together for a world free of chemical weapons

Context

- 90% of CW destroyed as of May 2015
- Shift of focus: from destruction to prevention
- Measuring achievements through absence of production
- Strengthening existing activities and building broader partnerships
- Recognition of E&O as a core activity

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2



US official: 'IS making and using chemical weapons in Iraq and Syria'

By Paul Blake
BBC News, Washington

© 11 September 2015 - US & Canada

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Islamic State forces control large swathes of territory in Syria and Iraq

in August approving a joint
tion of Chemical Weapons



short URL

warfare experts warn. Bombs containing chlorine are said to be the "chemical weapon of choice" for terrorists.



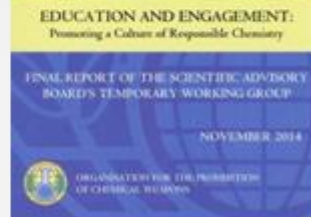
3rd Review Conference recommendations

1. "Encouraged the Secretariat, in concert with the SAB temporary working group on education and outreach, to assist States Parties, upon request, in implementing education and outreach activities, including by disseminating materials, conducting workshops and regional meetings "	2. "Encouraged the Secretariat to continue to develop relationships and partnerships with other relevant bodies, national and international, that are working to promote the peaceful and responsible use of chemistry , including capacity building"
3. "Encouraged the Secretariat to continue to develop relations and partnerships as appropriate with relevant regional and international organisations, as well as chemical industry associations, the private sector, academia, and civil society, in order to raise awareness of the activities of the OPCW "	4. "Called upon SPs and the TS, as part of efforts to promote the ethical norms of the CWC, 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"



Final report by the SAB-TWG

- TWG on Education and Outreach (E&O) met 4 times at OPCW (2012 – 2014)
- The final report contains 7 recommendations regarding the sustainability of OPCW E&O efforts
- **Key recommendations:**
 - E&O should remain core activity and receive increasing visibility and sufficient resources
 - Evidence-based approach: active learning strategies, clarity about purpose and audience (disarmament, culture of responsibility, CW and the CWC)
 - Expert advisory group with respect to the responsible use of science relevant to CWC should be established



Advisory Board on Education and Outreach

- Broad mandate, bringing specialist expertise the TS does not have
- Advise the DG and SPs (on request) on all aspects of education and outreach relevant to the CWC
- Ensure that education and outreach activities are effective, sustainable, cost-effective, and benefit from the latest advances in education and outreach theory and practice
- Provide strategic guidance
- Details in the DG Note (EC-79/DG.11) and the draft decision (EC-79/DEC/CRP.4)



Educational Sector Activities

- **Documentaries** "Fires": profiling individuals with personal stories about chemical weapons, warfare, and disarmament
- **Website** on Multiple Use of Chemical Weapons: developed in consultation with scientists, piloted at workshops for chemists and educators (case studies and role-play scenarios)
- **Educational module** "Chemistry in Conflict" (teacher's guide): 4 chapters on CWs, the CWC, ethics of CW development, and protection against CW.



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Partnerships: the scientific community and industry

- International Union of Pure and Applied Chemistry (IUPAC)
- American Chemical Society (ACS)
- International Council of Science (ICSU)
- International Council of Chemical Associations (ICCA)



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Recent developments

- Education and outreach funding in 2015 and in draft 2016 programme and budget
- Pilot national projects on E&O with certain SPs, supported by TS and TWG
- WWI centenary event – April 2015
- Education and outreach event back to back with the Regional Meeting of NA in Asia and Africa (May in China and June in Algeria)
- Education and outreach as a topic for discussion at the Regional Meetings of NA in EE and GRULAC (May in Slovenia and June in Panama)
- Advisory Board on Education and Outreach to start functioning in early 2016



Vision 2025: indicators of achievement

- Promoting responsible science through appropriate means, including interaction with scientific societies and inclusion of the relevant issues into national school and university curricula
- A formal network of cooperation with the science and technology community relevant to the CWC has been established
- The OPCW further institutionalises its relationship with the chemical industry globally, through proactive engagement and common projects
- Relationships with international organisations and mechanisms have been enhanced to achieve common goals in support of the CWC
- The OPCW holds a major biannual engagement event to draw on the knowledge and expertise of NGOs, think tanks, academia, the science and technology community, and the chemical industry



Informal Briefing for Delegations (Professor Alejandra G. Suárez, Dr Jo Husbands, Professor Alastair Hay)



PROPOSAL

From CSP-19 Final Report (C-19/5, Dated 5 December 2014)

The Conference **welcomed** the initiative for a text of ethical guidelines for chemical professionals related to the Convention and **invited** the Secretariat to inform the Council of its efforts for the advancement of the initiative and its objectives in close collaboration with relevant professional and chemical industry organisations. The Conference **encouraged** States Parties to discuss the matter further. (*paragraph 22.3*)

Purpose of This Workshop

Starting from a draft document and proceeding based on participant inputs, we developed a set of ethical guidelines on the practice of chemistry under the norms of the Chemical Weapons Convention.

This text is a product of our workshop.

BACKGROUND

Workshop on Guidelines for the Practice of Chemistry under the Norms of the CWC

11 March 2015 at the OPCW, Headquarters in The Hague

OBJECTIVE: discuss an initiative to develop a text of ethical guidelines for chemical professionals related to the CWC



18 Participants from the chemical community: academics, scientists, representatives from the chemical industry, chemical associations.



TOPICS ADDRESSED:

- ✓ **Analysis of previous and current initiatives (work):**
 - Existing codes and guidelines
 - IUPAC
 - Other chemical associations
- ✓ **Experiences from the BTWC**
- ✓ **The Chemical Industry Perspective**

Three key issues were addressed in breakout groups

- **Key elements of CWC relevant ethical guidelines**
- **Principles and best practices for drafting guidelines**
- **Synergy with other current initiatives**

Agreed a process to move forward

- **Final report of the March workshop to be drafted**

https://www.opcw.org/fileadmin/OPCW/SAB/en/March_2015_Ethical_Codes_Workshop-Report.pdf

- **Subgroup of original participants have been appointed to draft key elements of Ethical Guidelines under the norms of the CWC (Steering Committee)**

- **All participants will review and provide feedback on the Draft of Ethical Guidelines.**

The reviewed draft was distributed

Workshop on Guidelines for the Practice of Chemistry under the Norms of the CWC

17-18 September 2015, OPCW Headquarters, The Hague



33 Participants from the chemical community from different regions of the world

AIMS

✓ **Bring together stakeholders across the chemical sciences to discuss and agree upon text that can be used as guidelines in the development or updating of codes of ethics**

OBJECTIVES

- ✓ **A consensus text Ethical Guidelines under the norms of the CWC.**
- ✓ **Recommendations for how it would be used.**

Breakout Groups

- **Group 1**
 - Core element
 - Sustainability

- **Group 2**
 - Awareness
 - Education

- **Group 3**
 - Safety and Security
 - Oversight
 - Accountability

- **Group 4**
 - Moving forward and synergies with other initiatives

WORKSHOP DOCUMENT

The Future

- We will invite the practitioners of chemistry and their professional societies to review this document and consider its content with a view to incorporating in their own codes elements and concepts that support the CWC.
- OPCW, State Parties interaction?

**Working Toward
A World Free of
Chemical Weapons**



**A Safer World
For the Future**