#### **IUPAC COMMITTEE ON CHEMISTRY EDUCATION**

#### Meeting at the

## 21<sup>st</sup> International Conference on Chemistry Education

#### Taipei, Taiwan Minutes

#### Meeting times:

- Sunday, August 8 9:00–12:00 and 13:00–16:30 (joint lunch at restaurant)
- Wednesday, August 11 17:30 21:45 (catered meal)

#### Meeting location:

Room SE204,

2nd Floor of Building of Science Education,

Graduate Institute of Science Education,

National Taiwan Normal University

Address: No. 88, Ting-Jou Rd., sec. 4, Taipei, Taiwan

會議地點:國立臺灣師範大學公館校區

科學教育研究所

科教大樓二樓SE204室

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Please note that the supporting materials listed in parenthesis after some items can be downloaded from the IUPAC web site:

http://www.iupac.org/standing/cce/agenda10/

#### Attendees:

#### Sunday:

Peter G. Mahaffy (Canada) - Chair

Eva Åkesson (Sweden) – Vice-Chair, secretary and division liaison

#### **Titular Members:**

Mei-Hung Chiu (China/Taipei) Choon H. Do (Korea) Ram S. Lamba (Puerto Rico) Lida Schoen (Netherlands) Mustafa Sözbilir (Turkey)

#### Associate Members (Divisional Representatives)

Richard Hartshorn (New Zealand) Chemical Nomenclature and Structural Representation Maria Filomena Camões (Portugal) Analytical Chemistry

#### **National Representatives**

Tony Wright (Australia) Liberato Cardellini (Italy) Erica Steenberg (South Africa) Masahiro Kamata (Japan) Morton Z. Hoffman – *Conference coordinator* (United States) Nina H. K. Aremo (Finland) Abdulaziz A. Al-Najjar (Kuwait) Ting Kueh Soon (Malaysia)

#### Guests

Ilka Parchmann (Germany)

#### Wednesday:

Peter G. Mahaffy (Canada) - Chair

Eva Åkesson (Sweden) – Vice-Chair, secretary and division liaison

#### **Titular Members:**

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#### Guests

Ilka Parchmann (Germany) Rachel M (Israel) Lohdip Nandul (Nigeria)

#### 1. Welcome, introduction and orientation

[CCE2010\_001]

Welcome address from the chair and presentation round of all attendees. **Opening address:** 

The chair welcomed everyone to the CCE meeting, which occurs just a few months before the launch of the International Year of Chemistry. He also noted the significance of meeting just before and during the International Conference on Chemistry Education, with its theme of Sustainability, and highlighted ways in which the conference can be used to spread the word and find partners for IUPAC and CCE activities. He extended heartfelt thanks to Mei Hung Chui for organizing ICCE and hosting this CCE meeting.

Reports missing, 5.2 and 11.3 *Agenda approved* 

#### 2. Minutes of meeting in Glasgow 2009,

[CCE2010\_002]

Minutes approved

#### 3. Matters arising from the minutes of CCE and new Business

To consider matters arising that are not on the agenda

a) IUPAC web site developments (Peter Mahaffy)

The division presidents and standing committee chairs have expressed dissatisfaction concerning the IUPAC web site as a tool for internal and external communication. The Bureau and the Secretariat are addressing the issue. This needs to be addressed urgently; The Committee on printed and electronic publications is looking into this.

#### 4. Chair's report to IUPAC Bureau

[CCE2010\_004]

Brief oral report from the chair.

Focus on:

Item 2: CCE Priorities for 2010-2011 biennium

Item 3: CCE role in the International Year of Chemistry, which appears later on our agenda.

Item 4: IYC Opportunities and Challenges Project. Describes the opportunities and challenges. The fundraising for IYC are behind, raised for your attention, rescaling and funding from CCE project budget. The message is: Do not step back, we are finding solutions.

A discussion followed concerning status of CCE functioning as a committee versus as an education division. Both advantages and disadvantages were discussed.

#### 5. Subcommittee reports

Presentation and discussion of past activities, membership, future plans

5.1. Chemistry for Education Development (Mei-Hung Chiu) [CCE2010\_005.1] PP-presentation of the subcommittee by the chair, Mei-Hung Chiu, Meeting of the subcommittee: 7 August 2010. Reports on NICE, YAC (Young Ambassadors for Chemistry), Marie Curie book, the final version will be done by the end of March. Reports on Indonesia and Cambodia FCP (Flying chemist program)

#### **5.2.** IYC Education Subcommittee (M Sözbilir, T Wright)

The subcommittees work focus on several projects which are items later on the agenda and will therefore not be reported separately.

