



International Council of Associations for Science Education

Supporting and promoting science education internationally
The ICASE Newsletter

JUNE/JULY 2016

Welcome to the ICASE June/July 2016 Newsletter!

The ICASE Newsletter is a publication containing current information about ICASE initiatives conducted by ICASE member organisations, and topics of interest in the field of science education. The table of contents for this issue is located in the right hand column. The International Council of Associations for Science Education (ICASE) was established in 1973 by leadership at the United Nations Educational, Scientific and Cultural Organization (UNESCO) to link national science teacher associations and to extend and improve science education for children and young people throughout the world. Today, ICASE is a network of science teacher education associations, institutions, foundations and companies, working together to promote science and technology education internationally. ICASE facilitates communication and cooperation at national, regional, and international levels. The ICASE Strategic Plan (2013-2023) calls for ICASE member organisations to adopt a position of Excellence and Leadership in Science Education.



<http://www.icaseonline.net>

Over the past 40+ years, over 200 organizations have been members of ICASE. Currently, there are 57 organizations from 28 countries contributing to the financial administration of ICASE.

www.icaseonline.net/membership.html

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The ICASE Newsletter is distributed to Member Organisations and through them to their members



To be included on the listserv for notification of future newsletters please follow the guidelines at:
www.icaseonline.net/news.html

Read or Submit a Manuscript to the ICASE Journal:

Science Education International



For information please visit our Journal web page:
<http://www.icaseonline.net/seiweb>

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ICASE News

This is the penultimate newsletter before the ICASE World Conference to be held in Antalya, Turkey at the beginning of November (1-5 November 2016). Held within the conference will be the ICASE General Assembly, a meeting of ICASE member organisations in which ICASE (through its President) will report on the activities and developments within ICASE since the last General Assembly held in 2013 in Malaysia

The General Assembly is also the occasion for member organisations to offer future directions to ICASE and to raise issues of interest. It provides the opportunity to provide future ICASE guidelines and make requests (even demands) to the ICASE Executive Committee on how ICASE should operate in the future for the benefit of the member organisations. Clearly, it is important that all member organisations are officially represented at the General Assembly. What does 'officially' mean? In this context, it means that each member organisation nominates a specific person to represent the organisation at the General Assembly. This person is authorised to put forward the point of view of the member organisation and to vote on matters raised. **This includes the election new ICASE Executive Committee members.** This is very important of course if ICASE is to function as outlined in its constitution. See page 24 more information.

Alas, it is probably that some member organisations cannot have a representative at the General Assembly. This is not a good situation, but clearly financial considerations are an important factor. The ICASE constitution, however, does allow for proxy representation and votes. Thus any member organisation can nominate anyone on the ICASE Executive Committee or an official representative of another ICASE member organisation to represent their organisation. **There is no limit to the number of proxy representations one person can hold, but obviously they are obliged to represent the wishes of the organisation and comment and vote accordingly.**

ICASE does have, and has made known in previous newsletters and on its website, its own vision for the future of ICASE and has its own mission statement and future plans. If you have not seen these or wish reminders, please contact the ICASE secretary, president, or any of the ICASE executive committee members. You can also visit the ICASE website at <http://www.icaseonline.net> to view documents related to our history over the past 40+ years, view the constitution, strategic plans, World Conference on Science and Technology Education Declarations created by the entire ICASE community, as well as summaries of each of our past World Conferences. Also, please note that the financial management for ICASE has undergone some considerable changes in the last year. We have transferred our home accounts from Australia to Ireland, set up paypal to handle the subscriptions so these can be done on-line! **Don't forget to update your membership status <http://www.icaseonline.net/membership.html> to enable your organization to participate in the upcoming elections that will be held during the ICASE General Assembly in the Titanic Hotel (Lara) – Antalya / Turkey on Tuesday, 1 November 2016.** We look forward to seeing you there!

For more details, please visit www.icase2016.org



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ICASE 2016 World Science and Technology Education Conference
1-5 November 2016
Antalya – Turkey



Ben Akpan, International Convenor

I am delighted to extend a warm invitation to science and technology educationalists to participate in the 5th World Conference on Science and Technology Education which is organised by ICASE (International Council of Associations for Science Education). It is scheduled to be held at the Titanic Beach Resort Hotel, Antalya, Turkey from 1-5 November 2016. The theme of the conference is Interdisciplinary Practices in Science and Technology Education.

