*Supporting and promoting science education internationally*

# The ICASE Newsletter December 2009

Newsletter of the International Council of Associations for Science Education.

**Contents of this issue (to go to any item, select, then click left mouse button)**


1. **ICASE News** ..... 1
2. **Science Activities** ..... 4
3. **Further Ideas for Greater Relevance of Science Teaching for the Enhancement of Scientific Literacy** ..... 7
4. **SAFE SCI Be Protected** ..... 9
5. **Unheeded Recommendations Regarding Science Education Reforms in the U.S.** .. 12
6. **Calendar of Events** ..... 13
7. **ICASE Executive Committee 2008-2011** ..... 15


## 1. ICASE News

### ICASE World Conference 2010 June 28-July 2, 2010 – New Deadline

Submissions are welcome from science educators and especially from teachers of science subjects. The deadline for abstract of papers and a 3 page synopsis is now asked by 21 December 2009 (see www.worldSTE2010.ut.ee or www.icaseonline.net). The synopsis is intended to help the reviewer to provide feedback to the presenters (if appropriate) and to help to group the presentations into meaningful sessions within the conference (the synopsis will be put on a CD and the abstract in the conference programme). And may I remind you that there is no need for the full paper (full papers will be solicited after the conference for a conference book and for articles in the ICASE online journal).

*Some persons have written to say that they have difficulty in uploading their abstract and synopsis to the website. The procedure is – **first access step 1** (on completion of the data the system will send a password to your e-mail address). **Then undertake step 2** where the password is entered and the abstract and symposium are uploaded. Before the deadline changes can be made to the submission by using step 3 and your password.* IN CASE OF CONTINUING DIFFICULTY, PLEASE SEND AN E-MAIL TO jack@ut.ee. I will upload your submission for you and you will receive an automated e-mail telling you that it has been uploaded.

Conference registration is about to be opened. The earlybird fee (until 31 March, 2010) is 350 Euros (with a reduction for persons from ICASE member organisations - 320 Euros). The non-earlybird rate for all will be 400 Euros. Details of hotel prices and booking will also be made available on the website. The main conference hotels are London and Dorpat. Limited dormitory accommodation is also available. Please note – all listed hotels are within walking distance of the University (the main conference venue).

**Replies to Questionnaire on suitability of the ICASE newsletter**

I am sorry to say I received very few replies to the questionnaire, but from those that I did received (many thanks), there was common agreement in most cases as indicated in the table.

| | Reply to Item | *Comments* |
|---|---|---|
| 1 | All indicated they receive the newsletter directly from ICASE ? | *The newsletter is also on the website – www.icaseonline where back issues can be seen (up to July 2009 at present) .* |
| 2 | All indicated positively to the item asking - does the newsletter make you more aware of ICASE as an international organisation linking science teachers and science educators around the world ? | *This is a major purpose of the newsletter and I welcome your help in increasing the circulation of the newsletter. All I need are e-mail contacts sent to jack@ut.ee.* |
| 3 | There was an almost universal wish for organisation/institutions to be linked to ICASE ? | *Below I indicate how it is possible to link your association/institution to ICASE.* |
| 4 | All accepted the current newsletter design. | *There are no current plans to change this* |
| 5 | All agreed they were willing to recommend this newsletter to other science teachers/science educators | *Please may I request that this is undertaken. All I need are e-mail contacts* |
| 6 | Sections especially useful were – *ICASE news, activities, ideas for science education, conferences* | *Please can you help expand the conf section with national as well as international events* |
| 7 | About half the replies indicated they consult all sections of the newsletter. | *Others said - sections they did not consult were Exec list (it is in each issue), member comments, and the safety column.* |
| 8 | Virtually no comment was made on areas of omissions | *New areas will be added as items become available* |
| 9 | A few replies indicated that the person would be willing to supply items for the newsletter | *I would welcome that – see below* |

Follow up

**a) Linking Organisations/Institutions with ICASE**

The following has been included in each newsletter - ICASE is a Non-Governmental Organisation, set up by its member National STAs, Science Societies, Science Centres, etc to form an International Science Education Communication Network. It is possible for all organisations interested in international science and technology education to belong to the ICASE network. Contact Miia Rannikmae, ICASE Secretary, for more information (miia@ut.ee). ICASE has an annual subscription, but this fee can be waived for organisations in developing countries, or for organisations with financial difficulties.