#### **5.3.** Subcommittee review

Brief historical review provided by the CCE chair

Question: Is the subcommittee structure appropriate for the future? New subcommittee ought to emerge.

Suggestion: Learner centered component, it might be a good idea to have a subcommittee on this theme. It resonates well with the CCE mission and also with global trends.

A break out session with a group addressing this issue in the afternoon will come back with a suggestion. The subcommittee gets the assignment during the meetings in Taipei to state a couple of lines of what the mission of this new committee could be.

### **6. Report from Projects group** (M Sözbilir)

[CCE2010\_006]

Oral report from the chair Mustafa Sözbilir

Final reports are missing from several finished projects.

Strong encouragement to everybody involved in these projects to supply the final reports.

- 6.1. Membership,
- **6.2.** Review procedure
- **6.3.** Project Budget
- **6.4.** Completed projects

- 6.5. Current Projects
- **6.6.** Projects under consideration
- **6.7.** Future projects

Textbook analysis (MHC).

Movie clips competition (MHC)

Platform ready, encourage to join! Those who are interested, contact MHC Benchmarking of learning outcomes (EÅ)

Chemistry running into biochemistry (TW)

Teacher- status, salary, attract the bright students, train teachers Like the FCP, also to invite developing countries to ICCE, CCE might give traveling awards.

Chemistry Olympiad: similar but different competition.

#### 7. ICCE programme

**7.1.** 21<sup>st</sup> ICCE Taiwan 2010 (Mei-Hung Chiu) [CCE2010\_007.1]

Presentation from the chair Mei-Hung Chiu of 21st ICCE

150 oral presentations and 87 posters from over 40 countries

Presidential panel: chemistry education and sustainability

5 workshops

1 chemical demonstration (from Taiwan)

Awards: 2 distinguished contribution to chemistry, educational awards, 4 IUPAC travel scholarship (will be given at the opening ceremony)

Thanks and congratulations from CCE to Mei-Hung Chiu!

**7.2.** 22<sup>nd</sup> ICCE 2012 (Liberato Cardellini) [CCE2010\_007.2]

PP- presentation on 22<sup>nd</sup> ICCE- ERICE July 15-20 2012 in Rome by Liberato Cardellini, a joint conference with ICCE- ECRICE, European Conference on Research in Chemical Education.

Theme: Stimulating reflection and catalyzing change.

Web site: www.22icce.org

A planning meeting will take place during the 21st ICCE conference.

**7.3.** Considerations for 2014 and beyond (Morton Hoffman) [CCE2010\_007.3] Oral report from Morton Hoffman. Expression of interest from Toronto presented by Morton Hoffman.

Site selection will be done next year at the CCE meeting during the General Assembly in Puerto Rico.

- **7.4.** Creation of a ongoing manual for ICCE (Morton Hoffman) Status: On its way with input from previous organizers.
- **7.5.** Other Educational Conferences (Morton Hoffman) [CCE2010\_007.5] Everybody is invited to add to the list. In particular conferences in relation to IYC celebration. Send what is missing in an email to Morton Hoffman.

#### 8. Administrative matters

**8.1.** Finance (Peter Mahaffy)

Project budget
Operating budget

Biannual 2010-2011: 20 000 dollars project – 20 000 dollars operational budget

Approx 6000 dollar left in operations, 4000 left uncommitted in project budget Remember: IUPAC strategic fund can be tapped especially for IYC project

**8.2.** Membership – Officers, Subcommittee Chairs, TM appointments, Conference Coordinator (Peter Mahaffy)

Oral report from Eva Åkesson. Report from the ad hoc committee appointed by the chair distributed at the meeting.

The ad hoc committee recommends a procedure with a nominating committee. Agreed for NRs: 4 year renewable with nominating procedure.

The group will formulize and finalize a procedure. Thanks to the committee from the chair!

#### 9. Interaction with Divisions and Standing Committees

**9.1.** Report from Divisional Liaison Officer (Eva Åkesson) [CCE2010\_009.1] There is and increased interaction with the divisions and an increased presence of AMs at CCE meetings. The Divisional Liaison Officer and chair will visit all divisions at the GA 2011 Puerto Rico.

