

IUPAC COMMITTEE ON CHEMISTRY EDUCATION

Meeting at the

22nd INTERNATIONAL CONFERENCE ON CHEMISTRY EDUCATION (ICCE)

EUROPEAN CONFERENCE ON RESEARCH IN CHEMISTRY EDUCATION (ECRICE)

ROME, ITALY

Meeting times:

Sunday July 15, 09.30 - 13.00 and 14:00-18:00 joint lunch and dinner)

Tuesday, July 17. 19.00-22.00, joint dinner

Meeting location office of Italian Chemical Society, Via Legale 48c

1. Welcome, introduction and orientation (45')

Likely attendees (see also table below)

TMs: Mei-Hung Chiu (Taiwan)-Chair, Jan Apotheker (Netherlands)-Secretary, Eva Akesson (Sweden), Nina Aremo (Finland), Choon Do (Korea), Masahiro Kamata (Japan) , Mustafa Sözbilir (Turkey), Erica Steenberg (South Africa)

NRs: Suzanne Boniface (New Zealand), Liberato Cardellini (Italy), Peter Childs (Ireland), Maja Elmgren (Sweden), Morton Hoffman- Conference coordinator (USA), Farzana Mahmood (Pakistan), Rachel Mamlok-Naaman (Israel), Tina Overton (United Kingdom) , Alex Pokrovsky (Russia), Ting-Kueh Soon (Malaysia).

Guests: Tony Wright, Luigi Campanella(host Italian Chemical Society), Lida Schoen (chair committees), Judith Poë (organizer Toronto), Andrew Dicks (organizer Toronto), Ilka Parchmann(EuChemS), Siegbert Schmid(interest Sydney Australia), Djafer Benachour(OPCW), Daniel Feakes(OPCW)

Ting Kueh Soon arrived at 9.55, Peter Childs arrive 10.15, Liberato Cardellini arrived 11.10 Judith Poe and Andrw Dicks arrived 14.00, Ilka Parchmann arrived 14.30, Siegbert Schmid 16.45, Choon Do 17.00

People presented themselves shortly after Mei Hung Chiu opened the meeting at 09.30

2. Decision on agenda (5')

The agenda was accepted, but 11.1 was brought forward.

11.1 Report Luigi Campanella, ICCE

There will be

552 delegates, 624 abstracts submitted, 356 oral communications , 237 posters, 71 countries 275 from Europe, 34 from Africa 80 from US, Ca, 42 South America, 106 Asia, 15 Australia, NZ

He gave short report about the programma in 10 slides (see appendix 1)

Mei Hung Chiu expressed her satisfaction, stating it looked like a good event, with so many abstracts and so many participants.

Luigi indicated about 55 additonal registrations are expected

Ther will be about 60 Italian high school teachers.

3, Minutes of meeting in Puerto Rico, SanJuan 2011[CCE2012_3] (5')

The minutes were approved

4. Matters arising from the minutes of CCE and new Business (10')

Most matters arising from the minutes are on the agenda.

5. Chair's Report to Council, Leiden April 2012 [CCE2012_004.1,2,3] (15')

The report of the chair was approved by the meeting.

We recieved a message back from Bureau indicating the CCE should work together with the divisions. It is important that we sustain contact with divisions. The chair and secretary will attend meetings of the divisions and standing committees during the general assembly and present the activities of CCE.

Peter Mahaffy collaboration with OPCW leads to double interest
Pokrovsky: Best partner is Unesco Water Institute to Delft for global water experiment.

6. Future directions for CCE – priorities for 2012-2013 (15', then tabled until Tuesday)

Mei-Hung Chiu presented the biennial goals (appendix 2). She announced the meeting will break later to discuss possible projects that could be developed in the next year.

coffeebreak

7. Report from Projects group (Mustafa Sözbilir) [CCE2012_006]

Mustafa thanks all reviewers for their work. He indicates that more reviewers are necessary.

The report was approved.

8. Review of activities and relationships

8.1.Flying Chemist Program (FCP) (Mei-Hung Chiu)

Mei Hung Chiu reported about her visits to Sri Lanka, Philippines and Ethiopia,

She will do another visit to Panama and Mexico in Oktober 2012, together with Lida Schoen, who will give a YAC-workshop there.

The reports were approved.

8.2a. Global Stamp competition (Lida Schoen [CCE2012_8_2])

Lida Schoen presented her global stamp competition, see appendix 3.

Her report was approved.

8.2b. YAC Program (Lida Schoen/ Erica Steenberg) [CCE2012_8_3]

Lida Schoen reported the workshops were very successful. It was the first international workshop in 15 years in some cases.

Except for Mexico and Panama, there are no new engagements at this time. Some suggestions for new calls were made, like the former Russian states/ Arabic republics and perhaps South Sudan and Malaysia. see appendix 4.

8.3. Relationship with EuChEms, ECRICE (Ilka Parchmann)

Ilka indicated she was very happy with the cooperation between CCE and EuChemS. She is looking forward to an interesting conference.

8.4. Relationship with OPCW, (Djafer Benachour)

Djafer gave a presentation about the work of OPCW. See appendix 5.

8.5 International Year of Chemistry 2011 (Mustafa Sözbilir, Anthony Wright)

Bob Belford reported about the use of the virtual conference that took place in the weeks prior to the conference. He indicated the site had over 11.000 hits, many reads of articles and also many comments were given. One article stood out in the hits, because Google sent people to the site.

Bob indicates the site had a large impact value. See appendix 6.

8.6. Lida Schoen reported about the distinguished contribution for chemistry education award as she was chair of this committee. The jury further consisted of Ti Soon Koon, Javier Garcia

Nominations: Bob Bucat and Peter Mahaffy were nominated and it was decided they would receive the award.

The guidelines and forms set up by Mei-Hung will be circulated among the CCE for comment

Peter Atkins will hand out the awards during the opening ceremony on Monday.

8.7 future activities

No remarks were made.

Lunch was served in the garden of the office of the Italian Chemical Society.

14.00

9. Reports from NRs and TMs [CCE2012_009]

Russia, Ireland, Malaysia, Australia, South Africa, Turkey gave short remarks about their national reports.

10. Interaction with Divisions and Standing Committees

10.1. Oral report from Chair (Mei Hung Chiu)

10.2. Report from Divisional Liaison Officer (Eva Akesson) [CCE2010_009.1]

10.3. Contributions from Divisional Representatives and standing committee chairs

10.3.1. Report from division III, (Mary Garson)
organic chemistry and green chemistry
proposal textbook on chemical biology from chair Ganesh

11. ICCE program (Morton Hoffman) [CCE2012_11]
Morton introduced the ICCE program and indicated that we would now hear two expressions of interest for 2016.

11.1. Overview from Italy, 22nd ICCE & ICRICE (Luigi Campanella)

this point was moved up in the agenda

11.2. Overview from Toronto, 23rd ICCE (Andrew Dicks and Judith Poë)
Judith Poë reported about the progress made so far in Toronto. see appendix 7

11.3. expression of interest from Malaysia, 24th ICCE (Tue King Soon)
Tueh King Soon explained in a presentation why he thought the next ICCE should take place in Malaysia. See appendix 8.

11.4. expression of interest from Australia
Dr Siegbert Schmid presented the advantages of Australia. see appendix 9.

11.5. Considerations for 2016 and beyond

Mort would like to receive proposals for 2018, and suggested that as 2014 will be in North America, 2016 in Asia, 2018 might be in Europe again. If that were the case it would be a good idea to combine that again with ECRICE.

11.6. Other Educational Conferences

Peter Childs asked attention for: Eurovariety 2013 Limerick July 2013

<http://www.eurovariety2013.ul.ie/>

Mei-Hung indicated the Asian chemical education network NICE

<http://www.5thnice.org/en-english/>

The General Assembly 2013 will take place in Istanbul. Mustafa presented some information about Istanbul (see appendix 10)

<http://www.iupac2013.org/>

12. Administrative matters (Mei-Hung Chiu)

12.1. Finance Project budget Operating budget

The total cost was US\$9560.33 and the balance was US\$10,439.67.

In the projects budget there is still \$ 15.000 left, also project committee possible for grants

For the General Assembly there is about \$ 10.000 left for travel cost and other costs.

12.2. Membership [CCE2012_011.2]

12.2.1. TM and officer appointments (Chair, secretary)

12.2.2. Process for approval of conference coordinator, project group chair

12.2.3. Report on NR and AM appointments

12.2.4. Acknowledgment to members whose terms expire.

break out session.

The meeting broke for about 45 minutes to discuss in groups possible new projects.

Report about new projects.

A number of projects were discussed during the break. After the break the following groups reported.

1. Erica Steenberg and Zuriati Zakaria tried to organize a teacher workshop and a YAC event during IUPAC GA in Istanbul.

2. Mei-Hung Chiu formed a task group on developing international standards for chemistry education. There were several members of CCE (such as Masahiro Kamata, Suzanne Boniface, Rachel Mamlok-Naaman) participating the discussions.

3. Peter Mahaffy led a group of people to work on the OPCW project. The participants were Peter Mahaffy, Jan Apotheker, and Ting Kueh Soon.

The meeting was tabled by Mei-Hung at 17.45 to go to the registration

Tuesday restart agenda

19.30

13. Break out session (Sunday afternoon and Tuesday evening) Focus on new projects.

New projects were presented by Maja Elmgren, see appendix 11, Mei Hung Chui, see appendix 12.

There will be a project about OPCW, in which Peter Mahaffy, Tuh King Soon and Jan Apotheker participate.

There was some discussion about Chemistry day proposal professor Doo. The idea is to share the dates that are already in use, like CCE/ Global/ IUPAC/ chemistry day: 6.02 am 10-23

21.30

14. Next meeting

14.1 Next meeting of CCE will take place during the IUPAC General Assembly in Istanbul, Turkey, August 2013

15. Conclusion of the meeting

Mei-Hung Chiu, Chair

Jan Apotheker, Secretary

Minutes CCE meeting draft 10 July 2013

Possible attendants CCE-meeting in Rome

May 2012

Name	country	status	Will attend	email
Chiu, Mei-Hung	Taiwan	chair	yes	Mei-Hung Chiu <meihungchiu@gmail.com>
Apotheker, Jan	Netherlands	Secretary, TM	yes	j.h.apotheker@rug.nl
Akesson, Eva	Sweden	TM	yes	"Eva Akesson(Sweden)" <eva.akesson@rektor.lu.se>
Aremo, Nina	FINLAND	TM	yes	"Nina Aremo (Finland)" <nina.aremo@helsinki.fi>
Do, Choon	Korea	TM	yes	"Choon Do (Korea)" <choondo@sunchon.ac.kr>
Kamata, Masahiro	Japan	TM	yes	MasahiroKamata <masahirok@nifty.com>
Sözbilir, Mustafa	Turkey	TM	yes	Mustafa Sözbilir <sozbilir@atauni.edu.tr>
Steenberg, Erica	South Africa	TM	yes	Erica Steenberg <Erica.Steenberg@wits.ac.za>
Al-Najjar, Abdulaziz	Kuwait	NR		"Abdulaziz Al-Najjar (Kuwait) "" <anajjar55@hotmail.com>
Boesch, Philippe	Switzerland	NR		"Philippe Boesch (Switzerland)" <pboesch@iprolink.ch>
Boniface, Suzanne	New Zealand	NR	yes	"Suzanne Boniface(New Zealand) "" <suzanne.boniface@vuw.ac.nz>
Brandt, Ludo	Belgium	NR		"Ludo Brandt(Belgium) "" <ludo.brandt@chem.kuleuven.ac.be>
Cardellini, Liberato	Italy	NR	yes	"Liberato Cardellini(Italy) "" <libero@univpm.it>
Childs, Peter	Ireland	NR	yes	"Peter Childs(Ireland)" <peter.childs@ul.ie>
Elmgren, Maja	Sweden	NR	yes	"Maja Elmgren(Sweden)" <maja.elmgren@fki.uu.se>
Fahmy, Ameen	Egypt	NR		"Ameen Fahmy (Egypt) "" <afmfahmy42@hotmail.com>
Hoffman, Morton	USA	NR	yes	Morton Hoffman <hoffman@chem.bu.edu>
Mahmood, Farzana	Pakistan	NR	yes	"Farzana Mahmood(Pakistan) "" <fmkcl702@hotmail.com>
Maitra, Uday	India	NR	no	"Uday Maitra(India) "" <maitra@orgchem.iisc.ernet.in>
Mamlok-Naaman, Rachel	Israel	NR	yes	"Rachel Mamlok-Naaman(Israel) "" <rachel.mamlok@weizmann.ac.il>
Overton, Tina	UK	NR	yes	"Tina Overton (United Kingdom) "" <t.l.overton@hull.ac.uk>
Pokrovsky, Alexander	Russia	NR	yes	"Alex Pokrovsky(Russia) "" <an.pokrovsky@wanadoo.fr>
Rahman, M. Muhibur	Bangladesh	NR		"M. Muhibur Rahman (Bangladesh)"" <em@univdhaka.edu>