Established in 1973, the objectives of ICASE are to extend and enhance the work of its member organizations; provide and support activities and opportunities to enhance formal and non-formal science and technology education worldwide; establish and maintain an international communication network; and encourage and support the establishment and development of professional science and technology organizations, especially where none currently exists in a country. In striving towards these objectives, ICASE activities have included the publication and production of teaching resources, organization of conferences, symposia, and workshops, as well as the organization of world conferences on science and technology education.

At its General Assembly in Kuching, Malaysia in 2013, ICASE approved a strategic plan for the future. This included re-examining the goal of ICASE in order that by its 50th Anniversary in 2023, the vision of the Association, to provide the foundation and leadership in Delivering Excellence in Science Education Worldwide, could be realized. Thus moving forward, ICASE envisioned its role as helping to develop and sustain science teacher associations so that all science teaching was enhanced through collaboration, innovative methodologies and connections throughout the globe. In this direction, the ICASE mission was to deliver and co-ordinate, enact and disseminate research and resources that enhanced the impact and growth of science education and science teacher associations throughout every continent.

ICASE World Conferences are, therefore, meant to further the vision and mission of the Association. The International Conference Committee with the unflinching support of the ICASE President, Teresa Kennedy; President- Elect, Bulent Cavas; the Local Convenor, Gultekin Cakmakci and all Local Organizing Committee members; is arranging a delightful conference for you. Supported by renowned keynote speakers and presenters, the conference promises to be very rewarding. In addition, you have an opportunity to visit historical sites around the region by staying at the conference hotel with an offer of accommodation and board on payment of highly discounted fees.

We look forward to receiving you in Antalya and do hope that you are able to arrive on 31 October as recommended!

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ICASE 2016 World Science and Technology Education Conference

1-5 November 2016

Antalya – Turkey

www.icas2016.org

The ICASE Science and Technology Education World Conference bring together policy makers, curriculum developers, scientists, science and university educators and researchers, science teacher association officers and of course primary and secondary science teachers.

As well as the usual conference sessions, the World Conference organisers have timetabled discussion sessions for all delegates, which lead to the development of a Conference Declaration. The Declaration makes recommendations for worldwide progress in science and technology education for the following three years.

Conference Programme:

| Time | Tuesday (Nov. 1) | Wednesday (Nov. 2) | Thursday (Nov. 3) | Friday (Nov. 4) | Saturday (Nov. 5) |
|---------------|------------------------|------------------------|--|-----------------------------|---|
| 09.00 - 10.00 | Registration | Registration | Keynote # 2 & Introduction to Discussion Group | Keynote # 3 | Workshop session |
| 10.00 - 10.30 | | Opening Ceremony & | Coffee Break | Coffee Break | Coffee Break |
| 10.30 - 12.00 | | Keynote # 1 | Discussion Groups | Concurrent session # 3 | Concurrent session # 5 |
| 12.00 - 13.30 | | Lunch | Lunch | Lunch | Lunch |
| 13.30 - 15.00 | | Concurrent session # 1 | Excursion * | Concurrent session # 4 | Concurrent session # 6 |
| 15.00 - 15.30 | | Coffee Break | | Coffee Break | Coffee Break |
| 15.30 - 17.00 | ICASE General Assembly | Concurrent session # 2 | | Poster session | Conference Declaration & Closing Ceremony |
| 17.00 - 18.00 | | Free time | Free time | Free time | |
| 18.00 - 19.00 | Welcome Reception | | | | |
| 19.00 - 21.00 | Dinner | Dinner | Dinner | Dinner | |
| 21.00 - 24.00 | | | | ICASE Party (Ticket Needed) | |

* **Excursion (13.30-19.00):** Side Old City, Temple of Apollo, Side Antique Theatre (optional) & Side Museum (optional). Don't miss this fantastic event!



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Strands for the ICASE 2016 World STE Conference:

Strand 1: Science and Technology teachers and the STA role in promoting 21st Century Skills

Strand 2: Impacts of National and International Projects on classroom practices and science teachers experiences from activities such as EU or NSF-funded projects

Strand 3: Science teaching and learning: Teaching resources developed and tested by teachers around the world

Strand 4: Science learning in informal contexts such as Science Centers and Museums

Strand 5: Curriculum Development, Evaluation, and Assessment

Strand 6: Innovation & Entrepreneurship in Science and Technology Education

Strand 7: Environmental and Sustainable Development Education

Strand 8: Information and Communication Technologies in Science Education

Conference Venue:

ICASE 2016 will be held in the Titanic Beach Resort Hotel, Antalya, Turkey on 1-5 November 2016.