Maintaining the Network is the major emphasis.

**b) Supplying items for the newsletter**

This is open to all, but items are included (and/or edited) at the discretion of the editor. There is no standard format, although length and memory size are limitations. If you wish to dissemination ideas, or information, please send to the editor at jack@ut.ee

**Global Conversations in Science Education Conference, convened by NSTA**
Philadelphia, Pennsylvania, 18th March 2010

**THEME: "Assessing Student Understanding of Science: Perspectives and Solutions"**

This will be a special day by the National Science Teachers Association dedicated to science education from an international perspective. This is a ticketed event (M-2), open to all registered attendees of the NSTA National Conference on Science Education (at no additional costs). Tickets will be available in November. You may register for the conference now and add tickets to your registration later. Conference registration and hotel information is now available on the NSTA website at http://www.nsta.org/conferences/2010phi/

Activities begin on Wednesday, March 17, with a President's International Reception for all international visitors and invited guests. On Thursday, the day commences with a welcome ceremony, including a NSTA conference orientation, followed by a plenary talk by Dr. Rodger W. Bybee, Chair of the PISA 2006 Science Expert Group. Dr. Bybee will speak about global assessments and comparisons. There will also be concurrent sessions related to the theme focusing on formative, summative, and global assessments. A full complement of papers will also be presented in a poster session, along with a luncheon plenary speaker, Dr. Robin Millar, Chair of the Departmental Research Committee at the University of York, UK. Dr. Millar will speak about problems related to assessing what students really know. The day will conclude with a panel discussion with Dr. Bybee and Dr. Millar. For more information, please visit the website at http://www.nsta.org/portals/international/intlsciedday.aspx.

## ICASE World Conference 2013

*Call for Expressions of Interest to be a partner with ICASE as host organisation for ICASE2013 - World Conference on Science and Technology Education.*

ICASE intends to hold another World Conference on Science and Technology Education during 2013. In order to achieve this, ICASE will form a partnership with a 'host association/organisation' located in the country where the conference will be staged. ICASE and the host association/organisation will assume shared responsibility for the conference and each will nominate a co-convenor and will contribute people to the necessary conference committees. This is a call for expressions of interest from associations/organisations interested in becoming a partner with ICASE as host association/organisation for ICASE2010. Proposals should be submitted by January 15th 2010 to: Dr Robin Groves. Chair, ICASE World Conference Standing Committee: Email: grovesr@ozemail.com.au or Mailing address: PO Box 244, Mount Hawthorn. WA 6016, Australia. Enquiries may be directed to the email above. A decision will be made by ICASE by March 15th 2010 and the successful proposer and all other bidders will be notified. It is anticipated that the planning for ICASE2013 will commence immediately, and that advance information about it will be made available at the ICASE 2010 World Conference in July 2010.

# 2. Science Activities

These following activities are from a collection built up by ICASE through its former primary science newsletter (STEP) and other sources. They are put forward to bring attention to small activities which can be carried out in the science classroom with minimal equipment.

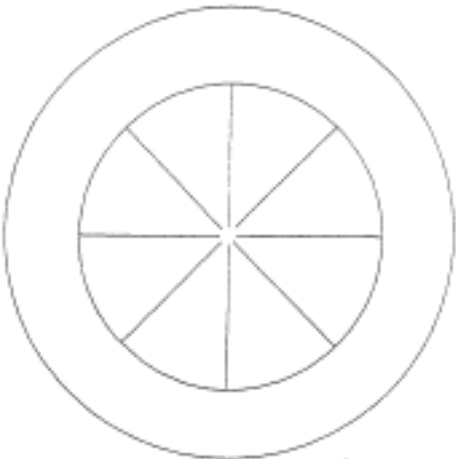
## A) STEP ACTIVITY

**Wind Roller**

**Challenge how can you make a wind powered roller?**

**What you need**

- **Cardboard**
- **Pencil**
- **Scissors**



**What to do**
Use the diagram of a roller on this page as a 'template' to draw a roller on cardboard. Cut around the outside and then punch a hole in the middle. Cut along the straight lines, then fold the fins in opposite directions as shown. Take you roller outside and roll it along a flat surface.