Minutes CCE meeting draft 10 July 2013

Reiners, Christiane	Germany	NR		"“Christiane Reiners (Germany) ”" <christiane.reiners@uni-koeln.de>
Riedel, Miklós	Hungary	NR		"“Miklós Riedel (Hungary) ”" <riedel@ludens.elte.hu>
Shuai, Zhigang	China	NR		"“Zhigang Shuai”(China/Beijing)" <zgshuai@tsinghua.edu.cn>
Solomon, Theodros	Ethiopia	NR		"“Theodros Solomon (Ethiopia) ”" <theodros.solomon3@gmail.com>
Soon, Ting-Kueh	Malaysia	NR	yes	"“Ting-Kueh Soon (Malaysia) ”" <soontk@ikm.org.my>
Tantayanon, Supawan	Thailand	NR		"“Supawan Tantayanon(Thailand) ”" <supawan.t@chula.ac.th>
Toshev, Borislav	Bulgaria	NR		"“Borislav Toshev(Bulgaria) ”" <toshev@chem.uni-sofia.bg>
Wright, Anthony (Tony)	Australia	NR		"“Anthony (Tony) Wright (Australia) ”" <tony.wright@uq.edu.au>

Guests IUPAC Divisions				
Michael Dröscher	Germany	Ex officio		Michael Dröscher <m.droescher@t-online.de>
John Dufus	Chemistry and human health division			
Assaf Friedler	Physical and Biophysical Chemistry division			
Javier Garcia-Martinez	Inorganic Chemistry division		yes	Javier Garcia Martinez <j.garcia@ua.es>
Hemda Garelick	Chemistry and environment division			Hemda Garelick <H.Garelick@mdx.ac.uk>
Mary Garson	Organic and biomolecular division			Mary Garson <m.garson@uq.edu.au>
Richard Hartshorn	Chemical Nomenclature and structure division			Richard Hartshorn <richard.hartshorn@canterbury.ac.nz>
Werner Mormann	Polymer division			
Nelson Torto	Analytical Chemistry division			
Guests others				
Ilka Parchmann	div. education Euchems		yes	Ilka Parchmann <parchmann@ipn.uni-kiel.de>
Pascal Mimero	EC2E2N			mimero@cpe.fr
Peter Mahaffy			yes	Peter Mahaffy <Peter.Mahaffy@kingsu.ca>
Benjafer Benachour	OPCW		yes	Benachour Djafer <djafer.benachour@nasr-dz.org>
Andrew Dicks	Toronto			Andrew Dicks <adicks@chem.utoronto.ca>
Judith Poe	Toronto			Judith Poe <judith.poe@utoronto.ca>

Appendix 1. Slides from Luigi Campanella

Appendix 2

The six priorities that will lead the work of CCE for the 2012-2013 biennium were discussed at the last IUPAC GA in San Juan, Puerto Rico:

- (a) To give priority to initiatives that highlight the relationship between chemistry and sustainable development via working with divisions, also to extend the goals of the IYC the UN Decade for Education for Sustainable Development.
- (b) To maintain a primary focus on working with other partners, across divisions, and stakeholders to maintain momentum of the International Year of Chemistry.
- (c) To emphasize the importance of developing ALL students' inquiry competency and learning outcomes of excellence in chemistry education, both in the developed and developing world.
- (d) To identify new learning and teaching practice in the areas of chemistry education¹ throughout the world.
- (e) To build chemistry education networks among and outside IUPAC, using fully the multicultural capacity within CCE and chemistry to bridge people.
- (f) To continue to support initiatives that raise awareness, social responsibilities, and understanding of ethical issues that are important in chemistry education.

The biennial International Conferences on Chemistry Education (ICCE) is considered as a major bridge for CCE to present the outcomes of CCE projects, to link chemistry educators together to empower impact of chemistry education, and to implement CCE strategies for making a valuable contribution to our society.

Details of the priorities and strategies for accomplishing the priorities will be a major focus of our CCE meetings in Rome at the 2012 ICCE.

Minutes CCE meeting draft 10 July 2013

Appendix 3 Report Global Stamps

Appendix 4 YAC report

Appendix 5. Slides Djafer Benachour

Appendix 6. Slides from Bob Belford

Appendix 7. Slides Judith Poë

Appendix 8. Information from Malaysia

Appendix 9. Information from Australia

Appendix 10. Information about Istanbul

Appendix 11 proposals for projects Elmgren

Appendix 12. proposal Mei-Hung Chui



Congress statistics 1	
574	• Registered delegates
624	• Total abstracts submitted
356	• Oral Communications
237	• Poster Contributions



Topics, Sessions & Workshops	
Communicating chemistry	(15 sessions & workshops)
Didactics of Third level chemistry	(16 sessions & workshops)
ICT and multimedia in teaching chemistry	(9 sessions & workshops)
Didactics of Second level Chemistry	(16 sessions & workshops)
Laboratory work in teaching chemistry	(12 sessions & workshops)

Plenary Lectures	
Plenary 1	Vincenzo Balzani, Italy <i>The role of science in a fragile world</i>
Plenary 2	Harold Kroto, UK <i>Science, Lost in Translation?</i>
Plenary 3	Brian Coppola, USA <i>The Creativity Challenge: Do Real Work, not Homework</i>
Plenary 4	Mansoor Niaz, Venezuela <i>Stimulating and reflecting over the history of chemistry to facilitate conceptual change</i>
Plenary 5	Alexander Renkl, Germany <i>Active Learning: On Sensible and Less Sensible Conceptions of 'Active' and Their Instructional Implications</i>
Plenary 6	Norman Reid, UK <i>Some Research Keys to Successful Chemistry Education</i>
Plenary 7	Bassam Shakashiri, USA <i>Communicating Chemistry via demonstrations (Viktor Obendrafra Demonstration Lecture)</i>
Plenary 8	Avi Hofstein, Israel <i>Learning in and from chemistry laboratories: Research and practice</i>
Plenary 9	Peter Mahaffy, Canada and Ilka Parchmann, Germany <i>Where do we go from here?</i>

Keynote Lectures	
Keynote 1	Mei-Hung Chiu, Taiwan <i>Globalization of Chemistry Education</i>
Keynote 2	Melanie Cooper, USA <i>Chemistry, Life, the Universe and Everything</i>
Keynote 3	Hans-Dieter Barke, Germany <i>Structure of matter - diagnosis of misconceptions and challenge</i>
Keynote 4	Odilia Finlayson, Ireland <i>Engaging and Challenging First Years Students in Chemistry</i>
Keynote 5	Maria Sheehan, Ireland <i>Using ideas from research to change practice in the chemistry classroom</i>
Keynote 6	Silvija Markic, Germany <i>Linguistic heterogeneity: challenge for modern chemistry education</i>
Keynote 7	Marcelo E. Conti, Italy <i>Teaching chemistry in a non chemical college</i>

Subjects more present in the scientific contents of the Conference

- Increasing tendency to a globalised Model of Education in Chemistry (cooperation, collaboration progress, exchanges especially toward development countries, creation of network at national and international level and participation to the existing one) with online resources in Chemical Education and web-based activities.
- Equilibrated balance between innovative methods and technologies (computers, ICT, multimedia, new education software, virtuality) and traditional historical approaches: we have not to forget that we are Chemists teaching Chemistry.
- Application to real systems as environment and energy of the chemical basic concepts (greenhouse effect, ozone hole, renewable resources).
- Introduction to safety and ethical aspects of our discipline (code of conduct, responsibility, education to evaluate risk/hazard).
- Choice of experiments in labs including researches for innovative ones also with attention to microscale Chemistry and nanotechnology experiments, increasing cooperation with lab museums and virtual labs, avoiding to fall into the temptation of "magic chemistry".

Thanks to...

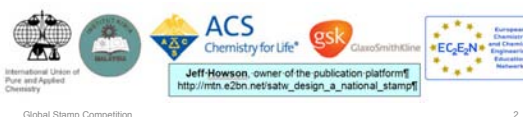
Committees		Sponsors
Scientific	Local Organizing	Gold Sponsor
Paola Ambroggi	Mario Beccari	 CENGAGE Learning
Liberato Cardellini	Franco Calascibetta	Copper Sponsors
Peter Childs	Gabriele Favero	 PHYWE excellence in science
Michele A. Floriano	Andrea Macchia	 OfficeApogeo.com
Morton Z. Hoffman	Giuliano Moretti	
Peter G. Mahaffy	Manuela Mostacci	
Ilka Parchmann	Mariano Venanzi	
Antonella Rossi		

...all of YOU as qualified participants!!!



IYC 2011 project idea 110

- IUPAC project 2010-031-2-050
- Budget: \$1750
- **Global Stamp Competition**
- Submitted stamps must show the impact of chemistry on a country's culture and everyday life.



Global Stamp Competition

2

Start

- **Launch:** in **Paris**, January 2011 during **IYC 2011 opening ceremony** at UNESCO Headquarters
- **Flyer** with instructions and examples
- **All students:** Science, English, Art, Geography and History, so of **all subjects** can take part
- **Deadline** June 15, 2011



Global Stamp Competition

3

Global Stamp Competition for Students around the World



Taskgroup
Christiane Reiners
Lida Schoen
Daniel Rabinovich
Morton Hoffman
Rachel Mamluk-Naaman

Partners
IUPAC
ACS Chemistry for Life
gsk
EC&EN

Design a national stamp that represents 'Chemistry as a Cultural Enterprise', showing the chemical impact on culture and/or every day life in your country. Students, age categories **12-14**, **15-18** and **undergraduates / teacher students** submit their stamps to a global database to share with other students in the world. Visit the website www.chemistry2011.org/participate/activities/show?id=110

Instructions after Paris launch (1)

- MTN **publication platform**
- All students can start to submit their contributions now! **Submit** your stamp and write a max. 50 words 'explanation' in English.
- All entries moderated.
- You will be able to see stamp designs from other students as well and you can rate them (**peer review**).
- **Deadline:** 15 June 2011



Global Stamp Competition

5

Instructions after Paris launch (2)

- MTN **publication platform. Free!**
- All students can start to submit their contributions now! **Submit** your stamp and write a max. 50 words 'explanation' in English. **Problem?**
- All entries moderated. **Unpatient students!**
- You will be able to see stamp designs from other students as well and you can rate them (**peer review**). **Social media!**
- **Deadline:** 15 June 2011 → **247 entries**

Global Stamp Competition

6

Publication Platform

Your Name and Country (required):

Your School (required):

Story Headline (required):

Story Body (required):bold italic + bullet

Choose a category:

Media file: Flashblog media library

Media caption:

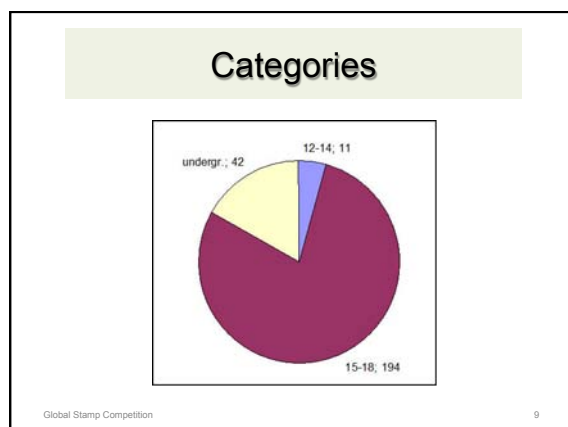
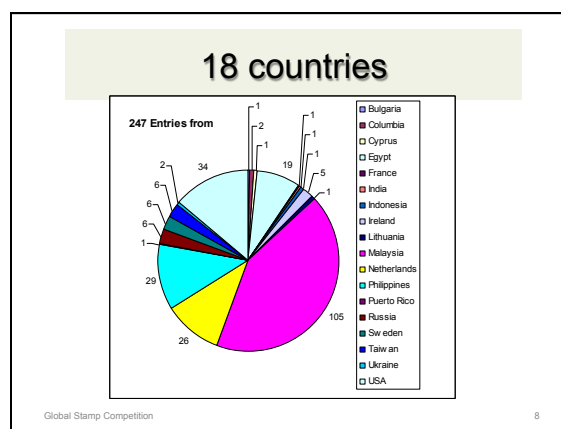
Link Text (eg title of website):

Related links:

(save & preview and then re-edit to add more than one link)

save & preview

7



- ### Results
- Different subjects:
 - Nobel laureates
 - Raw materials
 - (Chemistry of) products
 - History
 - Creative use of equipment
- 10



- ### Prizes
- \$500* for 3 winners in 3 age categories
 - \$250* for 3 runners-up (age 15-18)
 - Certificates for
 - Winners
 - Runners up
 - Nominees
 - Participants
- * Also made possible by a generous gift of GlaxoSmithKline
- 12

Impact (as far as we know)

- **Bulgaria** (prize giving ceremony)
- **Malaysia** (prize giving ceremony)
- **Cyprus** (customised stamps)
- **Netherlands** (customised stamps)
- **Egypt** (certificates)

Global Stamp Competition

13



Prize giving ceremonies (1): Bulgaria

Vasilena Vasileva from SOU Hristo Botev, Gorna Malina



Thank you GlaxoSmithKline!



