

Committee on Chemistry Education Newsletter



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Newsletter

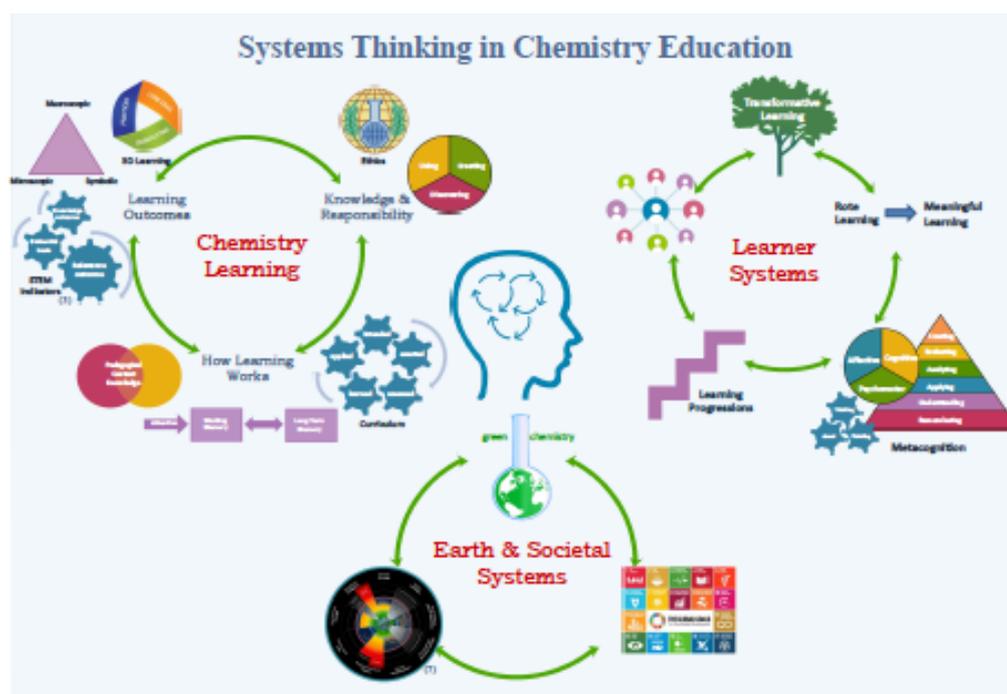
This newsletter is for all people taking an interest in the activities of the Committee for Chemistry Education. Anybody can submit text for the newsletter, which will appear two to four times each year. It will provide information about the state of activities of the CCE between the formal meetings of the committee.

Projects

CCE is involved in two projects at the moment. Two more will be started in the near future.

The first project is the project about systems thinking in Chemistry Education. In this project Chemistry Education is described as a system, with three different components

*Systems Thinking in
Chemistry Education*



Chemistry Learning, through teacher activities, Learner Systems, through knowledge about learning, and Earth & Societal Systems, particularly the 17 Sustainable Development Goals.

In Sydney, several people reported about this project. The deadline for the special issue in the *Journal of Chemical Education* is January 31st 2019 (<http://doi.org/10.1021/acs.jchemed.8b00764>). In Paris, the project will report further about its progress.

The International Year of the Periodic Table

The Periodic Table Challenge is the second project CCE is involved in. The website with the challenge will go live on January 8, 2019. The challenge will have two rounds, the first one will consist of an on-line quiz with 20 multiple choice questions. A participant has 60 minutes to answer the questions so will have time to consult internet resources, and that way learn interesting facts about the elements in the periodic table. A participant scoring more than 60 % of the questions correctly can proceed to the second round. This round has been dubbed 'the Nobelium round'. In this round participants are asked to make a product that demonstrates why a particular element is special to them. This product may be a short story, a painting, or some type of object. The products will be displayed on the website. There will be a jury, as well as a popular vote for this round.

More information about the International year of the Periodic Table can be found at:

www.iypt2019.org

www.iupac.org/100

YAC and FCEP

Both the YAC and the FCEP are flagship activities for CCE. In the past, they have been used to develop and stimulate chemistry education. More information can be found on our website:

<https://iupac.org/body/050>

The organization of a Young Ambassadors for Chemistry event in September 2019 in Ulang Bator Mongolia is in progress. Another one will be organized connected with the ICCE in Cape Town. Congratulations to Masahiro Kamata, and Uday Matrai for organizing these events. The type of experiments may change from the production of cosmetics, but the idea of outreach to the general public, as well as the use of locally available products is still part of the starting points

Together with the Interdivisional Committee on Green Chemistry for Sustainable Development, led by Pietro Tundo, a Flying Chemistry Education Program will be organized about the development of a green chemistry program at the university of Ulang Bator, Mongolia.

Meeting with OPCW

OPCW (Organisation for the Prohibition of Chemical Weapons) is an organization which is ruled by an assembly of State Parties, a type of council, in which ambassadors from each participating country have a seat. This meeting is dedicated to the overview of what happened last year, but also hosts a series of side events, of which the IUPAC presentation was one.