Written reports from Division I, III and VII
Oral report from Richard Hartshorn Division VIII

**9.2.** Contributions from Divisional Representatives and standing committee chairs Oral report form Filomena Camoes Division V,

Div V, Analytical Chemistry, through the participation of its delegate on the CCE (M. Filomena Camoes) is collaborating actively on Project No. 2010-011-1-050: Global Chemistry Experiment for the International Year of Chemistry — Design and Development<a href="http://www.iupac.org/web/ins/2010-011-1-050">http://www.iupac.org/web/ins/2010-011-1-050</a>

The Division intends to further contribute to the activities of the IYC2011, namely through the preparation of some educational material on the scientific topics pertaining to the Experiment, which will happen from now onwards once the Global Experiment has come to a practically complete definition; this action will be coordinated by the Division members M Filomena Camoes, Clara Magalhaes and Yngvar Thomassen.

**9.3.** The development of an isotopic periodic table for the educational community **[CCE2010 009.3]** 

PP-presentation by the chair.

Break out group to answer the questions; Tony and Ram volunteer to formulate a response

#### 10. Review of activities

- **10.1.** Flying Chemist Program (FCP) (Mei-Hung Chiu) **[CCE2010\_010.1]**PP- Presentation from Mei-Hung Chiu
  4<sup>th</sup> FCP in Croatia November 2010 is approved and 5<sup>th</sup> FCP in Ethiopia
  February 2011 soon being finalized. Place for the next FCP might be in Latin America
- **10.2.** YAC Program (Lida Schoen) [CCE2010\_010.2] PP-presentation by Lida Schoen. YAC, young ambassadors of chemistry in collaboration with SAW, Science across the world.
- 10.3. UN Decade for Education for Sustainable Development (Natalia Tarasova) [CCE2010\_010.3]Brief summary by the chair
- **10.4.** Development of a framework of priorities for CCE **[CCE2010\_010.4]**Comments from the chair. Recommendations serve us well as information and framework as guidance for priorities for the next biannual. Include the framework of priorities for CCE in the sub group on subcommittee discussion.

Thanks to the task group!

- 10.5. Who can write a website review for Chemistry International of these resources? http://www.chem1.com/chemed/http://www.chem1.com/acad/sci/aboutwater.html We encourage everybody to look at these, pick it up on Wednesday. Tony Wright.
- **10.6.** Future activities

  Discussion continues on Wednesday

#### 11.IYC 2011

**11.1.** Reports from NRs

[CCE2010\_011.1]

Highlights of the planned events.

Written NR-reports also provided from Puerto Rico, Malaysia, Finland, Korea and Sweden at the meeting. These will be included in "post-agenda package". Short complementary oral reports were given from the present NRs.

Oral report from Nigeria – Lohdip

Oral report from Portugal –Filomina - www.spq.pt

All are encouraged to post item in Face book on International Year of Chemistry 2011. Post at least one item during the conference this week, and the ambition level later on ought to be at least one item per month. Javier has

done a great job with the page more or less alone for a year. Let us all help out and make the page livelier.

url: http://www.facebook.com/home.php?sk=group\_128264461150

# **11.2.** Tool kits for celebrating national chemistry days and weeks (M Sözbilir) [CCE2010\_011.2]

Report from Mustafa Sözbilir. The project plan was just approved. Sent out, replies from only from 8 counties.

from Mustafa's minutes:

Use members in the group for different regions instead of official paths to get more information and replies. Each person will be responsible for the collection and distribution of information coming out of the Task Group and pairing of countries in the region through the federation of chemical societies around the world. Each person surveys the web sites for the IYC activities and the contact persons' details in the countries in their responsible region and posts them to IYC 2011 official web site.

Encourage to use the official logo for IYC 2011.

University professors, people from chemical industry and students (chemistry, chemistry engineering, chemistry teacher training, science education, students from chemistry related departments) are recommended to go to schools to enlighten students and parents about chemistry, chemical industry and its role in our life. Similarly students and parents should be invited to the universities and chemical industries (open house days/weeks) to be informed about chemistry, chemical industry and its role in life. Recommendation from the group: Teachers should be involved to reach the general public as they have the primary contact with students.