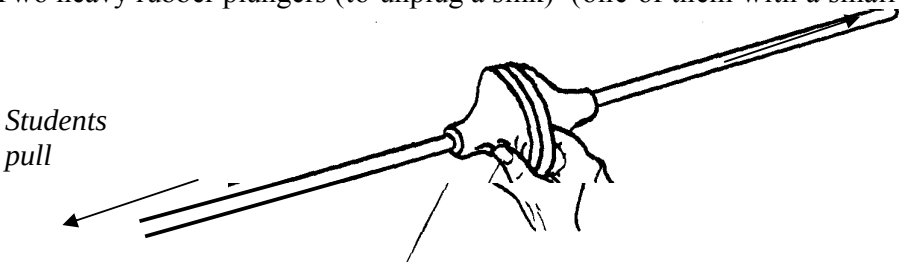
**More to do**
How does the wind affect your roller? Does indoors have the same affect ?
What factors affect the roller? Design and make different rollers to test the effect of changing the size of the roller, changing the size of the fins, changing how much the fins are folded, increasing the fold of one fin while decreasing the fold of the next fin.

## B) ADDITIONAL SCIENCE ACTIVITY

### THE BIONIC FINGERS

Materials

l. Two heavy rubber plungers (to unplug a sink) (one of them with a small hole in it).




*Hold hole under thumb*

**Procedure:**

1. Ask two students to come up and push the two plungers against each other.
2. Ask them now to pull them apart (can be easily done).
3. Now tell the students that you have *bionic fingers* which can keep the two plungers together.
4. Let the students push the two plungers together again and this time hold the plungers with thumb and forefinger, making sure that you cover the hole with your thumb (a wet finger works better).
5. Now let the students try to pull the plungers apart (most likely the wooden handle will come off first).

**Questions:**

1. Why was it so easy to pull the plungers apart before I held them?
2. What did actually hold the plungers together?
3. Did I have to hold the plungers in a special way?
4. How much force was keeping the two plungers together?
5. Would larger or smaller plungers stick together better?

**Explanation:**

The plungers were quite easy to separate before holding them together, because there was a hole in one of them, allowing the air to come inside between the two plungers. By covering the hole, the air was prevented from coming in (water on the finger acts as a seal) . When the students tried to pull them apart, the volume increased between the plungers, thus decreasing the pressure. It was again the atmospheric air pressure that was holding the two plungers together.

The total force that was holding them together can be calculated from the total surface area of the two circles multiplied by 1 kg (about 150 kg for plungers with a 10 cm diameter). A similar experiment was done with large steel half-spheres and horses pulling on each side: Magdenburg spheres.

## C) USING EXPERIMENTAL IDEAS IN SCIENCE TEACHING

This newsletter contains two experimental ideas. It is hoped that these are of interest. But how to use these experiments in teaching ? Teachers need to be free to include experimentation as they feel best, but given below is ICASE thinking in putting forward the experiments in this newsletter. Teachers and science educators are welcome to comment.

### 1. Who does the experiment ?

Clearly these experiments can be undertaken as a teacher demonstration. However, the intention is that the students are involved, either working individually, or more likely, in small groups. The apparatus is kept as simple as possible and can often be brought from home, or made by the students themselves.

Why is student involvement preferred ? We note the old Confucius saying – I hear and I forget; I see and I remember; I do and I understand. The belief is that the more students are engaged, the more they learn. Teacher demonstrations, or large group experiments, limit student involvement and are thus not preferred.

### 2. Should instructions be given to students ?

The sections *'What to do'* and/or *'Procedure'* clearly spell out how to undertake the experiment. But it is not intended that the experiment must be used in this way. By following instructions, a *'cookbook,'* or *'follow a recipe'* situation is created. This highlights the **doing,** but **probably not** the understanding. Where instructions are provided, the student learning can be expected to be the explanation that follows. And the teacher is then focusing on students' explanatory skills. The questions have been added to the first experiment to encourage moves away from a 'cookbook' or 'do-and-forget' approach and towards a more exploratory approach. In the second experiment the questions seek understanding which can lead to modifications of the experiments for more novel effects. It will a pity if the teacher is the person who answers these questions. In fact it would be interesting to learn of situations where the students, themselves, are both asking and then answering the questions.

