Temporary working groups of the OPCW Scientific Advisory Board – history, impact and introduction of the next TWG

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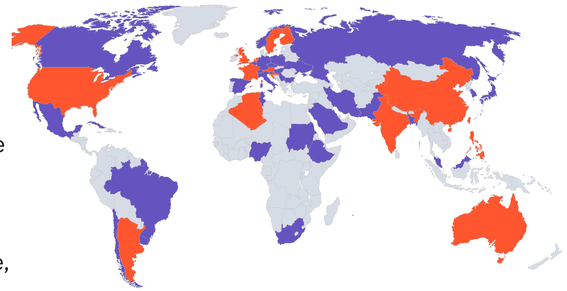
Temporary working groups

The OPCW Scientific Advisory Board (SAB) is responsible for monitoring developments in science and technology of relevance to the Chemical Weapons Convention (CWC) and the work of the OPCW, and it adopts an understandably broad-brushed approach to do so. Specific topics warranting further in-depth review may be the subject of a temporary working group (TWG), established at the Director-General's request.

These groups meet multiple times over a specified timeframe (often two years) and include both Board members with relevant expertise and additional external experts. Every TWG is guided by specific terms of reference which are developed by the Director-General in consultation with the chairperson of the TWG. At the end of its time-bound mandate, the TWG's findings and recommendations are presented to the SAB and considered by the Director-General.



2011 – 2013 — **Convergence of Chemistry and Biology**
The first TWG was tasked with understanding implications of chemistry-biology convergence on the CWC's implementation. Experts addressed, inter alia, biologically mediated chemical production, chemical synthesis of biologicals, biotechnologies, and benefits of convergence to the CWC.

2012 – 2014 — **Education and Outreach**
The second TWG proposed activities, for implementation by the OPCW and States Parties, to improve CWC-relevant chemistry education and science outreach, an integral component of preventing the re-emergence of chemical weapons.

2013 – 2015 — **Verification**
The application of current and emerging technologies, methodologies, and equipment in verification activities (such as declarations and sampling and analysis) was explored in depth. Remote and automated monitoring equipment, satellite imagery, and open-source information were considered.

2018 – 2019 — **Investigative Science and Technology**
Increasing numbers of investigations with a forensic component led to the establishment of this TWG which reviewed methods and technologies used for investigative work relevant to the OPCW.

2021 – 2023 — **Analysis of Biotoxins**
The science and technology relevant to biotoxin analysis was reviewed and considerations for investigations of their alleged use were identified. The TWG identified 9 biotoxins it considers most relevant in this context.

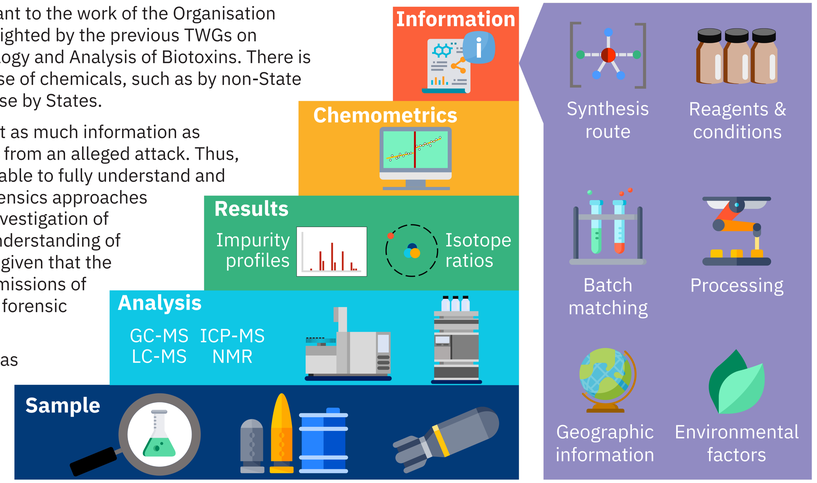
TWG on Chemical Forensics

17 members | **15** States Parties represented | **10** external experts | **7** current SAB members | **10** women | **7** men

Chemical forensics is highly relevant to the work of the Organisation and its importance has been highlighted by the previous TWGs on Investigative Science and Technology and Analysis of Biotoxins. There is growing concern around the misuse of chemicals, such as by non-State actors, as well as more targeted use by States.

It is more important than ever that as much information as possible be derived from samples from an alleged attack. Thus, it is imperative that the OPCW be able to fully understand and harness the utility of chemical forensics approaches and use validated results in any investigation of misuse of a chemical. A deeper understanding of chemical forensics is also crucial, given that the OPCW is increasingly conducting missions of a non-routine nature, often with a forensic component.

The TWG on Chemical Forensics has a two-year mandate and started its work on 1 January 2024. During this time, it will address a number of questions relating to four key areas.



AREAS

1. **Current state of the art**
Particular focus on a sample's life cycle and application to containers and other agents

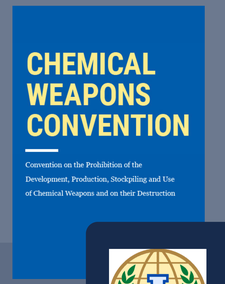
2. **Methods and procedures**
Consideration of reproducibility, starndardisation, best practices, and informaiton sharing

3. **Future capabilities**
Relating principally to the impact of machine learning and large dataset usage

4. **Augmenting the OPCW's capabilities**
Leveraging knowledge to build the OPCW's chemical forensics capabilities

Chemical Weapons Convention

Entering into force in 1997, the **Chemical Weapons Convention** is the world's first multilateral disarmament agreement to eliminate an entire category of weapons of mass destruction.



OPCW

The Organisation for the Prohibition of Chemical Weapons (OPCW) is the implementing body for the Chemical Weapons Convention, and **oversees the global endeavour to permanently and verifiably eliminate chemical weapons**.

The OPCW Technical Secretariat is headquartered in The Hague, The Netherlands, and works with governments and other partners to carry out verification activities worldwide.

Science underpins the Convention

The Chemical Weapons Convention is underpinned by science. This is reinforced by the inclusion in the treaty of language requiring the **constant monitoring and review of developments in science and technology to understand their impact** on the CWC and the OPCW, as well as States Parties' ability to implement its provisions.

100%
All chemical weapons stockpiles declared by possessor States have been verifiably destroyed

193
193 nations have committed to the Chemical Weapons Convention

The OPCW received the 2013 Nobel Peace Prize for "extensive efforts in eliminating chemical weapons"

Investing in science and technology

OPCW Member States have confirmed their ongoing commitment to the Convention and the importance of science and technology with the construction of the new Centre for Chemistry and Technology. The ChemTech Centre will support the OPCW's **essential verification and inspection activities and become a global knowledge-sharing hub.**

Keeping pace with scientific and technological change

The SAB is a group of **25 independent experts** from all geographic regional groups. The SAB **provides specialised advice** to the Director-General, and by extension States Parties to the Convention, in monitoring developments in science and technology of relevance to the OPCW and the CWC.

The SAB has a focus on monitoring emerging technologies, converging technologies, and disruptive technologies. The SAB also leads temporary working groups to draw upon **extended expertise on specific scientific issues of relevance to the Convention.**