As a result of the project in November 2010 Task Group will develop a toolkit about IYC2011 activities that will be sent out to IUPAC with a request to be forwarded by UNESCO to representatives in its member states to motivate governmental support/involvement in the local activities (Julia Hassler from UNESCO will be the contact).

Pairing- can we do this for the first time during IYC, and then maybe to continue in order to sustain?

Can Lohdip help out in Africa? Yes! IYC global management committee would like to have a report.

# **11.3.** Global experiments (T. Wright) Oral report from Tony Wright.

Ambition: The biggest experiment ever! (Counting participants) Invitation to you to help with the next step: Let the world know!

Simple experiments at different level of sophistication: Water came out as the best theme. Clear educational outcome is a must, otherwise we do not have the teachers with us.

- Measure quality of water
- Water treatment

Filter

Salinity

Acidity

Solar still

Data posted on the web.

#### Distribution?

Enlist chemical societies; invite them to take the resources and implementation to use their countries.

A letter will be sent to the societies in conjunction to publication of the manuscript that is prepared for next issue of CI. You all have to be ambassadors and get the societies to open and read the letter. Link up with UNESCO. Maybe founding can come through European Schoolnet Give the maximum time for students to participate, all time to the closing in December.

There will be a presentation tomorrow at the conference

Thanks to all who contributes! Great achievement with a gigantic task.

## **11.4.** Chemistry as a cultural activity (C. Reiners) [CCE2010\_011.4] PP-presentation by Lida Schoen

The project under review in the project group

Want to launch it at the opening in Paris.

Collaboration with SAW, Science Across the World, making use of its infrastructure. See following web page:

http://www.scienceacross.org/index.cfm?fuseaction=content.showcontent&node=697

Correctness in information? Important in the competition?

#### Lida: clarify the second part!

2<sup>nd</sup> project initiated in Glasgow, almost there!

## 11.5. Visualizing the Science of Climate Change (P. Mahaffy)

#### [CCE2010 011.5]

Short report from PM. 9 modules in total are planned but the progress has slowed down due to personnel turnover at one of the partners. 3 modules are more or less done at this date. They are completely delivered electronically. The ambition is to launch half of the modules early in IYC2011 at the IYC launch in Paris. There is a great deal of interest!

**11.6.** Joint symposium in Puerto Rico [CCE2010\_011.6] Suggestion from Brigitte Belgium, 200-anniversary of Avogadro's number, already in the program for Puerto Rico.

#### **11.7.** Collaborations

**11.7.1.** EuCHeMS, ECRICE (Ilka Parchmann)

Joint proposal, not yet successful in getting funding. Meeting took place in Krakow. Many ideas like calendar,

chemical story about carbon atom.

Web site is not up yet.

Initiate every society pay for at least one high school

teacher to come to Rome.

**11.7.2.** FASC (Temechegn Engida)

Nothing reported

**11.7.3.** Relationship with Chemical Heritage Foundation, USA (Peter Mahaffy)

Opening of IYC in USA

11.7.4. OPCW Collaborations (Peter Mahaffy) [CCE2010\_011.7.4]

Short report in agenda package

11.7.5. Chromedia collaborations [CCE2010 011.7.5]

Short report in agenda package

11.8. Celebrations of Marie Curie and women in chemistry (Peter Mahaffy)PM referring to Natalia's report.Questions: post them on the bulletin board to NataliaMustafa will post a reply to Natalia.

#### 12. Break out session (Sunday afternoon and Wednesday evening)

Several subgroups are identified. Coordinator indicated in bold below for each group. Reports from the groups in appendices to the minutes.

Isotope-project, to answer the questions
Tony Wright, Ram Lamba, Peter Mahaffy
Update included in the Chair's report for Puerto Rico

Subcommittee revision: focus inquiry based learning Soon Tueh Keuh, Ilka Parchmann, Nina, **Ram Lamda**, Kamata, Liberato

Global Experiment - Water-. **Tony Wright**, Erica, Filomina

meeting Monday evening-activities format to wider distribution. Templates.

Procedure Membership refine proposal – **Eva Åkesson,** Morton Hoffman, Richard Hartshorn, Lida Schoen Prepared via mail after the conference

#### Report of ICCE/ECRICE 2012/

Choon Do, **Morton Hoffman**, Eva Åkesson, Peter Mahaffy, Ilka Parchmann, Liberato,

Written report from Mort included in the end of the minutes

Chemistry as a culture activity- already reported Choon Do, Liberato, **Lida Schoen** 

YAC

Erica Steenberg, **Lida Schoen**, Nina, Morton Hoffman Lida writes a summary

Mei-Hung's textbook analysis

Meet on Monday. Some consensus, secondary school, acid and base, easiest to do the comparison, see how that goes.