### 3. Inquiry learning

Can the experiments be used in an inquiry approach, whereby the students ***raise questions*** and **suggest the *purpose* and *procedure themselves* ?** This is very much an ICASE recommended approach. It means students put forward the investigatory question, plus the procedure to follow. It promotes science as the seeking of explanations to questions put forward rather than to a 'wondering why' approach, although perhaps this is appropriate for the younger students.

So what would be the investigatory questions for these experiments ?

This is a challenge left for you to consider.

## 3. Further Ideas for Greater Relevance of Science Teaching for the Enhancement of Scientific Literacy

*Jack Holbrook, ICASE President*

In the last newsletter, this column considered:

*- why relevance is considered so important in science teaching? It suggested that relevance was important for science teaching because it triggered intrinsic motivation of students. It suggested that intrinsically motivated students were more likely to see the learning as meaningful and hence trigger a 'need to' and/or a 'want to' learn. This was suggested as being more powerful than any extrinsic motivation supplied by the teacher.*

*- what is science education ? The relevance of the learning in the eyes of students suggests that science education is teaching education through science in a manner which enhances students' intrinsic motivation to learn. This, of course, is easier said than done. For young students, where the excitement of handling equipment, exploring or observing is encouraged, such approaches to science can trigger motivation and a want to do, or be involved and in turn science is appreciated as being very relevant. But for older students, asked to follow worksheets and being asked to make recordings, take readings and then offer explanations, the excitement is nowhere near as strong. The activity is much more removed from their sphere of enjoyment, or in wanting to make it part of their learning world of meaningful experiences.*

The question is thus raised as to what change of philosophy for science education might capture learning in science education to be intrinsically motivating for students. Students suggest that science itself is, in many cases, interesting and motivational. But this interest is not related to school science, which is all too often regarded by students, especially above about grade 8, as irrelevant, difficult and boring. This would suggest the change needs to relate to the way that science in school is portrayed and taught and, in turn, with the substance, or emphasis of what is being taught.

A typical approach to subject matter, in a science curriculum, is to put this in a sequence. The philosophy behind this sequence is usually related to 'science content logic' and could be, for example, beginning with content considered easy for students to handle and comprehend and moving to that which is more difficult at a later stage. This has shown to be fine for students in the lower grades, where the learning is at a concrete and hands-on level, although research has pointed to misconceptions if care is not taken to build on student prior constructs and build within the zone of proximal development that the teacher can provide.

But if the philosophy of the science curriculum approach changes to one which suggests there are fundamental science ideas, which students need to acquire, and these are needed before students can move on and consider more complex or abstract aspects, there is the danger of a lack of motivation. Determining what is fundamental, of course, depends on a point of view and can cover a wide range of components, all or mostly viewed by students as irrelevant because they are not immediately related to their social environment. These 'so called' fundamental aspects can take up much teaching time with the unfortunate result that for students not wishing to progress in their science learning beyond the first 'choice of subjects level', they may never get to experience the complex. Whereas the complex may well represent science relevant to students in their lives, the fundamental is geared to school or school textbooks and holds little motivation for students

who see the world outside of school as their sphere of influence, their sphere of enjoyment and their sphere of exploration.

The suggestion here is that for student motivation, and especially in an attempt to promote intrinsic motivation, science education needs to enter the world of the student rather than asking the student to enter the perceived irrelevance of the school science world. This in turn suggests that context is important and where the context is derived for the external world (external to the school), then science education can attempt to seek meaning, relevance and, with this, student motivation to learn.

What is this external world? There is a temptation to say it is the artefacts around us. The latter part of the 20th century has seen a vast increase in materials brought about by advances in technology, most based on a scientific foundation. Traditionally science teaching refers to these after the science ideas had been introduced. They are the applications of the science ideas. But is the purpose of science teaching really for students to appreciate how technology works ? Why should it be? What will this achieve? Will it really allow people to repair the technology, to modify the technology, or even allow people to make their own ? In some cases maybe it will, but as the technology gets more sophisticated and it becomes more and more usual for technological repairs to be expensive (high labour costs) and hence for operational parts to be replaced as a complete unit rather than individual components, so the need for 'science for understanding technology' becomes less necessary. The relevance of science education is thus not really about an appreciation of how technology works, even though many science centres, or science museums may think it is.