IUPAC certificate



English teacher Krilka Starlova and headmaster of Hristo Botev



Vasilena with family and English teacher



Ceremony on school yard

Global Stamp Competition

15

Prize giving ceremonies (1): Bulgaria



Special prize cake with the winning stamp



Vasilena with her grandmother

Global Stamp Competition

16



Malaysia, 15-18



Global Stamp Competition

18





Closing Ceremony Brussels



Global Stamp Competition

31

Chemistry International

Publication in Chemistry International,
Vol. 33 No. 6, November-December 2011:

[Global Stamp Competition](#)

Available for all attendants during the IYC 2011
Closing Ceremony in Brussels

Global Stamp Competition

32




CCE meeting, Rome, July 15, 2012
(Research based Evaluation) of the
Young Ambassadors for Chemistry
project
Lida Schoen
Mei-Hung Chiu
Erica Steenberg

1

YACs



IUPAC project [2003-055-1-050](#):
Young Ambassadors for Chemistry
Aim: to enhance the Public Understanding of Chemistry in four target countries

- Taiwan (**Taipei**)
- Argentina (**Buenos Aires**)
- Russia (**Krasnoyarsk, Siberia**)
- Korea (**Gwangju**)
- South Africa (**Grahamstown**)

involving IUPAC CCE members and **Science Across the World** co-ordinators (task group).



Young Ambassadors for Chemistry

2

YAC Logo





Design
Nicolás Fossati
T.S.Eliot School, Buenos Aires,
Argentina



Young Ambassadors for Chemistry

3

Research based evaluation



New IUPAC project: **2007-005-2-050**
'Research based evaluation of the YAC project' (2008-2010)
www.iupac.org/web/ins/2007-005-2-050


Data from :

- **South Africa** (Grahamstown, March 2007): Erica, (Lida)
- **Taiwan** (Taipei, December 2007): Mei-Hung Chiu, Erica, (Lida)
- **Mauritius** (August '08): Erica, Mei-Hung, (Lida)

Research based evaluation YAC project 2011-2012

4

Aim of the YAC project



To promote chemistry by making

- teachers,
- **students**,
- public,
- decision makers

aware that chemistry is an important part of their daily life and teach them to act as (Young) Ambassadors for Chemistry.

Research based evaluation YAC project 2011-2012

5

Task group / team



- **Lida Schoen** (chairman, Netherlands), organiser
- **Mei-Hung Chiu** (Taiwan), evaluator
- **Erica Steenberg** (South Africa), evaluator
- Natalia Tarasova (Russia), member
- Ponnadurai Ramasami (Mauritius), member

Research based evaluation YAC project 2011-2012

6

Course / event materials

- An existing **Science Across the World resource: Chemistry in our lives**
- **course materials** (Train the trainers), translated in the local **language**, if needed

Research based evaluation YAC project 2011-2012



7

Results / new aims

Results 'old' project

- **Thousands** of students, teachers, parents and public (either invited or by chance) in many countries have been exposed to the 'good' side of chemistry, young students showing easy to produce instructive models and producing everyday-life products, that everybody uses.
- **Local ownership** proved to be essential for a successful course / event and follow-up.

Aims evaluation

- To identify (more) conditions to make YAC **sustainable** and **self supporting** in visited and new countries;
- to find conditions to attract (new) **sponsors**;
- to compare evaluation results in the different visited countries;
- to build an IUPAC-YAC **website** with results and guidelines for interested countries in hosting a YAC course / event.

Research based evaluation YAC project 2011-2012



8

Evaluation data (1)

Questionnaires for and observations from

- teachers,
- students,
- public,
- local organisers,
- external evaluators.

YACs questioning the public



Research based evaluation YAC project 2011-2012



9

Evaluation data (2)

New condition: ownership (comparable with Flying Chemists):

- Project budget provides travel costs for a trainer and an evaluator
- Visited country provides all local costs

Data from

- **Cyprus** (Nicosia, 2009): Erica (Lida)
- **Malaysia** (Ipoh, 2010): Mei-Hung (Lida)
- **Philippines** (Manila, 2010): Mei-Hung (Lida)
- **Ethiopia** (Addis Ababa, 2011): Erica (Lida)

More data from (2012)

- **Puerto Rico** (San Juan, August 2011): Erica (Lida)
- **Tanzania** (Kasulu, April 2012): Erica (Lida)

Research based evaluation YAC project 2011-2012



10

Summary YAC events

Country	YAC venue	Number of students involved	Estimated number of passers-by
Mauritius	In front of a major shopping centre	50	Many (Saturday afternoon) shoppers
Cyprus	On the Square of Freedom	40	Many (Saturday afternoon) passers-by
Malaysia	School hall (inside)	50	Many colleagues, school representatives, teacher training students
Philippines	Dome shopping mall (inside)	50	Many visitors shopping mall and staff assistants
Taiwan	In front of City Hall at Taipei 101 (509 m, one but highest building in the world)	30	Passers-by, many young kids joined the practical work
Ethiopia	In front of the Ministry of Education at busy roundabout	40	Many (Saturday afternoon) passers-by



Spin-off (IYC 2011)

YAC activity	Date	Host	Local organiser	Contact after activities
Kuwait City, Kuwait	April 18, 2011, during 2 nd Kuwait ChemTea Network Conference	Dr. Abdul Aziz Al-Najjar, president of Kuwait Chemical Society, Kuwait	Dr. Mervat with assistant Achmed	Dr. Abdul Aziz Al-Najjar
Irbid, Jordan	April 20, 2011 during 6 th Jordanian International Conference on Chemistry	Prof. Sultan Al-Orabi, President of Yarmouk University, Irbid	Prof. Ayman Hammoudeh with many assistants (PhD students)	Prof. Ayman Hammoudeh (vice dean of Faculty)
San Juan, Puerto Rico	July 29, 2011 before GA Puerto Rico	Chemistry Department of the University of Puerto Rico-Rio Piedras	Prof. Ingrid Montes with many assistants (PhD students)	Prof. Ingrid Montes
Gorna Malina, Bulgaria	November 8, 2011, because of prize in Global Stamp Competition	SOU Christov Botov	English teacher Kirilka Stankova Keith Kelly	Kirilka Stankova Keith Kelly

12

Spin-off (IYC 2011) details

YAC activity	'Public' venue for YAC event	'Visitors'	VIPs	After activities
Kuwait City, Kuwait	Science Centre	Visiting and invited students and teachers	President Chemical Society MOE	Promise to repeat the experiment with young children
Irbid, Jordan	Too small improvised laboratory with too many people	Participating teachers and students	Prof. Ayman Hammoudeh (vice dean of Faculty) Dean	?
Puerto Rico (San Juan)	Chemistry Department of the University of Puerto Rico-Rio Piedras	Participating teachers and students PhD students	Prof. Ingrid Montes Chris Brouwer	Chris Brouwer (CI): www.iupac.org/publications/ci/2011/3306/yac_sidebar.html
Bulgaria (Gorna Malina)	Schoolyard (outside) SOU Christov Botov	All students of this rural school (Grand)parents Relatives Friends	Kirika Stankova Keith Kelly Headmaster Mayor MOE Inspection Local TV	Keith Kelly, FactWorld: www.factworld.info/bulgaria/IYC_Stamp_11/index.htm?

13

YAC course 2012

Country	Date	Host	Local organiser	Contact after activities
Tanzania	April 25-27, 2012	Kasulu Secondary School	Headmaster with 14 private schools Initiator	Gideon Bunyaga Thadeo Ntambala

Research based evaluation YAC project 2011-2012

14

YAC event 2012

Country	Public venue for YAC event	Number of students	Visitors	VIPs	After activities
Tanzania	On the shaded grandstand of the local football stadium	50 + 50	Many passers-by, many young kids	Headmaster, Headmaster Teacher Training College, Initiator	Thadeo Ntambala: www.youtube.com/watch?v=V_ptpD1840&feature=youtu.be

Research based evaluation YAC project 2011-2012

15

YAC Puerto Rico (2011)



Young Ambassadors for Chemistry Kasulu

16

YAC Bulgaria (2011)



Young Ambassadors for Chemistry Gorna Malina

17

2012: YAC Tanzania (1)



YAC Tanzania (2)



Research based evaluation YAC project 2011-2012

YAC Tanzania (3)



Research based evaluation YAC project 2011-2012

YAC Tanzania (4)



21

YAC Tanzania (5)



Video:
http://youtu.be/V_ptpD1840

22

Summary conclusions/evaluations

Organisers:

- Still problems with visualising YAC event in 'new' countries
- Not yet success with attracting industrial sponsors (SM Manila in the Philippines -2010- seemed good start, but up till now the only one!)

Research based evaluation YAC project 2011-2012

23

Future evaluations

More data from:

- **Panama City, Panama:** Mei-Hung, (Lida), October 2012
- **Cancun, Mexico*:** Mei-Hung, (Lida), October 27-31, 2012

* YAC and FCP during 30º Congreso Latinoamericano de Química - 47º Congreso Mexicano de Química y 31º Congreso Nacional de Educación Química

Research based evaluation YAC project 2011-2012

24

Publications since GA Puerto Rico



1. Chris Brouwer: **Learning with laughter** in **Chemistry International**, nr. 6, Nov-Dec 2011:
www.iupac.org/publications/ci/2011/3306/yac_sidebar.html
2. Local TV: **Interview with Vasi Vasileva**:
www.youtube.com/watch?v=3yU-VPSH1gl&feature=channel_video_title
3. Keith Kelly: **Chemistry as a Cultural Enterprise, Gorna Malina, Bulgaria**: www.factworld.info/bulgaria/IYC_Stamp_11/index.htm
4. *Erica Steenberg, Lida Schoen, Young Ambassadors for Chemistry in Kasulu, Tanzania* (will be more exciting title), *in the press*: **Chemistry International**, nr. 5, Sept-Oct 2012

Research based evaluation YAC project 2011-2012



25

Sponsors Evaluation Project



'Chemicals' and packaging for YAC Puerto Rico, Bulgaria and Tanzania

- IFF (Netherlands) for donating concentrated oils for perfume;
- Annindriya (Netherlands) for donating small spray bottles for perfume;
- SASOL (Germany) for donating detergents;
- Seppic (France) for donating emulsifier.

Research based evaluation YAC project 2011-2012



26

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
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Temporary Working Group on Education and Outreach (Scientific Advisory Board)

Past work, Current Status and Objectives, Future tasks

Djafer BENACHOUR
(Chairman of the TWG)
djafer.benachour@nsar-dz.org

CCE, ROMA, July 15, 2012

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
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Prof. Djafer BENACHOUR (short C.V.)