Surrounded by verdant gardens, overlooking the crystalline waters of the Mediterranean Sea, the magnificent, all-inclusive Titanic Beach Lara resort in Antalya is situated amid the sandy beaches of Lara, on the Mediterranean coast of Turkey.

Whether you travel with family, friends, or a loved one, Titanic Beach Lara in Turkey's Mediterranean coast has several blissful options for accommodation, all featuring enchanting views and rich amenities. By day, there is the opportunity to soak up the sun on the sandy Lara beaches, while at night you can be swept away by an evening performance show.

Though the Titanic Beach Lara is dedicated to providing guests with a true all-inclusive getaway, the hotel is conveniently situated just 12 km from Antalya International Airport and 17 km from the shopping, dining, historical and entertainment attractions of Antalya city centre.

For more information: <http://www.titanic.com.tr/titanicbeachlara/default-en.html>

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Opening Address and Primary Keynote Speech



Flavia Schlegel, UNESCO Assistant Director-General for Natural Sciences will provide the Opening Address & Keynote Speech on Tuesday, 2 November 2016

“UNESCO acknowledges the important role played by ICASE in providing and bolstering formal and non-formal science and technology education worldwide, and in developing a global network of science and technology professionals. We are particularly enthusiastic by the possibilities offered to work more closely with ICASE to advance science and technology education on a global scale. Indeed, we believe that the experience accumulated by both organizations in the field of science education is a bedrock for a mutually beneficial collaboration in view of the achievement of the Sustainable Development Goals.”

Additional Keynote Speakers



Romain Murenzi
Director, UNESCO Division of Science Policy and Capacity Building



Julia Heiss
UNESCO Education Sector - ESD



Jim McDonald
President, Council for Elementary Science International (CESI) – USA



ICASE has received more than 250 presentation submissions from 31 different countries (Algeria, Australia, Brazil, Canada, Chile, China, Denmark, Estonia, France, Greece, India, Indonesia, Ireland, Israel, UK, Japan, Jordan, Latvia, Mexico, New Zealand, Nigeria, Pakistan, Philippines, Republic of Mauritius, Romania, South Korea, Sweden, Thailand, Turkey, USA). These presentations will be delivered in breakout sessions.

In addition, a **special session on ICASE Projects** will be provided by **ICASE Past President Jack Holbrook** (2008-2011) from the University of Tartu, Estonia.



Invited Workshops:

Workshop 1: Laboratory Safety Workshop



James A. Kaufman
President/CEO
The Laboratory Safety Institute (LSI) – USA

Workshop 2: Creative Science for Early Childhood Learning



Dee Jean ONG* - Janchai Yingprayoon**
* REAL Education Group Sdn Bhd - Malaysia
** Suan Sunandha Rajabhat University, Bangkok, THAILAND

Workshop 3: Using Low-cost Science Toys to Teach School Science

Sudhakar C Agarkar, VPM’s Academy of International Education and Research, Thane, M S, India,
Rajendra Kavathekar, Pendhakar College of Arts, Commerce and Science, Dombivali, M S, India,
Prashant Thakare Sardar Patel Mahavidyalaya, Chandrapur, M S India

Workshop 4: Ph.D Students’ Clinic. Organized by Miia Rannikmae, Science Education Center, University of Tartu, Estonia

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The First Science Teacher Association was founded in Turkey!



A group of Science Teachers in Izmir-Turkey started to work on founding a Science Teacher Association in December 2015. After strategic work and numerous efforts, the association was launched officially on 23 May 2016 and approved by the Izmir Governorship.

The main aims of the association are to support teachers to create effective science teaching and learning environments, to organize events such as conferences, science fairs, exhibitions, seminars to develop teachers' professional developments, to participate in national, international and European projects, and to share best practices in science education.

The official address of Association:

1721 Sk No:4/ 309 Karşıyaka / İzmir – TURKEY

E- mail: fenogretmenleriderneği@gmail.com

Web: www.fenoder.org



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ICASE PROJECTS

Earlier developments by ICASE (often in conjunction with UNESCO) were focused on developing Teaching Materials for Science (Chemistry, Physics, Biology) teaching, based on the concept of Scientific and Technological Literacy (STL) under the Project 2000+ movement. From this base, ICASE was invited to participate in two (2) European funded projects, both associated with the development of teaching materials. Examples and further references can be found on the ICASE website (icaseonline.net/profiles). Both projects followed on from the STL ideas, the associated Science for All and, more latterly, the Education through Science vision (Holbrook & Rannikmae, 2007).

