

## **IUPAC Contributes to Global Chemical Safety by Training Leaders in Developing Countries**

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A long-term key goal of IUPAC has been to build chemistry-based capacity in developing countries. This involves actively pursuing a better understanding of chemistry and training people throughout academic institutions, industries, governments, and the public.

There is a focus on safety and security management of chemicals world-wide. The chemical industry, through the International Council of Chemical Associations (ICCA) Responsible Care Process is working with the Strategic Approach to International Chemicals Management (SAICM) to improve safety practices. The ICCA companies are approaching this by focusing on introducing the Responsible Care process in developing economies and are currently concentrating on African countries. IUPAC supports the ICCA via IUPAC's Committee on Chemistry and Industry's Safety Training Program and because IUPAC and ICCA have congruent goals to build safety and security capabilities.

Managing chemicals and pharmaceuticals safely and securely has always been an issue and has become even more important in the last few years. The chemical industry has had a major focus on safety and security for decades, in the developed world it is very safe to work in the industry compared to other industry segments. The ICCA report card shows the reduction in injuries over the last decade.

[https://www.youtube.com/watch?time\\_continue=96&v=wUrcwFvh0IY](https://www.youtube.com/watch?time_continue=96&v=wUrcwFvh0IY). There are, however, gaps in safety and security practices not only in the developing areas of the world, but also in the academic and government laboratories in more highly-developed economies.

IUPAC identified the need for personnel training and the encouragement of capacity building in facilities and together with a change in attitudes to help to improve both safety and security. The IUPAC Committee on Chemistry and Industry (COCI) initiated a Safety Training Programme (STP) in 1993. It was re-established and re-vamped in 1999 by Dr. Mark Cesa and continues through to today.

The goal of STP is to encourage mid-career chemists and chemical engineers who have leadership potential and are working in a supervisory or managerial level in chemical companies, governmental or scientific institutions/universities in developing countries to apply for an STP Fellowship.

Once accepted as being eligible for this STP Fellowship training, the trainee then spends two to three weeks on-site for safety, environmental protection and security training at a Chemical, Pharmaceutical or Biotechnical Research and Production company [the Host] with expertise in safety, environmental protection and security practices. After training, the trainee submits a detailed report to the STP Coordinator and, if accepted, is designated a COCI “STP Fellow”. The STP Fellow is expected to use the knowledge gained to provide leadership and help improve the safety and security performance of the Chemical and/or Pharmaceutical Industry in their home territory, not only in their specific workplace, but also more broadly throughout academic institutions, industries, governments, and the public.

Six STP Fellows from a broad range of developing countries have shown excellent efforts in their follow up activities. Their updated profiles are highlighted on the IUPAC website (<https://iupac.org/who-we-are/committees/committee-details/safety-training-program-fellows/>). These STP Fellows are: Dr. Ahmed Youssef of Egypt (2015 STP Fellow); Ms. Christine Ashaolu of Nigeria (2015 STP Fellow); Mr. Steve Nyamori of Kenya (2017 STP Fellow); Dr. Gursharn Grover of India (2008 STP Fellow); Prof. Fabian Benzo of Uruguay (2007 STP Fellow) and Ms. Esma Toprak of Egypt (2000 STP Fellow). The four main themes that run through these STP Fellows’ accomplishments are:

1. Enthusiasm
2. Equipment upgrading
3. Awareness building
4. Government / Institutional regulations and procedures with teeth.

The Safety Training Programme is publicized in magazines and by support groups in order to have individuals apply for a STP Fellowship. There is an application form on the IUPAC website. This, along with a CV and reference letter, is sent to the STP Coordinator. Applications are vetted and if approved by COCI the applicant becomes eligible for STP Fellowship training. Host companies are then sought out and choose from the list of eligible STP Fellow candidates. The training is organised at a mutually agreeable time for two to three weeks. The trainee prepares a detailed report on the training and proposes a list of follow-up actions that they will accomplish at home. Once the initial report is received and approved by the STP Coordinator and COCI Chair the trainee is designated a COCI “STP Fellow”. Reports can be seen on the web site ( <https://iupac.org/who-we-are/committees/committee-details/safety-training-program-fellows/>).

Among the latest changes to the programme is regional training in Latin America for STP Associate Fellows in local languages. The first STP Latin American regional training course was held in Uruguay in Spanish in October 2016, led by the 2007 STP Fellow, Professor Fabian Benzo. It continued in 2018 with a second STP-LA Associate Fellow course in Uruguay. The STP-Indian regional training involves several safety orientation presentations led by 2008 STP

Fellow, Dr. Gursharn Grover. In the future there are plans to build a STP regional training in Kenya and other parts of Africa.

A COCI STP Workshop at which STP Fellows are invited to speak about their progress and accomplishments since their training is held at the Biennial IUPAC General Assembly. As of early 2018, nineteen STP Fellows and four STP Associate Fellows from eleven countries in Africa, India, China and Latin America have been trained. More host companies are currently needed to participate in training of STP Fellow candidates. Please contact the current STP Coordinator ([STP@IUPAC.ORG](mailto:STP@IUPAC.ORG)) if you would like to know more.

The following figure shows the 2018 geographic distribution overview of the locations of the Host Companies and STP Trainees since the program was started in 1993.

#### Fellows, Associate Fellows and Host Companies



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