- Higher Education:**
 - Engineering Degree: National Polytechnic School, ALGIERS: June 1976,
 - Intensive English Language Program: L.S.U., Sept. 1976- May 1977,
 - MSc. + Ph.D in Macromolecular Science., C.W.R.U., Sept. 1977- August 1982
- Work Institution:**
 - Ferhat Abbas University, SETIF (ALGERIA): since October 1982 ,
 - President of this university from October 1991 to August 2000,
 - Director of a Research Laboratory on « Multiphase Polymeric Materials » since July 2000
- Education Involvement:**
 - 30 years of teaching chemistry, chemical engineering and Polymer Science,
 - involved in local, national and international panels and commissions in charge of chemistry curricula and related research programs,
 - supervised 33 engineer senior projects, 28 Magister (Master) and 15 Ph.D. theses.
- Other Activities:**
 - Vice-President of the Algerian Chemical Society: 1990 - 2009
 - Minister Advisor in charge of the LMD implementation: since September 2002
 - Member of S.A.B./O.P.C.W. since September 2009,
 - Chairman of the TWG E&O since November 2011.

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Introduction

- Education and outreach in Sciences & Technologies are important to the CWC's future implementation. Education and outreach serve a number of purposes including:
 - raising awareness of the CWC among the broad community of relevant professionals who should be aware of it
 - stressing the potential risks posed by the multiple uses of chemicals
 - contributing to national implementation of the CWC
 - contributing to the prevention of the misuse of toxic chemicals
 - facilitating chemical safety and chemical security
 - building skills and capabilities in areas relating to the peaceful uses of chemistry

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UN disarmament education study

United Nations
General Assembly
Dist.: General
30 August 2002
Original: English

Fifty-seventh session
Item 57 (c) of the provisional agenda*
General and complete disarmament

United Nations study on disarmament and non-proliferation education
Report of the Secretary-General**

Summary

There has never been a greater need for education in the areas of disarmament and non-proliferation, especially with regard to weapons of mass destruction, but also in the field of small arms and conventional weapons. Since the end of the cold war, changing concepts of security and threat have demanded new thinking. Such new thinking will arise from those who are educated and trained today.

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Early SAB work

- Much input by individual SAB members
- In 2004 SAB-6 decided to establish a TWG on education and outreach
- In 2007 SAB-10 decided that ToRs should be drafted, based on past work and the TWG should focus on "practical procedures"
- In 2008 SAB-11 said E&O had progressed beyond the point where a TWG would accelerate progress

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OPCW-IUPAC collaboration

- Workshops on S&T in 2002 , 2007 and 2012
- Conference in Oxford in July 2005
 - PAC report (2006)
- "Multiple uses" project
 - Chem Int article (Nov-Dec 2007)
 - Website, but IUPAC link not working properly
- Codes of conduct project
 - Chem Int article (Nov-Dec 2011)
- Involvement of CCE members

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Work in other fields

- Life sciences
 - BWC intersessional process
 - InterAcademy Panel etc
 - Responsible conduct of research/research integrity
- Nuclear security
 - International Nuclear Security Educators' Network
 - MSc course syllabus
- CTBTO
 - Capacity Development Initiative
 - S&T conferences (2006, 2009, 2011 and 2013)

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The 2011 SAB decision

- August 2010 letter from DG
- SAB-16 discussion on outreach
- Funding for two TWG meetings included in draft EU Council Decision
- SAB-17 decided to establish a TWG chaired by Prof Djafer Benachour

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TWG objectives

- The objectives of the TWG are:
 - to build on earlier work in this area by the SAB and its members
 - to utilise the experience of other initiatives in this field and related areas
 - to make recommendations to the SAB for sustainable activities which could be pursued by the OPCW and its Member States

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Questions for the TWG

- How to raise awareness of the CWC in the education sector?
- How can the OPCW further develop its relationships with the scientific community and the chemical industry?
- How can the OPCW contribute towards expanding and promoting a culture of responsibility in the scientific community and the chemical industry?
- Existing initiatives in this area with a view to avoiding duplication and allowing the OPCW to build relationships with other international organisations, professional associations, networks etc
- Sustainable ways in which the OPCW can take forward its education and outreach activities once the TWG completes its work

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Actual composition of the TWG E&O)

Djafer Benachour (Algeria)
Phillip Coleman (South Africa)
Temechegn Engida (Ethiopia)
Jo Husbands (USA)
Peter Mahaffy (Canada)
Alejandra Suarez (Argentina)
Alastair Hay (UK)
Detlef Maenig (Germany)
Jan Apotheker (The Netherlands)
Mahdi Balali-Mood (Iran)
Ting-Kueh Soon (Malaysia)
Robert Mathews (Australia)

First meeting : April 12-13, 2012, The Hague (OPCW)

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Current status of the TWG E & O

- Strong support from the DG
 - Relevance to future priorities of OPCW
- Three-year TWG mandate
- Funding for 2 meetings in 2012 (first session April 13-14, second scheduled for November 20-21) and one meeting in 2013 (?)

OCW.ROMA, July 15, 2012

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
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The TWG E & O held its first session on April 12-13, 2012 at the OPCW headquarters in The Hague.

Participants : 22
(4 guests + 11 TWG E & O + 7 TS/OPCW)

During this session 18 presentations were made:
 4 by the TS /OPCW (ppt.)
 2 by invited persons (guests) (ppt.)
 1 by the TS/guest (in the form of a movie)
 11 by the TWG E & O members (oral and ppt.)

OCW.ROMA, July 15, 2012
TWG EA O - 18 SAB/OPCW, The Hague, April 12-13, 2012

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The first presentation was made by Daniel Feakes who gave an overview of the aims and objectives of the TWG as set out in the terms of references.

These objectives are to build on earlier work in this area by the SAB and its members, to utilize the experience of other initiatives in the field and related areas, and to make recommendations to the SAB for sustainable activities which could be pursued by the OPCW and its Member States.

OCW.ROMA, July 15, 2012
TWG EA O - 18 SAB/OPCW, The Hague, April 12-13, 2012

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The others TS/OPCW presentations were made respectively by:

- Boitumelo Kgarebe who briefed the TWG on the Education and Outreach activities of the International Cooperation Branch. She also presented impressive statistics for the April 1997-December 2004 period.
- Michael Luhan presented the public diplomacy and related activities of the OPCW with respect to Education and Outreach.
- Mark Albon gave a detailed presentation on the 'OPCW Electronic Tools and e-learning' facilities and tools available. The accent was made on how these tools could be developed more in the near future in order to reach much larger audiences.

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TWG EA O - 18 SAB/OPCW, The Hague, April 12-13, 2012

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TWGEO members presentations

- Alastair Hay: overview of the IUPAC 'multiple uses of chemicals' project and the resulting educational material made available for teacher use since 2005. Additional resource material in the form of supporting background material on the CWC, OPCW, and codes of conduct is also available.
- Robert Mathews: 'Codes of Conduct for Scientists and the BWC' and provided the TWG with an overview of relevant activities u (BWC). The similarities of the E & Outreach programmes of the BWC and the CWC/OPCW were underlined.
- Jo Husbands summarized work carried out in the life sciences by international scientific unions and by the National Academy of Sciences in the USA.

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TWG EA O - 18 SAB/OPCW, The Hague, April 12-13, 2012

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Djafer Benachour gave a presentation on 'Education and Outreach : Towards whom and at what level ?' He reported that despite many Education and Outreach activities, organized by different institutions, for different audiences and at different levels, the impact is not what has been expected...

—Temechegn Engida presented the Federation of African Societies of Chemists (FASC). This federation has an electronic journal entitled 'African Journal of Chemical Education' (AJCE), ready to publish a special issue on the CWC as related to education and outreach.

- Ting-Kueh Soon introduced the Federation of Asian Chemical Societies, (FACS), 30 national chemical societies of the Asian Pacific Region. FACS members are involved in chemical safety and securities issues and activities. FACS is interested in working with the OPCW in promoting education and outreach on OPCW, CWC, chemical safety and security.

OCW.ROMA, July 15, 2012
TWG EA O - 18 SAB/OPCW, The Hague, April 12-13, 2012

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
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-Detlef Maenig recalled the chemistry industry training and outreach activities and the close links that should exist between scientific and industrial communities

-Jan Apotheker discussed the need for chemistry education and outreach for high school students and considered that these audiences should be the level to start at.

- Alexandra Graciela Suarez insisted on providing educational material for undergraduate university students as well and the use of the new tools made available by internet and its extensions. She also focused on the role of National Authorities and how they could /should be more involved on education and outreach activities at the national level.

TWG EA O , 18 SAB/OPCW, The Hague, April 16-19 , 2012

OCW ROMA, July 15, 2012

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-Mahdi Balali-Mood pointed out the relevant experience of other international scientific organizations such as the International Association of Toxicology and the different workshops on Biosafety and related topics.

- Philip Coleman noted the role of NGO's , national and regional scientific organisations, and how they could be associated to education and outreach activities. He also discussed the levels and audiences for chemistry education and outreach, and the different tools that could be used for that purpose.

TWG EA O , 18 SAB/OPCW, The Hague, April 16-19 , 2012

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The guest presentations were made by:

- Jean du Preez (in collaboration with Ryan Gonzalez) of the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation (CTBTO) gave a large overview on 'Training and Education Activities at the CTBTO'.

-Andrea Braunegger-Guelich, of the International Atomic Energy Agency (IAEA) presented a complete overview of 'The IAEA Human Resource Development Programme for Nuclear Security'. She focused on the different audiences targeted by such a programme and on the International Nuclear Security Network (INSEN) being put in place.

TWG EA O , 18 SAB/OPCW, The Hague, April 16-19 , 2012

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Presentation by the TS/guest (in the form of a movie)

A very interesting short movie '**FIRES**' (produced by Eric van der Borgh of the OPCW Media and Public Affairs Branch) on the life of Fritz Haber, movie made with the collaboration of Prof. Chretien Schouteten.

This movie emphasized the way chemistry should be taught: scientific facts based on real life events and associated with ethical and social impacts.

This new teaching approach increased the students' interest in chemistry as well as their awareness about chemicals misuses.

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From the different presentations, it was noted that:

- Education and Outreach is a priority for different institutions,
- These institutions have similar activities on E & O; they rely more and more on electronic tools,
- Educational + training + outreach materials are available under diverse forms (books, CD's, electronic platforms: e-learning and live modules...). However these materials are used by limited audiences,
- State Parties and National Authorities are not fully engaged in E & O activities,
- International institutions work separately; they are rarely linked through networks,
- The chemical industry is an inevitable partners in E & O .

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A rich and intense debate followed the different presentations. The participants came up with several recommendations that could be summarized as follows:

1-Prepare educational and outreach materials not only in the forms of books and printed documents, but also in the form of electronic platforms, documentaries, short video films...

Specific materials will be adjusted to the different academic as well as industry audiences: high school students, university students, instructors, teachers, technicians, engineers, managers...

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2- Take advantage of other education and outreach activities made by similar organizations (IAEA, CTBTO, BWC, WHO,...), international scientific bodies (IUPAC, IUTOX, IUBMB...), professional associations (ICCA, CEFIC...) as well as NGO's...

3- Engage in other forms of outreach: museums, chemistry Olympiads, national chemical societies promoting awareness in schools, national scientific events...

4- Encourage teaching of ethics and responsible science as part of training of scientists and educators...

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5- Review existing national codes of conduct, in particular any elements related to the CWC. Based on these results, consult with IUPAC leadership about possible additional initiatives...

6- Convince the National Authorities and State Parties that they should get involved more in outreach activities and that they must co-work with their national scientific community.

7- The TWG members should put together a calendar of future related events at which side events might be possible for chemical education and outreach activities...

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8- Identification and promotion of national 'top-end champions' ...

9- The TWG recommends that a focal point be identified within the TS.

The TWG members wish to hold their second meeting by the end of 2012 / early 2013.