To facilitate the ICASE involvement, a standing committee was established for International Projects operated under the chairmanship of Dr. (Prof) Jack Holbrook who was also heavily involved in the materials developed under ICASE within Project 2000+. The projects are very much in line with constructivism, interdisciplinary teaching and the promotion of problem solving. They pay particular attention to students' intrinsic motivation and the development of argumentation skills. ICASE is delighted to share these developments and outcomes and to support and cooperate with member organisations in the development of similar materials, more related to the local or national culture.

The 1st project highlighted is PROFILES. The acronym stands for Professional Reflection-Oriented Focus on Inquiry Learning and Education through Science. In promoting the ideas, after the PROFILES project timeline ended, ICASE has introduced its own name for the continuing thrust. This is SMILES – Student Motivation for Inquiry Learning and Education through Science.

What are the ideas behind the PROFILES or SMILES teaching materials?

1. Student motivation via a context-based approach. This is termed stage 1.
2. Inquiry-based learning to promote science conceptual learning. This is termed stage 2.
3. Science in society through decision-making, related to the earlier context. This is stage 3.

Using these ideas, each teaching material is based on a 3-stage model (Holbrook & Rannikmae, 2010; 2014). For example, in a 4 lesson teaching unit, approximately 1 lesson is allocated for stage 1 and is initiated by means of a scenario. This provides a base for stage 2 covering approximately 2 lessons involving students in science learning through appropriate inquiry-based approaches. The 3rd step is again approximately 1 lesson, following up on stage 2 and seeking to establish the societal value of the stage 2 science learning. The approach is to consolidate the science learning allowing better understanding of the initial scenario context and the promotion of argumentation skills.

What do the materials look like? This is best illustrated by “walking through” an example taken from the ICASE website (www.icaseonline.net/profiles/modules). For this example, “Are we overusing plastics” is described, a module for grade 10 chemistry (science) students.

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Examining the module - 'Are we overusing plastics?'

About the Module titles

The title is purposely given as a question, seeking to arouse student motivation by the controversial situation, or concern. Clearly, the expectation is that the learning go wider than a study of plastics and seeks to stimulate thinking related to - what was used before plastics were known and what substitutes can (or even should) be used. (If the title does not fit the cultural setting, alternatives can be used).

The stage 1 scenario

This student-focused introduction elaborates on the concern and introduces a relevant context illustrating the concern for students. At the same time, the scenario allows students' prior knowledge to be established, although its major function is to enable students to feel the need to learn additional science to better appreciate the concern and make possible decisions from a socio-scientific perspective. In this module, the scenario is a simple cartoon drawing attention to the widespread use of plastics.

The IBSE

This is very much stage 2 and represents the major cognitive science learning stage. The IBSE can follow the usual structured/guides/open approach (ref) and allows science learning about the structure, types, properties and inevitable uses of the subjects covered by the general term 'plastics' (in English always written with an 's' at the end to distinguish it from the adjective, plastic (a pliable substance)). A major component to bring to the attention of the teacher for stage 2 is the need to establish the conceptual understanding, perhaps by giving students an exercise interrelating the new science concept(s) (polymer, thermoplastic, thermosetting) with those already acquired previously, by means of a concept map.

The value of the science in society

The stress in stage 3 is that learning the science alone is not enough. It is important to appreciate that the science concepts do relate to meaningful learning in a societal sense. In this case, the title of the module provides a platform for debating the role of plastics in everyday life and whether its importance can be considered from different perspectives (cost, disposal after use, employment opportunities, skills needed by the work force, marketability, etc.). Arguing the scientific perspective, in the light of economic, environmental, social, moral or ethical considerations, provides a way of developing 21st century skills, as well as reinforcing the science conceptual ideas.

Does such an approach and the accompanying modules seem to be of interest? Why not examine a module on the ICASE website. Of course, teachers are very free to modify modules to fit their situation. Further descriptors can be found in various publications e.g. a special issue of SEI (vol. 23, no. 2, 2014); see www.icaseonline/seiweb); a special issue of Slovenian journal I.4 no.1, 2014) see www.cepsj.si; the 1st, 2nd and 3rd PROFILES publications; see www.profiles-project.eu/Dissemination/PROFILES_book/index.html). For more information, contact the ICASE representatives involved – Bulent Cavas (bulentcavas@gmail.com), Declan Kennedy (d.kennedy@ucc.ie), Miia Rannikmae (miia@ut.ee), and Jack Holbrook (jack@ut.ee).