Kamata, Do, Liberato

Video clips, limited time to 5 minutes, up loaded to YouTube, easier to dissimilate How big size of the team, 1-5. Want to acknowledge each person. Ok with their own language, but needs to provide sub titles, promotion 1 minute, Send somebody to Brussels, show video on closing.

#### 13. Next meeting

Next meeting of CCE will take place during the IUPAC General Assembly in Puerto Rico, Sunday July 31 and Monday, August 1, 2011 28 YO

29-30 Divisions.

31-1 standing committees

#### 14. Who writes a short report to CI about our meeting?

Erica Steenberg volunteers! Thanks!

Thank you to you all from the chair!

Eva Åkesson, vice chair and secretary August 2010

#### Report of ICCE/ECRICE 2012 Breakout Session

Monday, August 9, 2010; noon-1:30 p.m.

Present: Morton Hoffman, CCE Conference Coordinator

Peter Mahaffy, CCE Chair

Eva Åkesson, CCE Vice-Chair and Secretary

Choon Do, 2006 ICCE General Chair

Ponnadurai Ramasami, 2008 ICCE General Chair

Liberato Cardellini, 2012 ICCE/ECRICE General Chair

Ilka Parchmann, EuCheMS Chemical Education Division Chair

Iwona Maciejowska, 2010 ECRICE General Chair

Ting-Kueh Soon, Malaysian Chemistry Institute President

Lida Schoen, YAC Chair

- 1) Liberato Cardellini (Italy) and Peter Childs (Ireland) will serve as General Co-Chairs of ICCE/ECRICE 2012.
- 2) It was suggested that separate International Organizing (or Advisory) Committees for ICCE and ECRICE be established to provide guidance and to protect the interests of both groups. There may be overlap in the membership of the Committees.
- 3) A combined Executive Committee should be established with leaders from both ICCE and ECRICE in order to make high-level policy decisions (e.g., dates, deadlines, whom to invite as plenary and other speakers, etc.).
- 4) A Local Organizing Committee should be established to deal with local arrangements, venue, housing, receptions, meals, audio-visual needs, etc. This Committee will work directly with professional convention organizers and other such groups.
- 5) A Program Committee should be established to handle the details of invited and plenary speakers, themes, abstracts, program books, etc.

- 6) A Finance and Fundraising Committee should be established to develop and manage the budget, raise funds from sponsors and contributors, keep the money flowing, maintain solvency.
- 7) A Communications and Publicity Committee should be established to develop paper and electronic publicity, manage the placement of announcements of the meeting in appropriate media, and link information on the ICCE and ECRICE websites.
- 8) An Awards Committee should be established to administer the ICCE Distinguished Contribution to Chemistry Education Awards; a corresponding committee for ECRICE may be created if that body chooses to make awards or participate in joint ones.
- 9) Above all, both ICCE and ECRICE groups must exhibit mutual respect toward each other and share mutual responsibility for the best outcome of the joint meeting.
- 10) It is expected that the information outlined here will be posted on the ICCE/ECRICE websites in a timely manner.

# Minutes for the CCE Project (#2009-037-3-050) "Developing Toolkits for National Chemistry Weeks during IYC" Task Group Meeting

#### **Date**

August 7, 2010

#### **Venue**

Graduate Institute of Science Education NTNU, Taipei – Taiwan

<u>Attendees</u>

Mustafa Sözbilir (Task Group Chair)

Morton Hoffman (Task Group Member)

Ram Lamba (Task Group Member)

Choon Ho Do (Task Group Member)

Masahiro Kamata (Guest - CCE National Rep. to Japan)

Mei-Hung Chiu (Guest - CCE Titular Member)

#### **Regret/Not Attending**

Jan Apotheker (Task Group Member)

This project aims to develop toolkits for national chemistry days and weeks during International Year of Chemistry (IYC) 2011 to raise awareness of the importance of chemistry as the central science by highlighting the applications of chemistry in daily life.