Between 19 and 23 November OPCW had its yearly review conference. IUPAC was invited and participated with a large delegation of officers from all divisions and committees. IUPAC hosted one event in which IUPAC presented itself to OPCW.

OPCW has a technical staff, that is able to take samples in the field. The samples are analyzed in different labs around the globe. In the field measurements are made as well, in order to determine the best place to take samples.

Meeting with OPCW

OPCW also oversees the disposal and destruction of stocks of chemical weapons. It keeps a list of chemicals which cannot be traded unless they are registered with, and approved by OPCW. Individual countries will consult with OPCW through their customs and trade departments.

Within OPCW there exists several bodies. One is the Science Advisory Board which advises the Director General, the head of the daily management of OPCW, about technological and analytical advances. There is also an Advisory Board for Education and Outreach (ABEO), the permanent successor to the Temporary Committee on education and Outreach, of which Peter Mahaffy and I were members.

I have had face to face discussions with Alexander Kelle, the secretary of the ABEO. I discussed the possibilities of cooperation between CCE and OPCW in the organization of workshops on education, connected to the regional workshops, that OPCW organizes for its members. Mark Cesa is the IUPAC representative on the ABEO. Late February 2019 the ABEO will meet, and I may be asked to come and discuss this idea further.

I also met with Alastair Hay, a member of both the temporary committee as well as the ABEO about the same subject. Alexander was very active with Peter Mahaffy in establishing the Multiple Use of Chemicals website, <https://multiple.kcvs.ca/>

Together with Richard Hartshorn I met with Deepty Choubey, head of OPCW public affairs. This group is developing short videos, to be published on youtube, about the work of OPCW. We saw a video about the kit used for taking samples in the field. This demonstrated the use of the kit and was very clear and illuminating. There will be a total of 4 of these videos and they would like to receive our feedback on their usefulness.

Regional Workshops

Regional workshops

One of the ideas that came up during our meeting in Sydney was the organization of regional workshops about education. Other organizations, like the research group on the gender gap, have organized such workshops successfully. The idea is to find a representative in a country, who is able to organize such a two or three-day meeting at low cost, in preferably his or her own institution. The workshop should take place over the weekend, so teaching duties will not interfere with attending such a workshop.

For the workshop, 30 to 40 key-people from surrounding countries will be invited to take part. The attendees should be stakeholders in the development of education within their own country, and preferably be teachers as well.

When people are coming from surrounding countries travel cost will be low.

Focus of the workshops

The focus of the workshop will be on the biennial goals as formulated by the CCE. CCE will provide people to give the workshops, and to moderate the discussion. One of the outcomes could be the development of a Professional Learning Community of Teachers in the region.

Cooperation

The CCE seeks cooperation for the organization of these workshops. Both OPCW and UNESCO seem to be logical partners for this type of workshops.

OPCW is also focusing on '*raising awareness, social responsibility, and understanding the nature of science as well as of environmental and ethical issues that are related to chemistry*'.

OPCW has experience with the organization of regional workshops in several areas in the world. The workshops of OPCW could be extended to incorporate the workshops focusing on education and outreach, as discussed above.

Some of the technology of OPCW used in determining whether certain substances are present in the environment, might be used in education. In the discussion with Alexander Kelle, the official secretary of the Advisory Board on Education and Outreach, the suggestion was made that this could be combined with a training of custom officials that OPCW organizes regionally.

UNESCO has a network of people active in education in each country and can help identifying key persons to participate in these workshops. UNESCO has Open Educational Resources that may be used as material during the workshops.

All three organizations may contribute towards a travel fund that will enable people with limited access to funds, to attend.

Try outs

In order to try out the possibilities and effect of these workshops, three should be organized in different parts of the world. (South East Asia, the Balkans as well as Eastern Africa seem to be possible regions to find out the effect of the workshops.) Preparation for the regional workshops should take about a year, so the first one might take place late 2019 or early 2020. In July 2019 we will need to discuss the nature of these workshops further.

Chemistry Teacher International

By now we have 21 articles submitted for the first year. I have rejected one directly. The others are in the review process. This review is taking far more time than I expected.

<http://degruyter.com/cti>

Elections

In 2019 elections will take place for the next biennium. The first step, installing a nomination committee has been taken. Members are Rachel Mamlok, Marcy Towns, and three external members. From the data provided by the Bureau, all Titular Members (TM) positions are open for election. The chair and secretary have a term of four years, so they will remain in office until 2022. In July 2019 we will have more information about the elections.

See <https://iupac.org/iupac-elections-for-the-2020-2021-term/>

Financial situation

The operational budget for CCE is overdrawn. The total of declarations for Sydney has exceeded the total of US\$ 12,000. I am not completely sure what the consequences will be for our meeting in Paris. For our meeting in Cape Town, South Africa, it will mean that the budget will be limited to a certain amount per officer.

Upcoming Conferences

IUPAC World Chemistry Congress, General Assembly. 6-12 July 2019, Paris, France

Eurovariety, 17-19 July, 2019, Prato, Italy

NICE, 30 July – 1 August 2019, Taipei, Taiwan

ACRICE, 22-27 September 2019, Lagos, Nigeria