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Summary OF WHAT IS EXPECTED OF THE TWG E & O

- **Advice to SAB on**
 - Audiences
 - Methods
 - Synergies with other actors
- **Focus on**
 - Sustainability and "practical procedures"
 - "Bottom-up" as well as "top-down" approaches
 - Learn from other processes/initiatives
 - Importance for national implementation and safety and security

TWG EA O, SAB/OPCW, The Hague, April 12-13, 2012
OCE ROMA, July 15, 2012

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**« EDUCATION AND OUTREACH :
TOWARDS WHOM AND AT WHAT LEVEL ? »**

Djafer BENACHOUR
Member of the SAB/OPCW and Chairman of the TWGEO
Professor of Industrial Chemistry, Ferhat ABBAS University

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Faculté de Technologie, Université Ferhat ABBAS, 19000 SETIF (ALGERIE)
e-mail: djafer.benachour@nasr-dz.org

UNESCO VENICE OFFICE, April 3, 2012
OCE ROMA, July 15, 2012

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FIRST CONCLUSIONS and ANSWERS

1) TOWARDS WHOM ? ----> Different audiences : students, teachers, researchers, professionnels, general public...

2) AT WHAT LEVELS ? ----> Different levels: high school, college, university, post-university.

**But are these the appropriate targets ? Are they the only ones ?
Are there other levels to begin with ? Other means of information
diffusion about CBRN ?**

NEW QUESTIONS:

- Who should be responsible ?
- Who should be involved ?
- Who should be concerned ?

for/in/by the Education and Outreach initiatives

UNESCO VENICE OFFICE, April 3, 2012
OCE ROMA, July 15, 2012

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LAST ANSWERS:
WE ARE ALL INVOLVED, CONCERNED AND RESPONSIBLE...

SO...LET US EDUCATE AND REACH OUT ALL AND EVERYONE IN ORDER TO LIVE IN A WORLD FREE OF CBRN DANGERS...

UNESCO VENICE OFFICE, April 3, 2012

CCE, ROMA, July 15, 2012

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SHOULD THE MEDIA BE USED ?

- TELEVISION :
- NEWSPAPERS AND MAGAZINES :
- INTERNET AND ELECTRONIC PLATFORMS

...YES

BECAUSE ONE PICTURE IS OFTEN WORTH MORE THAN 1000 WORDS ...

UNESCO VENICE OFFICE, April 3, 2012

CCE, ROMA, July 15, 2012


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At this moment, I am in front of the IUPAC Committee on Chemistry Education seeking for help, cooperation, information, advices... and any contribution that could help the TWG E & O of the SAB/OPCW reach its objectives. I am quite confident that working together, we will free our planet not only from the misuse of chemicals but also from the dangers of chemical weapons...

CCE, ROMA, July 15, 2012

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
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UNFORTUNATELY WE WILL CONTINUE TO SEE THIS SIGN



CCE, ROMA, July 15, 2012

ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS
Working together for a world free of chemical weapons

BUT WE SHOULD NEVER SEE AGAIN IMAGES LIKE THIS



CCE, ROMA, July 15, 2012

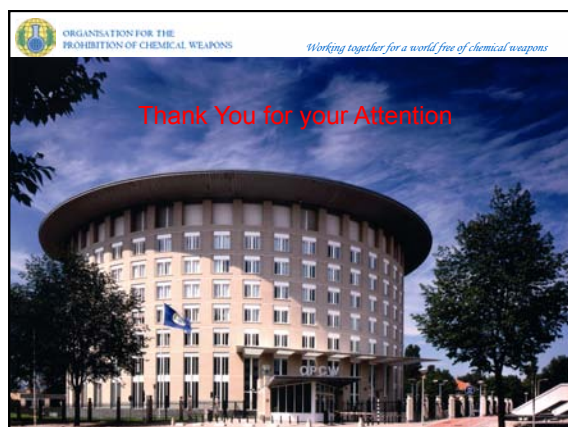
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SO LET US DO OUR VERY BEST TO EDUCATE AND REACH OUT ALL AUDIENCES IN ORDER TO GET RID OF THIS SIGN...



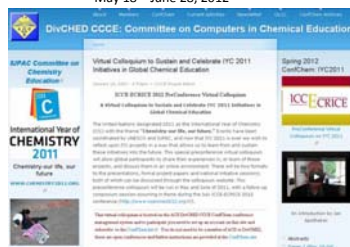
CCE, ROMA, July 15, 2012

26-07-12



IYC 2011 Virtual Colloquium

May 18 – June 28, 2012



Robert E. Belford
Associate Professor of Chemistry
University of Arkansas at Little Rock

Presentation Outline

1. What is a Virtual Colloquium?
What Class of Scientific Communication is it?
 - Is it Symposium Session?
 - Is it a Publication?
 - Is it a New Form of Scientific Communication?
2. What Did We Learn?
 - With Respect to our Goals to Preserve and Sustain IYC 2011 Initiatives?
 - With Respect to Engaging Scientists in a Virtual Colloquium?

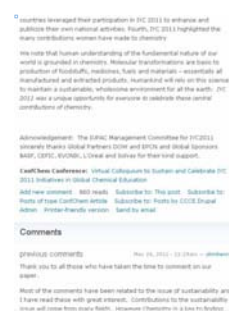


The Discussions:

Enabled by combining Listserv technology with standard Drupal web 2.0 Comment Feature

- Subscribe confchem@ualr.edu to a paper when it is discussed
- Commenting on a paper does two things:
 - Inserts comment below paper (archives it)
 - Triggers email to list.
 - email has link to comment
 - Allows discussions to be threaded below paper
- "Relying to an email" sent the list moderator an email (caused some SPAM filter issues)

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education



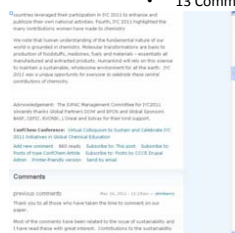
Relative Size of Paper
(larger if extensive images)

Relative Size of Comments

Is this a New Type of Scientific Communication?

Paper n:

- 859 Reads (July 9, 2012)
- 13 Comments



Paper

Comments

Is this a New Type of Scientific Communication?

Paper p:

- 482 Reads (July 9, 2012)
- 3 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper q:

- 957 Reads (July 9, 2012)
- 17 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper r:

- 783 Reads (July 9, 2012)
- 13 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper s:

- 595 Reads (July 9, 2012)
- 9 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper t:

- 1272 Reads (July 9, 2012)
- 30 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper u:

- 808 Reads (July 9, 2012)
- 11 Comments




Paper

Comments

Is this a New Type of Scientific Communication?

Paper v:

- 501 Reads (July 9, 2012)
- 2 Comments



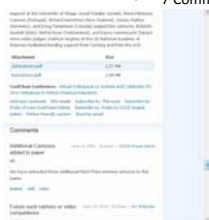
Paper

Comments

Is this a New Type of Scientific Communication?

Paper w:

- 963 Reads (July 9, 2012)
- 7 Comments



Paper
(many images)

Comments

Is this a New Type of Scientific Communication?

Paper x:

- 456 Reads (July 9, 2012)
- 14 Comments



Paper

Comments

Is this a New Type of Scientific Communication?

Paper y:

- 527 Reads (July 9, 2012)
- 10 Comments



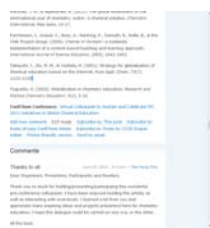
Paper

Comments

Is this a New Type of Scientific Communication?

Paper z:

- 618 Reads (July 9, 2012)
- 12 Comments



Paper

Comments

Is this a New Type of Scientific Communication?

Summary of Tracking Statistics:

- 11,616 hits during 6 week conference (June 30, 2012)*
- 155 comments posted to papers during conference
- 12,141 hits on July 9, 2012*

* Includes conference homepage (with abstracts)

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Papers

- | | |
|--------|---|
| Week 1 | 1. An Introduction to the International Year of Chemistry |
| | 2. IYC2011 and Beyond – UNESCO's Contribution |
| | 3. The Global Experiment of the IYC 2011: Creating Online Communities for Education and Science |
| Week 2 | 4. Young Ambassadors for Chemistry |
| | 5. PAC Recognizes the "Hand of the Youth" in Shaping Chemistry |
| | 6. The Periodic Table of Isotopes for the Educational Community |
| Week 3 | 7. Visualizing and Understanding the Science of Climate Change |
| | 8. Global Stamp Competition: Chemistry as a Cultural Enterprise |
| | 9. Chemistry Cartoon Competition: An IYC Activity from Physical Chemistry in IUPAC |
| Week 4 | 10. The Continuing Celebration of IYC 2011: What the IUPAC Polymer Division is doing to Keep Things Going |
| | 11. MSC100 – French-Polish Accent of the IYC 2011 |
| Week 6 | 12. Sustainability and Globalization of Chemistry Education |
- Note: Week 5 was a Discussion of National Initiatives**

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 1:

An Introduction to the International Year of Chemistry - 2011

John M. Malin & Bryan Henry

Sample of Comment Topics

- UN Millennium Goals (w/link)
- Sustainable Energy for All (w/link)
- Future of Sustainable Chemistry (w/link)
- Earth Policy Institute (w/link)
- CHEMRAWN Perspectives and Recommendations (w/link)
- Global Change Education Program (w/link)
- Spherical Cow (book w/link)
- CRC Press Green Organic Chemistry Book (w/link)
- Spanish Language Green Organic Chemistry Book (w/link)

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 2:

IYC2011 and Beyond - UNESCO's Contribution

Rovani Sigamoney

Sample of Comment Topics*

- UN Based Case Studies
- Use of Library Resources to find Case Studies

*Unfortunately, the author was not able to participate in the discussion.

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 3:

The Global Experiment of the IYC 2011: Creating Online Communities for Education and Science

Javier Garcia Martinez & Rovani Sigamoney

Sample of Comment Topics

- Use of Facebook and Twitter by different populations
- Need for continuation of the Experiment
- Possible future experiment on "What do you eat?"
- People heard about it too late to join

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 3:

The Global Experiment of the IYC 2011: Creating Online Communities for Education and Science

Javier Garcia Martinez & Rovani Sigamoney

Special Comment

Javier Pioneered Use of BigBlueButton and Skype to make Youtube video



Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 4: Young Ambassadors for Chemistry

Lida Schoen, Mei-Hung Chiu & Erica Steenberg

Sample of Comment Topics

- Tie YAC activities to other IYC initiatives like GWE
- Challenges of Train the Trainer type programs
- Issues with Chemical Hygiene
- Desire (by participant not author) for discussions not to be distracted by safety issues
- Are there funding plans for the future?
- The rest were elaborations on YAC projects done in various nations.

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 5:

IUPAC recognizes the "Hand of the Youth" in Shaping Chemistry

Professor Nicole Jeanne MOREAU

Sample of Comment Topics

- Inquiry and answers into details on how organizers of IUPAC sponsored conferences can include IUPAC Poster prizes for students
- Inquiry and answers into nomination process for IUPAC Young Chemist Prizes, and language restrictions
- Need to bring education to masses, not just "elite"

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 6:

[The Periodic Table of Isotopes for the Educational Community](#)

Norman F. Holden & Tyler B. Cooper
This paper generated too much discussion to summarize in this presentation. So we will discuss WHY, not WHAT.

- Traditional ConfChem Audience are Chemical Educators
- Paper was Relevant to needs in the Classroom
- Paper Indicated a need to rethink current process and gave tool to do so with
- Both Authors were engaged (in "TagTeam" style)
- Authors responded immediately to questions.
- 9 pages of Paper (including images)
- 25 pages of Discussion

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 7:

[Visualizing and Understanding the Science of Climate Change](#)

Peter Mahaffy, Brian Martin & Anna Schwalfenberg

Sample of Comment Topics

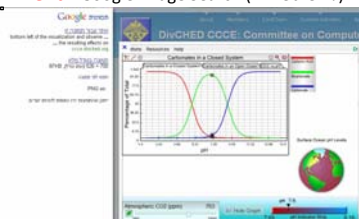
- Syntactic analysis of target audience speech level
- User interaction associated with a predefined curriculum
- Need for these resources to be maintained at same site (DOI issue?)
- Copyright and reuse issues
- General Compliments on Quality of Work

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 7:

[Visualizing and Understanding the Science of Climate Change](#)

Peter Mahaffy, Brian Martin & Anna Schwalfenberg
Special Comment: Google Image Search (in Hebrew)



Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 7:

[Visualizing and Understanding the Science of Climate Change](#)

Peter Mahaffy, Brian Martin & Anna Schwalfenberg
Special Comment: Through Presentation feature we were able to embed applet into Paper.



Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 8:

[Global Stamp Competition: Chemistry as a Cultural Enterprise](#)

Lida Schoen & Christiane Reiners

Sample of Comment Topics

- Variance between state issued stamps and student issued stamps
- Power of stamp collections in Information Sciences as image mining corpus (vs. text mining corpus)

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 9:

[Chemistry Cartoon Competition: An IYC Activity from Physical Chemistry in IUPAC](#)

Jim McQuillan

Sample of Comment Topics

- Possibility of Open Notebook Science based projects
- Encouragement to continue video film competition
- Encouragement to make this an annual event
- Need to archive entries and have sufficient copyright to share/distribute them

**Virtual Colloquium to Sustain and Celebrate IYC 2011
Initiatives in Global Chemical Education**

Paper 9:

Chemistry Cartoon Competition: An IYC Activity from Physical Chemistry in IUPAC

Jim McQuillan July 13: 1041 hits

firm McCoullan July 13: 1041 hits

Jul 9 2012 - 9:34am
Jul 9 2012 - 8:03am
Jul 9 2012 - 8:02am
Jul 9 2012 - 8:01am

<http://www.google.co.uk/imgres?hl=...>
<http://www.google.co.uk/imgres?hl=...>
<http://www.google.co.uk/imgres?hl=...>
<http://www.google.co.uk/imgres?hl=...>

Anonymous details
Anonymous details
Anonymous details

Google Image Searches

Virtual Colloquium to Sustain and Celebrate IYC 2011 Initiatives in Global Chemical Education

Paper 10:

The continuing celebration of IYC 2011: What the IUPAC Polymer Division is doing to keep things going

Christopher K. Ober

Sample of Comment Topics

- Importance of translating videos
- Captioning of Videos
- YouTube has two captioning options
 - Machine transcription
 - Matching author uploaded file to audio. Later can involve translations to multiple languages

**Virtual Colloquium to Sustain and Celebrate IYC 2011
Initiatives in Global Chemical Education**

Paper 11:

MSC100 - The French-Polish Accent of the IYC2011

Robert Guillaumont, Janusz Lipkowski, Barbara
Petelenz, & Jean-Pierre Vairon

Sample of Comment Topics

- \$\$\$

**Virtual Colloquium to Sustain and Celebrate IYC 2011
Initiatives in Global Chemical Education**

Paper 12:

Sustainability and Globalization of Chemistry Education

Mei-Hung Chiu

Sample of Comment Topics

- \$\$\$

**Virtual Colloquium to Sustain and Celebrate IYC 2011
Initiatives in Global Chemical Education**

IYC 2011 National Initiative

Author name

- 595 Reads (July 9, 2012)
- 9 Comments

Abstract

This Atlas is the site of international programs designed to promote public and transnational research on changes in diversity at both local and global scales. This research is built at the site of the *Atlas*, which displays the most clearly diverse data that most of the authors arranged their studies of communities, and many have now moved into new and original research topics of their own.

The authors of the papers have published in *BMJ*:
www.nature.org/subjects/atlases/BMJBjournals/BMJBjournals/atlases largely proves the quality of their work.

Conflict of Interest Statement: The authors have nothing to disclose.

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Citation: <http://dx.doi.org/10.1371/journal.pone.0101001>

Keywords: atlas, diversity, global, local, research, transnational

Relative Size of Paper

Relative Size of Comments



International
Conference on
Chemistry
Education 2014
TORONTO, CANADA

FIRST CIRCULAR

Developing Learning Communities in the Chemical Sciences

July 13-18, 2014

Toronto, Ontario, Canada

www.ICCE2014.org

Dear Colleagues,

We cordially invite you to participate in the 23rd IUPAC International Conference on Chemical Education to be held at the University of Toronto from 13-18 July, 2014. This will be the first time since 1989 that this conference has come to Canada.

The theme of the conference is communications. Our goal is to investigate how best to forge global links in the chemistry teaching and learning communities and to consider best practices in exploiting technological advances in communications in order to establish innovative learning partnerships. Symposia will focus on communication amongst chemistry professionals, educators, students and the lay community.

We look forward to welcoming the global chemical education community to Canada.

Andrew Dicks

Co-chairs

Judith Poë

Conference themes and format

1. Communicating across the Educational Levels
2. Outreach to the Lay Community
3. International Student Learning Communities
4. Technological Support of Chemistry Learning
5. Greening Attitudes in Chemistry Education
6. Interdisciplinary Collaborations

Symposia and workshops that support these themes are solicited. Your ideas are key to making ICCE2014 a successful event. We look forward to hearing your thoughts on the development of the conference program.

The conference will consist of plenary lectures, submitted oral and poster presentations, panel discussions, roundtable discussions as well as an exhibition. Recently renovated, state-of-the art laboratories are available for practical workshops.

Language

The official language of the conference will be English.

Important Dates

July 2013	deadline for symposia/workshop submissions
Oct. 2013	second circular abstract submission opens
Jan. 2014	deadline for abstract submission registration opens
Mar. 2014	notice of abstract acceptance
May 2014	deadline for early registration fees
July 2014	ICCE2014

IUPAC visa statement

IUPAC sponsorship implies that entry visas will be granted to all *bona fide* chemists, provided application is made not less than six months in advance. If a visa is not granted two months prior to the meeting, the applicant should notify the conference secretary and the IUPAC secretariat.

Canadian visa information

Information regarding visas to enter Canada can be found at www.cic.gc.ca/english/visit/visas.asp.



About Toronto

Toronto is Canada's largest city and its cultural, entertainment and financial capital. The city is the 5th largest in North America with more than 5.5 million people in the Greater Toronto Area. One-quarter of Canada's population is located within 160 km of the city, mainly along the corridor leading to Niagara Falls. Its southern border is Lake Ontario which separates it from the State of New York. It is a hub of multiculturalism as illustrated by its web site which is available in over 50 languages (www.toronto.ca). Multicultural festivals abound throughout the summer months.

Organizing Committee

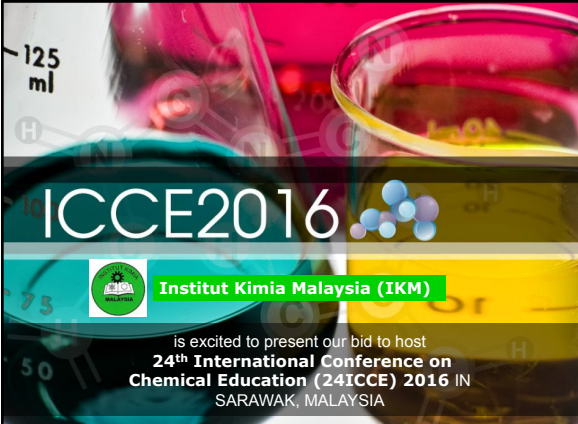
Penny Ashcroft Moore - Secretary/Treasurer
Scott Browning - Poster Session Coordinator
Andrew Dicks - Co-chair
Alen Hadzovic -
Svetlana Mikhaylichenko - Teacher Liaison
Paul Piuino - Fund Raising
Judith Poë - Co-chair
Wanda Restivo - Social Events Coordinator
Effiette Sauer - Social Events Coordinator
David Stone - Lab Workshop Coordinator
Patrick Wong - Webmaster

All correspondence should be addressed to:
icce2014@chem.utoronto.ca

International Advisory Committee

TBA






ICCE2016

Institut Kimia Malaysia (IKM)

is excited to present our bid to host
**24th International Conference on
 Chemical Education (24ICCE) 2016 IN
 SARAWAK, MALAYSIA**



WHY SARAWAK, MALAYSIA

**OUR COMPELLING REASONS WHY
 24th International Conference on Chemical
 Education 24ICCE 2016
 should be held in SARAWAK, MALAYSIA**



WHY SARAWAK WANTS ICCE 2016



Kuching, Sarawak is here



**KEY REASONS WHY SARAWAK,
 MALAYSIA**


1. IKM, Your Local Host
 - vast experience in hosting international meetings
 - strong network of universities and schools
 - strong regional and international industry networks
2. Malaysian Industry & Government Support
 - Ministry of Education, Ministry of Higher Education, education community
3. Malaysia, Tropical Paradise
 - A warm people who treat visitors like friends
 - English is widely used all over Malaysia
 - A multi religious & multi cultural society: peaceful, safe & harmonious
 - Large variety of food; shoppers haven
4. Conference & Accommodation Facilities
 - best value for money in SEA and AP
 - superb infrastructure for conventions, accommodations, transportation



**KEY REASONS WHY SARAWAK,
 MALAYSIA**


5. Centrally located in Asia; easy flight connections; many airlines = Attract new delegates from near & far, especially those who cannot afford long-distance travel.
6. Politically, economically and socially stable and safe.
7. Charming and unique : culture, nature and adventure meets the modern city.
8. Financial support for comprehensive conference marketing plan = increase meeting delegate numbers.
9. Try Sarawak = Conference delegates are seeking fresh new destination (report by ICCA "International Congress and Convention Association")
10. Sarawak's unflinching track record of hosting international conferences since 2007

**ICCE2016
 KUCHING, MALAYSIA**



**an invitation by
 SARAWAK, BORNEO**



REASONS TO ACCEPT OUR BID

THE RIGHT TIME

- ✓ Perfect timing to raise awareness + research in Malaysia and Asia Pacific region!
- ✓ Increased air connections worldwide with great value
- ✓ Fabulous value for money in Asia Pacific

1



FLIGHT ACCESSIBILITY KUCHING

Frequent Flights Into Sarawak

Sarawak can be accessed via efficient air links serviced by 52 airlines and accessible to over 100 scheduled global destinations via Kuala Lumpur, Johor Bharu, Kota Kinabalu and Penang in Peninsular Malaysia as well as 1 hour from Singapore, Brunei and Indonesia.

Currently there is an average of 2,500 flight seats per day into Kuching from Kuala Lumpur as well as the regional hubs mentioned above.

Direct mid to long haul access is available from KLIA and Singapore to:

- 5 Australian and 5 Middle Eastern cities
- 7 North American and African cities
- 9 European cities and
- Several cities in the Asia Pacific region.




REASONS TO ACCEPT OUR BID

THE RIGHT HOST

- ✓ IKM (Institut Kimia Malaysia) is a team of passionate, experienced members 100% committed to delivering a first class scientific programme & seamless congress
- ✓ Support from Malaysia Government
- ✓ Support from SCB & MyCEB (**National and State Convention Bureaux**)
- ✓ Support from the People of Malaysia!

2



REASONS TO ACCEPT OUR BID

FOCUSED EVENT PERFORMANCE MEASURES

Financial	: Membership growth
Learning outcomes	: Participants feedback

EXPERIENCE : AN ASSET

- **QUALITY** International Conferences & Conventions

We're GOOD at this!