#### **Project Objectives**

- To identify the countries already have established national chemistry days and weeks.
- To collect information about the planned activities for IYC2011 from countries which already have established national chemistry days or weeks.
- To develop toolkits to facilitate the widespread celebration of national chemistry days or weeks around the world, particularly in countries that do not have a strong tradition to date of doing so.

The Task Group will collect information about the planned activities for IYC2011, especially from countries represented by IUPAC National Adhering Organizations (NAOs) and Associate National Adhering Organizations (ANAOs) and also have a strong tradition in celebrating chemistry at national level. The CCE group will then facilitate the sharing of those ideas with

other nations, especially those that do not have already established national chemistry day/s or weeks, and that desire guidance for the celebration of chemistry days or weeks during IYC. In addition, CCE is planning to help pair some of those latter nations with more developed ones in order to assist in organizing activities that are suitable for their culture, education, and chemical industry.

Task Group has met in Taipei prior to CCE meeting during 21<sup>st</sup> ICCE held in Taipei/Taiwan for a one day meeting as planned in the project. Unfortunately, one of the task group members, Jan Apotheker, was not able to attend the meeting. There were two guests attended the task group meeting as listed above.

Task group has reviewed the process of the project and the information collected from few IUPAC NAOs and ANAOs plans for IYC 2011 as a response to the official letter sent out by the IUPAC Secretary General, Terry Renner on behalf of the project Task Group. At that time, only few response were received from a few number of countries among them Brazil, France, Jordan, Malaysia, Pakistan, Puerto Rico, USA through IYC Newsletter, Venezuela. This less number of responses made task group to think again how to collect information from the nations around the world. Therefore, task group decided to collect information by the help of task group members. Each of the task group members will collect information from the following regions. To gather information from the Africa and Russia, two outside persons help will be requested.

The following people will be responsible for the collection and distribution of information coming out of the Task Group and pairing of countries in the region through the federation of chemical societies around the world.

Ram Lamba: Federation of Latin American Chemical Societies (FLAQ), India and Sri Lanka.

Morton Hoffman: North America (ACS, CSC)

Choon Ho Do: Federation of Asian Chemical Societies (FACS)

Jan Apotheker: Federation of European Chemical Societies (EuCheMS)

Mustafa Sözbilir: Middle East (Union of Arab Chemists), Northern Africa, Israel

Engida Temechegn (not confirmed): Federation of African Chemical Societies (FASC)

**Natalia Tarasova (not confirmed):** The Mendeleev Russian Chemical Society, request for other nations in former USSR.

Each person listed above will survey the web sites for the IYC activities and the contact persons' details in the countries in their responsible region and post them to IYC 2011 official web site.

Task group has agreed that it is not feasible to impose a certain kind of activities to every nation to celebrate IYC2011. Therefore it is decided to collect as much as more ideas from different nations around the world and share those ideas with all nations either through IYC2011 official website and also email communications with the national contact points. For this purpose, Task group has decided to perform following activities:

- 1. Each nation is encouraged to set up a web site in local language devoted to IYC2011 to share the information and this web site should have a link to official IYC2011 web site with official logo.
- 2. University professors, people from chemical industry and students (chemistry, chemistry engineering, chemistry teacher training, science education, students from chemistry related departments) are recommended to go to schools to enlighten students and parents about chemistry, chemical industry and its role in our life. Similarly students and parents should be invited to the universities and chemical industries (open house days/weeks) to be informed about chemistry, chemical industry and its role in life.

**Recommendation:** Teachers should be involved to reach the general public as they have the primary contact with students.

- **3.** Lectures and meetings should be organized by chemical societies, state departments, universities, ministry of educations, private institutions about chemistry, chemical industry for different publics. Well known chemists both from the individual country or abroad could be invited to the lectures.
- **4.** If there is no national chemistry/science day or week is not available in a particular country IYC2011 could be a chance to start a chemistry/science day/week.

As a result of the project in November 2010 Task Group will develop a toolkit about IYC2011 activities that will be sent out to IUPAC with a request to be forwarded by UNESCO to representatives in its member states to motivate governmental support/involvement in the local activities (Julia Hasler from UNESCO will be the contact).

This project will also play a major role in introducing the Global Experiment - Water: A Chemical Solution project (http://www.chemistry2011.org/participate/featured-ideas/global-

experiment), which is another flagship activity of CCE for IYC2011, and invite nations around the world to participate and make it a success.