So what is the relevance of science teaching for grade 7 or 8 onwards ? Just as in the world of literature, memorising works of art is not the target. Rather it is more related to being able to appreciate, critique and put forward points of views on recognised literature works. This 'ability to' is the key to learning and this applies to science learning as well. The ability to recognise science (perhaps as opposed to pseudoscience), the ability to utilise science (such as for problem solving) and the ability to appreciate science as a sense of exploration, a sense of wonder, a sense of having limitations as it seeks to provide the 'truth.' but never knowing whether the science knowledge, ideas, laws and values are, in fact, do really indicate truth.

If school science interrelates to the world of the student, their concerns, their worries and their interests, wants, or needs, then there is a high chance that it can be intrinsically motivating. Students will wish to be engaged in the learning through a science context. But it is strongly suggested here, that this does not come from a sequencing of science ideas, but from exploring the science in an appropriate student-appreciated context. This in turn suggests a big change of philosophy in the way science education is understood and operated. It further separates science (the world of scientists) and science education (the world of the classroom where the student is being educated through a science context).

This leads to further questions :

*How are such contexts identified ?*
*And if an 'acquire knowledge first, utilise the knowledge second' approach is not appropriate, what approach should be considered ?*

These questions are considered in a further newsletter.

# 4. SAFE SCI Be Protected

*Article provided by Dr. Ken Roy – Chairman of the ICASE Standing Committee on Safety in Science Education. He is also Director of Environmental Health & Safety, Glastonbury (CT), an authorized OSHA instructor and science safety consultant. Email: Royk@glastonburyus.org*

***DEALING WITH HAZARDOUS CHEMICALS!***

## I. INTRODUCTION:

Exposure to chemicals in the air, water, food, etc., can be dangerous to the health of science teachers and students. Science teachers need to be ever vigilant on the issue of both short and long-term exposure ramifications in the laboratory. Remember that students move on each year, but the teacher stays, repeating the chemical exposure!

Is there a safe limit? How much is too much? How can the dangers of exposure be assessed? How can a teacher protect themselves and their students? Best professional practice and legal standards require these kinds of questions to be considered and addressed by both the employer and the employees.

## II. LEANING ON COSHH?

The United Kingdom's Health and Safety Executive addresses the dangers of using hazardous chemicals in the workplace in their publication titled *"Working with substances hazardous to health: What you need to know about COSHH!"* COSHH stands for Control of Substances Hazardous to Health (Regulations 2002). This concise and well designed leaflet provides basic, but critical information which science teachers should find useful in helping to make their laboratories a safer place for students to learn.

The first suggestion is to determine which substances can be harmful by checking out four different sources, including:

1. Securing and reviewing the safety data sheet.
2. Securing additional information from chemical suppliers and/or professional association.
3. Look into the professional publications for health and safety information.
4. Check out internet professional, business and government resources.

Next, think about how the hazardous chemicals are to be used and what students' exposure is likely to be. For example the publication suggests:

1. Breathing in vapors, mist, dust, etc. – exposure to nose, throat or lungs, liver, etc.
2. Exposure to skin by splashing, dipping, airborne dust.
3. Imbibing – exposure to chemicals by fingers in the mouth, eating, etc.
4. Exposure to eyes – vapor, dust, gases, splashes, etc.
5. Puncture of skin – needlestick, cuts, etc.

Review the safety data sheet or material safety data sheet for critical safety information in dealing with hazardous chemicals. Labeling on bottles and packages is required, including safety symbols. International symbols will replace current symbols used in most countries during the next few years. A sample of soon to be adopted international safety symbols includes:

Risk assessment is the next recommended step. [Teachers are usually required to assess the risk to their students]. Once done, they are then required to provide engineering controls, standard operating procedures and personal protective equipment to prevent or adequately control the risks for students.