Chemistry as a Profession in Malaysia

Chemical analysis is a professional practice in Malaysia regulated by the **Chemists Act 1975**

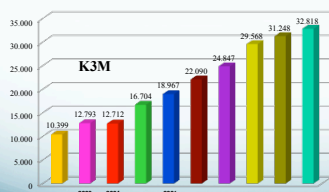
Institut Kimia Malaysia (IKM)

- Registered under the Societies Act 1966 in 1967
- Incorporated under **Chemists Act 1975** in 1977
- Membership: **3,037** as of Jan 2012
- Council comprises 13 elected members with the Director General of Chemistry as Registrar
- IKM Council 2012/13:**



National Malaysian Chemistry Quiz (K₃M)

- Annual quiz open to upper secondary students since 2002
- Participation tripled from 10,024 (2002) to 34,318 (2012)
- Top scorers from K₃M are awarded training for International Chemistry Olympiad (ICHO)



Young Stars:
 •K₃M 2010 Top scorer, **Foo Chee Chong**
 •ICHO 2010 Silver Medalist, **Yeoh Keat Hor**

Invited to IYC 2011 Opening Ceremony in Paris, France in January 2011

Academic Collaborations

- Partnerships to develop chemistry and chemistry-related programmes

- ☐ Universiti Kebangsaan Malaysia (UKM)
- ☐ Universiti Malaya (UM)
- ☐ Universiti Sains Malaysia (USM)
- ☐ Universiti Teknologi Malaysia (UTM)
- ☐ Universiti Putra Malaysia (UPM)
- ☐ Universiti Teknologi MARA (UiTM)
- ☐ Kolej Tunku Abdul Rahman (KTAR)
- ☐ Universiti Malaysia Pahang (UMP)

INSTITUT KIMIA MALAYSIA (IKM)

National & International Affiliations

IKM is a Founding Member*/Member of:

- ☒ Confederation of Scientific and Technological Associations in Malaysia (COSTAM)*
- ☒ Balai Ikhtisas Malaysia (BIM)*
- ☒ Federation of Asian Chemical Societies (FACS)*
- ☒ Pacific Polymer Federation (PPF)
- ☒ Asian Chemical Editorial Society (ACES)
- ☒ Federation of Asian Polymer Societies (FAPS)
- ☒ International Union of Pure and Applied Chemistry (IUPAC)

IKM : INTERNATIONAL RECOGNITION

IYC 2011 Management Committee Meeting in Bratislava, Slovakia on April 16, 2009

International Union of Pure and Applied Chemistry

IKM plays a leading role in many international bodies

- For FACS - IKM President Datuk Dr Soon Ting Kueh is Past President (2007-2009) & Coordinator of Projects (2011-2013)
- PPF, FAPS, ACES and IUPAC
- IKM became a National Adhering Organisation (NAO) of IUPAC in 2009
- For IUPAC International Year of Chemistry (IYC) 2011, **IKM** hosted:
 - CHEMRAWN XIX 2011
 - Global Stamp Competition (GSC) 2011
- IKM also collaborates with: US State Department (USSD), American Chemical Society (ACS) British High Commission (BHC), Royal Society of Chemistry (RSC), National University of Singapore (NUS), Himpunan Kimia Indonesia (HKI), Cambodian Chemical Society (CCS), Organisation for the Prohibition of Chemical Weapons (OPCW)

IKM IN THE YEAR 2011/2012



Prof Nicole Morneau
President
International Union of Pure and Applied Chemistry





- 2011 has been proclaimed as the International Year of Chemistry (IYC) by IUPAC and UNESCO
- IKM celebrated IYC 2011 in a big way with many activities in accordance with the Objectives of IYC 2011
- Launching of IYC 2011 in Paris, France




IKM Delegation at the Launching of IYC 2011 in Paris, France from January 27-28, 2011

FEDERATION OF ASIAN CHEMICAL SOCIETIES

FACS


- IKM is a Founding Member of FACS
- 29 Member Societies from Asia and the Pacific Inaugurated on August 16, 1979 in Bangkok
- FACS 16th General Assembly (16GA) in Bangkok on September 5, 2011



INSTITUT KIMIA MALAYISA (IKM)

MEETING & OTHER FUNCTIONS

- Annual General Meeting
- Karnival Kimia Malaysia (K2M)
- Malaysian Chemical Congress (MCC)
- Regional Seminar on "Total Laboratory Management" (QSEL)
- Kuiz Kimia Kebangsaan Malaysia (K3M)
- Malam Kimia (Chemistry Night)
- Karnival Kimia Malaysia (K2M) 2011
- 13th International Symposium on Extraction Technologies (ExTech) 2011
- 19th IUPAC International Conference on "Chemical Research Applied to World Needs" (CHEMRAWN XIX)
- International Symposium on Women in Science and Engineering (WISE) 2011
- LabAsia 2011



Karnival Kimia Malaysia (K₂M) 2011

Karnival Kimia Malaysia (K₂M) 2011 was a keystone event of IYC 2011 celebrations in Malaysia

Launched April 15, 2011 in Kuala Lumpur by the Honourable Minister, YB Datuk Seri Panglima Dr Maximus Johnity Ongkili

Objective: Enhance public awareness of chemistry and its applications in improving the quality of life

K₂M 2011 was subsequently held in 6 other major Malaysian States

Chemistry – Our Life, Our Future

Launching of K₂M 2011 in Pusat Sains Negara on April 15, 2011

Karnival Kimia Malaysia (K₂M) 2011







K₂M 2011 at Pusat Sains Negara, Kuala Lumpur from April 15-17, 2011

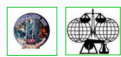
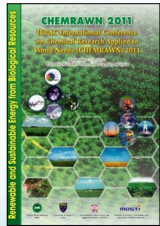
CHEMRAWN XIX




19th IUPAC International Conference on "Chemical Research Applied to World Needs" (CHEMRAWN XIX)

- ❖ Held in Kuala Lumpur, Malaysia from September 27-29, 2011 with the theme "Bioenergy and Biomaterials from Renewable Resources"

Scientific programme include:

- ❖ Biomaterials
- ❖ Bioethanol & Biodiesel
- ❖ Biogas
- ❖ Biomass including Biomass to Liquid (BTL)
- ❖ Green energy from algae
- ❖ Renewables from effluent and sewerage
- ❖ Other renewables and sustainable energy sources and materials
- ❖ Food vs fuel vs carbon footprints

CHEMRAWN/ExTech/WISE/LabAsia Banquet



IKM YEAR 2012-2016



Presentation of IKM Gold Medal 2011 to Prof. Datuk Dr. Sukman Samani



Presentation of Tan Sri Datuk Amar Stephen KT Yong Award 2011 to Dr. Kok Leong

IKM 2012/2013

- Indonesia Total Laboratory Management Symposium (ITLMS) 2012
- 17th Malaysian Chemical Congress (17MCC)
- Cambodian Malaysian Chemical Conference (CMCC) 2012

IKM 2013/2014

- International Conference on Water & Wastewater Management (ICWWM) 2013
- LabAsia 2013
- ChemAsia 2013

IKM 2015

- 4th Federation of Asian Polymer Societies (FAPS) Polymer Congress 2015
- LabAsia 2015

IKM 2016

- 24th International Conference on Chemical Education (24ICCE) 2016 (To be confirmed)
- 19th Malaysian Chemical Congress (19MCC)

IKM YEAR 2012-2014



17th Malaysian Chemical Congress 2012
October 15-17, 2012
PWTC, Kuala Lumpur



Cambodian Malaysian Chemical Conference 2012
October 19-21, 2012
Siem Reap, Cambodia



International Conference on Water and Wastewater Management (ICWWM) 2013
October 8-10, 2013
Kuala Lumpur, Malaysia

TAKING EXTRA CARE OF YOUR NEEDS

THE RIGHT SPONSORSHIP

- ✓ Sarawak Convention Bureau (State Government) your one-stop-advisory centre!
- ✓ Confirmed sponsorship of RM300,000 (USD100,000)

3

REASONS TO ACCEPT OUR BID

FINANCIAL BACKING : WHO?

Commitments for Funding:

- ✓ Sarawak State Government
- ✓ Sarawak Convention Bureau
- ✓ MyCEB (Malaysian Convention & Exhibition Bureau)
- ✓ Academy of Sciences Malaysia (ASM)
- ✓ Ministry of Science, Technology & Innovation (MOSTI)

..... & Growing!

REASONS TO ACCEPT OUR BID

THE RIGHT PROGRAM

An interesting blend of all that is good and current in Management Science trends.

4

24ICCE Theme & Programme

Theme – Chemical Education for Socio-economic Transformation

- ❖ Teaching & Learning of Chemistry at the secondary level
- ❖ Chemistry/science teacher education including pre- & post
- ❖ New technologies in chemical education including web-based, multimedia and e-learning
- ❖ Laboratory classes in chemical education including microscale chemistry
- ❖ Critical analysis of chemistry curricula & textbooks
- ❖ Tertiary chemistry education & lifelong learning
- ❖ Research in Chemical Education including ethics
- ❖ Green chemistry and environmental chemistry education
- ❖ Public awareness and appreciation of chemistry
- ❖ International Chemistry Olympiad (ICHO)

MORE REASONS TO ACCEPT OUR BID

SUPERIOR COMMUNICATION

We acknowledge the importance of

- Transparency
- Thoroughness
- Regular communication

5

Our promise:

"Quarterly reports on Conference activity will be sent to the ICCE Protemp Committee."

MORE REASONS TO ACCEPT OUR BID

THE WARMEST INVITATION

IKM & Sarawak

Extends a warm invitation to CCE members to

- visit the Conference Venue & Facilities
- sample the culture, adventure and mystery of Sarawak before 24ICCE 2016

6

DESTINATION PLUS

Safe, Peaceful Destination

- ✓ Stable democratic government.

Multi-lingual Communications

- ✓ Most people speak English.

Value for Money

- ✓ Asia's most competitive ground and accommodation costs.

Warm Weather

- ✓ Moderate 20-30 Celcius

QUICK NOTES ON COSTS

- 5 star restaurants: <US\$50
- Simple meal <US\$3
- Taxi fares (Airport to city) < US\$5-10 each way
- 4 hotel nights + 1 city tour + meals + souvenirs = RM2300 (US\$686) = 40% cheaper than Japan, Hong Kong, Korea, Taiwan, Shanghai or Bangkok

TAKING EXTRA CARE OF YOUR NEEDS

THE RIGHT CONGRESS FOR ALL

Registration Fees

- ✓ Reasonable & attractive delegate fees
- ✓ Special rate for members
- ✓ Special rate for students & some scholarships for less privileged or academic stars
- ✓ **Expected Participants: 500 pax**

7

19th INTERNATIONAL SOCIETY OF RADIOGRAPHERS & RADIOLOGICAL TECHNOLOGIST WORLD CONGRESS 2016

ACCOMODATION



HOTEL	Single Occupancy Room (Night Price * USD)
Hilton Kuching Hotel (5*)	172.00
Pullman Kuching Hotel (5*)	155.00
Four Points (4*)	128.00
Riverside Majestic (5*)	126.00
Grand Margherita Hotel (5*)	117.00
Merdeka Palace Hotel and Suites (5*)	103.00

- Kuching currently has a total of 2821 rooms which are located 15 minutes from the airport.
- 1200 comfortable, unique rooms below USD50 per night within the city.

Sheraton Hilton Marriott pullman



AFFORDABLE WORLD CLASS HOTELS

Category	Type	No. of Room	Avg. Cost – Daily Rates
5 Star	Single / Double	769	RM350-RM500 (USD101-USD145)
4 Star	Single / Double	288	RM300-RM450 (USD87-USD134)
3 Star	Single / Double	851	RM200-RM350 (USD87-USD101)

*All hotel rates are correct at the time of printing and quoted per night, exclusive of 15% service & government tax.

9




ACCOMMODATION

PULLMAN KUCHING




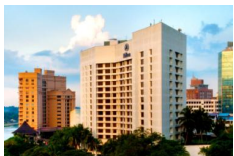



MAX 389 ROOMS




ACCOMMODATION

HILTON KUCHING








MAX 315 ROOMS



ACCOMMODATION

FOUR POINTS BY SHERATON

MAX 421 ROOMS




ACCOMMODATION

GRAND MARGHERITA








MAX 288 ROOMS



ACCOMMODATION

RIVERSIDE MAJESTIC

MAX 241 ROOMS

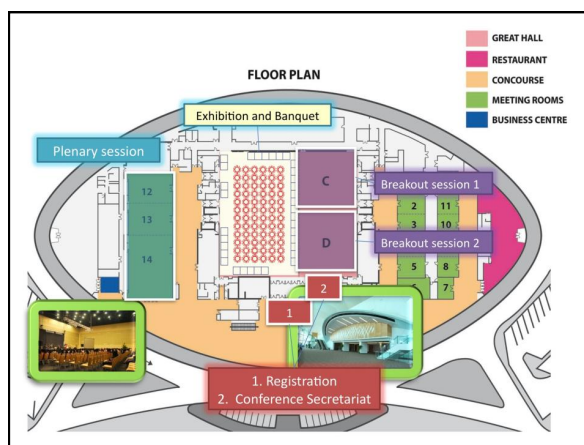
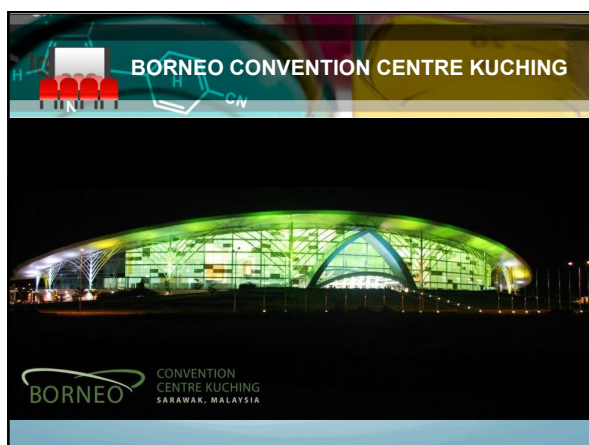


BORNEO CONVENTION CENTRE KUCHING

PURPOSE BUILT FACILITIES

- ✓ "Green Appeal"; green practices and architecture
- ✓ Easy logistics; world-class facilities on one level
- ✓ Unique, tranquil surroundings outside city centre

10



WORLD-CLASS MEETING FACILITIES

MAIN FEATURES

- ✓ Plenary Hall to seat up to 5,000 delegates on tiered and flat seating
- ✓ Banquet facilities for 2,000
- ✓ Great Hall boasting a space of 2,793m² (57m x 49m)
- ✓ Pillar-free exhibition space
- ✓ 14 Meeting Rooms with the capacity for 40 to 1100 delegates in varying combinations
- ✓ 700 car parking spaces

The Borneo Convention Centre Kuching is a brand-new purpose built convention centre situated in Kuching, Sarawak. The BCCK offers the unique opportunity to experience world-class conferences in exotic, tropical Sarawak.

BORNEO CONVENTION CENTRE KUCHING SARAWAK, MALAYSIA

SOCIAL EVENTS / CHARITY GALA

The 24ICCE 2016 offers delegates unique and once in a lifetime experience during their visit with special theme party awaits them at the congress social events.

Charity Campaign Gala Dinner to raise fund for the Physical Disability Children Society in Sarawak

ICCE2016
KUCHING, MALAYSIA

- Handcraft Conference bag
- Recycled conference tag/lanyard
- Charity/Fundraising Gala Dinner



ICCE2016
KUCHING, MALAYSIA


IKM

24ICCE 2016


In Asia's most exotic new destination



Bid Committee




A/Prof Adam J Bridgeman




Dr Siegbert A Schmid

- Chemistry Education Division, Royal Australian Chemical Institute.
- ChemNet – Network of Australian Tertiary Chemistry Educators.
- SaMnet – Science and Mathematics Network of Australian Educators.
- Institute for Innovation in Science and Mathematics Education, The University of Sydney.



Dr Adrian V George



Why Sydney?

- A magnificent city set on the world's finest natural harbour.
- High profile and impressive track record of hosting major events.
- Sydney is easily accessible to delegates from around the world and is the international gateway to Australia.
- Close proximity to Asia Pacific provides direct access to one of the largest growing delegate bases.
- World class conference venues and an extensive range of accommodation.
- Pre and post touring options to satisfy and delight delegates and partners.



Destination Sydney, Australia




International Access

37 international passenger airlines with more than 580 flights arriving per week




Conference Venue



 The University of Sydney



Accommodation



No. of Establishments	Star Rating	Average cost per room per night \$AUD
107	3 Star	\$127.58
123	4 Star	\$173.53
23	5 Star	\$250.09

Source: Australian Bureau of Statistics, Tourist Accommodation, Sept 2011



Student and Budget Accommodation

Name of Property	Features	Rates per night (AUD) from
Bilabong Gardens	10 minute walk to the University. Fully equipped kitchen, coin operated laundry.	\$50
Alshan Guest House	10 minute walk to the University. Fully equipped kitchen, coin operated laundry and wireless broadband.	\$70
Glebe Village	5 minute bus ride or 15-20 minute walk to the University Backpacker hostel in renovated Victorian villa.	\$70
Royal Hotel	5 minute walk to the University. Private rooms with shared bathroom, common kitchen, laundry and TV room.	\$79
Cathie Leslie Bed and Breakfast	5 minute bus ride or 15 minute walk to the University Cable TV, a mini fridge and tea/coffee making facilities.	\$80
Glebe Point YHA	5 minute bus ride or 15 minute walk to the University Cable TV, a mini fridge and tea/coffee making facilities.	\$80
Harolden	5-10 minute walk to the University. Two bedrooms available - one single and one double (share bathroom).	\$80

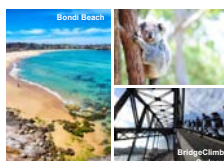


Touring Options

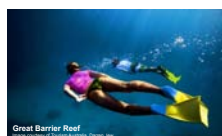
19 must-dos in Sydney

- 1 Climb the Sydney Harbour Bridge on a BridgeClimb experience. You'll enjoy 360-degree views of the harbour city.
- 2 Take a tour of the Sydney Opera House for a behind-the-scenes look at this World Heritage listed venue or enjoy a top-notch performance.
- 3 Stroll along the famous Bondi to Bronte coastal walk, taking in the panoramic views of jetties, parks and beaches by the most picturesque coastal. Take the drive to Bondi Beach, the most celebrated beach in Australia with its golden sands, great surf and vibrant atmosphere.
- 4 See Australia's iconic animals as well as rare and endangered species that inhabit the world at Taronga Zoo, just west of the city.
- 5 Shop up a storm - Sydney offers a decadent mix of luxury malls, boutiques and cutting-edge fashion by local designers.

- 6 Take a sunset light to land and witness the city's stunning harbour and the ever-changing skyline only along the coast, from the air.
- 7 Experience a guided walking tour of the Royal Botanic Gardens, where the original inhabitants of Sydney gathered regularly for food and medicine.
- 8 Enjoy dining out by the harbour on the harbour and enjoy a guided tour of the city's most iconic landmarks.
- 9 Explore the waterways of Sydney Harbour on a yacht, jet boat or simply by the water in the world's largest natural harbour.
- 10 Climb an old mine, located in a world-class region in town, including the amazing First Sydney Harbour, the historic Great Underground Train Tunnel and a number of engineering marvels.



Beyond Sydney



Support



47th General Assembly & 44th World Chemistry Congress

Website: <http://www.iupac2013.org>



47th General Assembly
9 - 15 August, 2013

44th World Chemistry Congress
11 - 16 August, 2013



Home

Letter from Turkish Chemical Society

Turkish Chemical Society

Scientific Topics

International Advisory Board

Support for Young Chemists

Support for Developing Countries

47th General Assembly

44th World Chemistry Congress

Congress Venue

Registration

Accommodation

Social Tours

Contact

Scientific Topics

- Clean Energy Through Chemistry
- Chemical Analysis
- Chemical Synthesis
- Physical Chemistry
- Macro and Nano Science and Technology
- Environmental Chemistry, Green and Sustainable Chemistry
- Life Chemistry
- Materials Science
- Chemistry Education**
 - Convenors: Mustafa Sozbulir, F. Gulay Kirbaslar, Musa Sahin
 - Invited Speakers: Alipaşa AYAS, Mei-Hung CHIU, Sibel ERDURAN, Peter MAHAFFY, Ilka PARCHMANN, Marcy TOWNS
 - Innovative Learning and Teaching Practices in Chemistry
 - Chemistry Teacher Training
 - History and Nature of Chemistry, and Ethics
 - Chemistry Curriculum and Evaluation
 - Informal-Outdoor Chemistry Education
 - Green Chemistry and Environmental Education
 - Teaching Chemistry for Disadvantages Groups
- Chemical Industry and Innovation



IUPAC
International Union of
Pure and Applied Chemistry



**TURKISH
CHEMICAL SOCIETY**

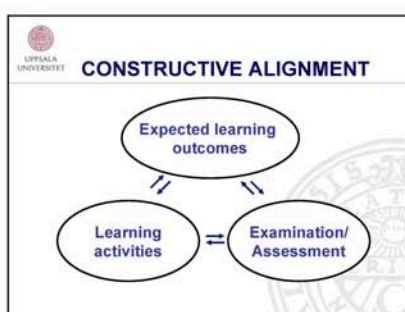
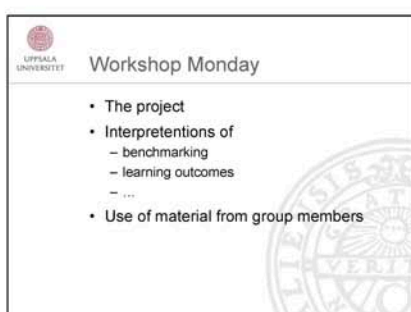
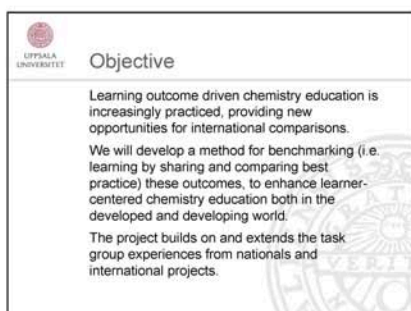
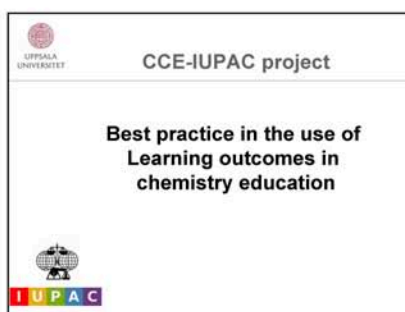


**What's
this?**

Istanbul welcomes you!

Appendix 2 slides Maja Elmgren

14-05-13



UPPSALA
UNIVERSITET

How do the different levels of learning outcomes correspond to each other in your country or at your university?

How do you know that the learning outcomes affect learning activities and assessment?

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Over arching QF with Learning outcomes

- Eurobachelor - Europe
- ACS guidelines - USA
- Learning and teaching Academic Standards – Australien
- Both similar and different?
- Applicable? Useful? Yes!

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Self reflection

- Analysis of local learning outcomes in relation to some overarching QF; national and or international descriptors
- LO modules in relation to LO program – Program matrix
- Alignment with learning activities and assessment

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Program matrix

	Course 1	Course 2	Course 3	Course 4	Course 5	Course 6	Course 7	Course 8	Course 9	...
Learning outcome 1		X		X					X	
Learning outcome 2	X					X				
Learning outcome 3				X			X			
Learning outcome 4										
Learning outcome 5									X	
Learning outcome 6	X				X					
Learning outcome 7										
Learning outcome 8		X					X			
...										

UPPSALA
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Self reflection

- What material must be provided?
- In which format?
- What questions need to be addressed?
- With analysis!

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UNIVERSITET

Until workshop 2013

- Skype meetings and drop box communication – through the year
- Send suggestions for the self reflection including questions after discussions with teachers – Deadline 1 November (All)
- Prepare instructions/guidelines for self reflection – Deadline 1 January (Maja and Eva)
- Make self reflection – Deadline 1 May 2013
- Workshop with peer review – August 2013, one day before the CCE-meeting

14-05-13


UPPSALA
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Objective

Learning outcome driven chemistry education is increasingly practiced, providing new opportunities for international comparisons.

We will develop a method for benchmarking (i.e. learning by sharing and comparing best practice) these outcomes, to enhance learner-centered chemistry education both in the developed and developing world.

The project builds on and extends the task group experiences from national and international projects.






International Standards for Chemistry Education Group

Members Joined the discussion on July 15 & 17.

July 15 (16:50-17:30): Mei-Hung, Rachel, Mustafa

July 17 (11:20-13:00): Mei-Hung (Taiwan),
Rachel (Israel)
Mustafa (Turkey)
Suzanne (NZ)





Terms

Standards? Guidelines ? Competence?

Competencies

International Competencies for Chemistry Education


- Hierarchy or a representation of competencies ?

Compulsory education

Taiwan (6, 3, 3)
Turkey (4, 4, 4)
NZ (6, 2, 4, 1)
Israel (6, 3, 3)
USA

When does SCIENCE start ?



Documents for Competencies

- Statements (embedded interests)
- Competencies
- Learning progression
- Learning Outcomes
- Assessment
- Professional development