How do you choose the correct control measure to meet the challenge posed by the hazards? The following measures are recommended in the publication, in order of priority (pg 5):

1 *Eliminate the use of a harmful product or substance and use a safer one.*
2 *Use a safer form of the product, e.g. paste rather than powder.*
3 *Change the process to emit less of the substance.*
4 *Enclose the process so that the product does not escape.*
5 *Extract emissions of the substance near the source.*
6 *Have as few students in harm's way as possible.*
7 *Provide personal protective equipment (PPE) such as gloves, coveralls and a respirator. PPE must fit the wearer.*

Also included is the "Checklist for good control practice" (pg 6)

1. *Do you design/operate processes to keep the spread of contaminants as low as possible?*
2. *Do you think about all routes of exposure – breathing in, on skin or swallowing?*
3. *Do you choose control measures according to the amount of substance, how it gets into the body and how much harm it will cause?*
4. *Do you make sure that measures are effective, easy to use, and work properly?*
5. *Do you also need to issue personal protective equipment (PPE)?*
6. *Do you check regularly that measures continue to work, and keep simple records?*
7. *Do you tell workers about the dangers and how to use control measures properly?*
8. *Do you avoid increasing the overall health and safety risks when making changes?*

In order to "keep it clean" – someone should be charged with the responsibility of making sure control measures are checked and maintained. In the United States, the Occupational Safety and Health Administration or OSHA requires schools in most states to have a Chemical Hygiene Officer who oversees chemical hygiene in all laboratories.

The COSHH publication noted the need for a 'competent' person to check that (pg 5):

1. *the process isn't emitting uncontrolled contaminants;*
2. *the control equipment continues to work as it was designed;*
3. *workers (students) follow the right way of working.*

Two areas which are stressed are the operation of engineering controls such as local exhaust ventilation and condition of personal protective equipment such as safety glasses and safety goggles.

Training and resources are also part of the operation in order to make sure employees (students) are competent in dealing with chemicals hazards relative to safety precautions/prevention.

*Training, instruction and information (pg 7)*

1. *Explain to your workers/students, and anyone else who needs to know, what the dangers are. It is poor practice just to hand them a page of written information.*
2. *Show workers/students how to use control measures properly, and how to check that they are working.*
3. *Carry out practice drills for cleaning up spills safely – do this before any spillages happen.*
4. *If workers/technicians (not really expected that students would be exposed to such dangers) need to use respirators, they also need face fitting and training.*
5. *If workers/students need to use protective gloves, they need to know how to put them on and take them off without contaminating their skin. See 'Find out more'.*

In addition to training, employees are best kept healthy by monitoring exposures, providing information and health checks.

## IV. ISSUES FOR THE SCIENCE TEACHER?

The science teacher must consider several issues relative to use and exposure of hazardous chemicals in their school laboratories.

1. Long Term Exposure: Relatively low (as well as high) levels of exposure over the long term can have negative health ramifications. Teachers need to be vigilant in addressing protective actions such as having appropriate ventilation in the lab, referring to SDS or MSDS information and using personal protective equipment.
2. When Unsure – Request the Test: HSE, OSHA and other government standards usually provide the right of the employee to be tested if exposure levels to hazardous chemicals are in question. When unsure, request that your employer have the worksite tested by a licensed industrial hygienist.
3. Pregnancy: Both female employees and students may be pregnant. Consult the SDS or MSDS for information and cautions relative to reproductive toxins, harm to the fetus, and other relevant concerns.
4. Opt for Less of the Two Evils: Always look for the less or least chemically hazardous material in doing laboratory work.

**REFERENCE:**

http://www.hse.gov.uk/pubns/indg136.pdf - Health and Safety Executive, United Kingdom - Working with substances hazardous to health: What you need to know about COSHH

**RESOURCES:**

http://www.iosh.co.uk. - Institution of Occupational Safety and Health (IOSH)
The Grange, Highfield Drive, Wigston, Leicestershire LE18 1NN. Tel: 0116 257 3100
http://www.OSHA.gov – Occupation Safety and Health Administration

## 5. Unheeded Recommendations Regarding Science Education Reforms in the U.S.

*A short article, submitted by Robert E. Yager,*
*Professor of Science Education, University of Iowa, USA,*

One of the major differences in education in the U.S. is the absence of any mention of education in the Constitution. Hence it is up to all 50 states to define curricula and to set standards. In many ways the National Standards in the U.S. have not had the impact the document should have had from the $7 million spent nationally to develop it and the five years of debate and the several initial drafts which were circulated widely for agreement as well identification of concerns and needed changes.

Some of the most important aspects have not gained support, recognition, and expected respect in any of the states after the final approval and publication in 1996. Some of the most important changes comprising the NSES which have received little attention in the 50 states have therefore resulted in limited accomplishments of the exciting reforms envisioned. Some of these features include:

1) The union of chemistry and physics into physical science.
2) The unification of basic science concepts and process skills – as the first and most important facet of content.
3) The inclusion of technology (with an "And" inserted after the word "science"). Interestingly, technology was stricken from science textbooks in the U.S. during the reforms of the 60s.
4) A focus on the philosophy, history, and sociology of science throughout the K-12 curriculum.
5) Science studied in a context of its use in resolving personal and social problems.
6) Reform focusing on current and local issues – (thereby ignoring national or world organizers).

As reforms are advanced in other nations, governments are now rushing to stimulate real changes in some of the areas about which the NSES leaders envisioned more than a decade ago. Some are even being labelled as across the total curriculum with science being an organizer. Problems/ issues are central to the science enterprise. The importance of technology in today's society and for the advance of science and itself makes it important that the human-made world remains a focus for non-college bound secondary students as well as for future engineers. Today's social problems require attention – and especially by those involved with K-12 students and their teachers.

Some continue to argue concerning the names given to such fundamental reforms. These names have included Science-Technology-Society (STS) which was conceived and so named in UK prior to 1980. Some now having added an "E" to STS to encourage a focus on environmental issues; others in Europe have used STL (the "L" being for Literacy). Many across the world (especially researchers) now prefer Socio Science, indicating the importance of the use of science and technology in dealing with today's problems. But, how important is the name itself?

All of these considerations should be central to science education organizations that comprise ICASE? It would be good to add more arguments and details as we all push for real reforms, real learning, and assuming that everyone is prepared to tackle the problems that perplex us all!

## 6. Calendar of Events

The Association for Science Education, UK will hold its annual conference at the University of Nottingham from Thursday the 7th January to Saturday, 9th January, 2010. This year's conference theme is 'Inspirational Science: the Best in Science Teaching and Leanirng.' Please consult the website www.ase.org.uk for further details.

### National Science Teachers Association (NSTA), Philadelphia, USA

The next NSTA **National Conference will be held in** Philadelphia, PA from March 19-21, 2010. Please consult the NSTA website for more details. An international day will be held on the 18th March on

**Global Conversations in Science Education Conference**
Philadelphia, Pennsylvania

**THEME: "Assessing Student Understanding of Science: Perspectives and Solutions"**

On Thursday, March 18, 2010, the National Science Teachers Association will have a special day dedicated to science education from an international perspective. **This is a ticketed event (M-2), open to all registered attendees of the NSTA National Conference on Science Education (at no additional costs).** Tickets will be available in November. You may register for the conference now and add tickets to your registration later. Conference registration and hotel information is now available on the NSTA website at http://www.nsta.org/conferences/2010phi/

Activities begin on Wednesday, March 17, with a President's International Reception for all international visitors and invited guests. On Thursday, the day commences with a welcome ceremony, including a NSTA conference orientation, followed by a plenary talk by Dr. Rodger W. Bybee, Chair of the PISA 2006 Science Expert Group. Dr. Bybee will speak about global assessments and comparisons. There will also be concurrent sessions related to the theme focusing on formative, summative, and global assessments. A full complement of papers will also be presented in a poster session, along with a luncheon plenary speaker, Dr. Robin Millar, Chair of the Departmental Research Committee at the University of York, UK. Dr. Millar will speak about problems related to assessing what students really know. The day will conclude with a panel discussion with Dr. Bybee and Dr. Millar. For more information, please visit the website at http://www.nsta.org/portals/international/intlsciedday.aspx.

### ICASE World Conference, 28th June – 2nd July, 2010, Tartu, Estonia

The 3rd ICASE World Science and Technology Education Conference will be held at the University of Tartu.

Conference theme - **Innovation in science and technology education: research, policy, practice.** The Call for Papers is now announced for each of the sub-themes – *research; policy and practice.*

*[See website for more details about the call for papers - www.WorldSTE2010.ut.ee ]*

**10th ECRISE and 4th DidSci conference, Krakow, Poland July 4 – 9, 2010**

The organizing committee cordially invites you to attend and participate in the 10th European Conference on Research In Chemistry Education (ECRICE) and 4th International Conference Research in Didactics of the Sciences (DidSci). We kindly invite all academicians, doctoral students, science teachers, and researchers to take part in these events.

Based on a long tradition, ECRICE is organized under the auspices of EuCheMS (formerly FECS), in relation to the activity of the Division of Chemical Education. This meeting follows successful conferences held in Istanbul (2008), Budapest (2006), Ljubljana (2004), Aveiro (2001) etc. This Conference is an opportunity to exchange experiences on research in chemical education (ECRICE) and research & practice in natural science education (DisSci) carried out at every education level from primary school to graduate studies. The aim of the conference is to familiarize participants with the most recent achievements in the various scientific centres.
The programme will feature a wide variety of plenary, invited and contributed lectures, as well as poster sessions. Topics include:

- Results of science/chemical education research and reports on evidence-based and/or research informed practice at all levels in the fields.
- Teaching and learning chemistry/science at all level of education (from elementary schools to universities, general and vocational schools).
- Life long learning in chemistry/science.
- New technologies in chemical/science education.
- Laboratory work (Micro Scale Chemistry, safety issues etc.).
- Chemistry/science teachers' education (pre- and in-service training).
- Teaching chemistry/science to students with diverse abilities (teaching gifted student, teaching students with learning difficulties).
- Critical analysis of chemistry/science textbooks and curricula.
- Green chemistry and environmental chemistry education.
- Ethical issues in chemistry/science education and research
- Chemistry and Society, public understanding of chemistry.
- History and philosophy of chemistry/science.
- Chemistry/science and industry.
- International programmes and projects in chemistry/science education.

Abstracts of oral contributions and posters will be peer reviewed. The language of ECRICE will be English, whereas the language of the DidSci component of the conference will be English, Polish, Czech, and Slovak. For more information contact: Iwona Maciejowska ECRICE 2010 secretary at e-mail address: ecrice2010@ap.krakow.pl or Małgorzata Nodzynska DIDSCI 2010 secretary at e-mail address: didsci2010@ap.krakow.pl

21st International Conference on Chemical Education (ICCE), Taiwan, August 8-13 2010.
The theme of the 21st ICCE is Chenmistry Education and Sustainability in the Global Age. The deasdline for prospoals is march 31 2010. For further details contact http://icce2010.gise.ntnu.edu.tw

# 7. ICASE Executive Committee 2008-2011

Based on the ICASE constitution, the ICASE Management committee as well as Regional Representatives are elected by member organisations. These elected members, in turn, nominate chairs of relevant standing committees. Together these persons form the ICASE Executive Committee and are the persons who make decisions on behalf of the ICASE Governing Body. The ICASE Governing Body is the **ICASE member organisations**.

***The Executive Committee*** **(the decision making body working for the Governing Body)**

**President**
Prof Jack Holbrook
E-mail jack@ut.ee

**Past President**
Dr Janchai Yingprayoon
E-mail janchai@loxinfor.co.th

**Secretary**
Prof Miia Rannikmae
E-mail miia@ut.ee

**Treasurer**
Peter Russo
E-mail ceo@asta.edu.au

**Regional Representative for Africa**
Dr Ben Akpan
Executive Director of STAN, Nigeria
E-mail: ben.akpan@stanonline.ng
(Member Organisation – Science Teachers Association of Nigeria)

**Regional Representative for Asia**
Dr Azian Abdullah
Director, RECSAM, Malaysia
E-mail: azian@recsam.edu.my
(Member Organisation – RECSAM)

**Regional Representative for Australia/Pacific**
Dr Beverley Cooper
E-mail: bcooper@waikato.ac.nz
(Member Organisation – NZASE, New Zealand)

**Regional Representative for Europe**
Dr Declan Kennedy
E-mail: d.kennedy@ucc.ie
(Member Organisation – Irish Science Teachers Association (ISTA)

**Regional Representative for Latin America**
Gabriela Inigo
E-mail: gabrela_inigo@hotmail.com
(Member Organisation – Albert Einstein Club, Mar del Plata, Argentina)

**Regional Representative for North America**
Prof Norman Lederman
E-mail: ledermann@iit.edu
(Member Organisation - Council of Elementary Science International - CESI)

***Chairs of Standing Committees***
**Safety in Science Education**
Dr Ken Roy
E-mail: Royk@glastonburyus.org

**World Conferences**
Dr Robin Groves
E-mail grovesr@ozemail.com.au

**Pre-secondary and Informal Science Education**
Ian Milne
E-mail I.Milne@auckland.ac.nz