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Are We Overusing Plastics?

by Jack Holbrook – International Projects, ICASE



A grade 10-11 science (chemistry) module on Thermoplastics and Thermoset plastics and their Recycling

Abstract

Plastics have invaded our lives to such an extent that it is almost impossible to think of life without them. Since plastics do not decompose as easily as other materials, their excessive use has created a problem of disposal of discarded products like plastics bags and bottles. As a result, plastics are slowly becoming a potential danger to the environment. There is thus the problem of plastic waste disposal or re-use.

| Sections included | | |
|-------------------|--------------------------------------|---|
| 1. | Student activities (for students) | Describes the scenario in more detail and the tasks the students should perform |
| 2. | Teaching guide | Suggests a teaching approach |
| 3. | Assessment | Gives suggested formative assessment strategies |
| 4. | Teacher notes | Provides additional information about plastics and student worksheets |

Acknowledgement

This module has been adapted from that developed under the PARSEL project (www.parsel.eu) as part of an EC FP6 funded project (SAS6-CT-2006-042922-PARSEL) on Popularity and Relevance of Science Education for scientific Literacy

IF YOU WANT TO DOWNLOAD THE FULL VERSION OF THIS ACTIVITY, PLEASE FOLLOW THE LINK BELOW:

<http://icaseonline.net/profiles/wp-content/uploads/2016/07/ICASE-Plastics.pdf>



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The 2nd project is **ENGINEER**, which as the name implies directly links to STEM education. The project itself is designed for the primary level (9-12 year old students), but can clearly be adapted for higher grades.

Two important features of the project are:

1. Promoting different engineering careers.
2. Introducing the engineering cycle.

The cycle is developed using non-technical language as – Ask, Imagine, Plan, Create, Improve paralleling the science approach of putting forward the science question to investigate, predict or put forward a hypothesis, planning the investigation, creating the technological product, and improving the project based on trialling.

But in essence the **ENGINEER** project leads to:

- a) Recognising a problem for which engineering can design and make a useful product.
- b) Learning the underlying science to better appreciate the technology produced through the engineering process.
- c) Consolidating the learning by ensuring the product is tested and made to include the improvement (redesign, modify) process.

There are 10 exemplary modules, none directly created by ICASE, but rather by those participating with the project consortium. The examples can be seen on the following website (www.engineer-project.eu).

The teaching module – **Suck it up: Designing a contraption that sucks up debris** (i.e. a vacuum cleaner)

What are the ideas behind the materials?

1. The title and a scenario initiate the teaching module.
2. Soliciting student ideas and prior knowledge is important.
3. Gaining the scientific ideas needed for developing the engineering product, based on a design process. This is undertaken in a hands-on practical approach building up the conceptual ideas.
4. The product, once created needs to be tested and improved based on experiences gained and suggestions made by other students.

ICASE is very interested in sharing its experiences from working with the project consortium and supporting member organisations interested in developing their own brand of engineering (interrelated with science)

For further information, please contact the ICASE representatives involved.

For **ENGINEER**, Bulent Cavas bulentcavas@gmail.com and Jack Holbrook jack@ut.ee

We look forward to working with you!

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Science Adventures!

by Dalya KINSIZER Hisar School-Istanbul-Turkey, A grade 6 Student

Imagine that its been a hard and frustrating day at school and your last period is science, you walk into that lab where theres's a big colorful poster of the periodic table, clean and shiny desks, over at the corner neon poster papers and color pencils, around you there are lab suits and science projects from biology, physics and cool looking DNA models, but right in front of the class there's your science teacher with the newest astro news and fun projects. Science lessons are the lessons where we are able to question the living and understand the environment in which we live. We get to ask why and how so often that it makes us wonder if it can be different somehow. The best part is the experiments that we get to do to understand and see for ourselves. Unlike other classes, science let's us question and let's us see it and live it too. We don't just memorize what we read in our book; we memorize the projects and the experiments that we have done in class. We get to use our imagination on technological ideas and online projects. For each homework assignment, we make mind maps that we share with our classmates. We get to inspire each other by creating a product that shows our learning. For unit projects, we create Kahoots and QR Codes to share our knowledge with our friends.

Once, we were detectives who were asked to solve a crime involving a stolen bicycle; we wore our lab coats and used fake blood samples to find the thief. One of my personal favorites was when we sang for every unit, still having the lyrics in our minds; Aorta sent out bloooodd....Oh, I couldn't forget about our outdoor science classes, their were the best! We got to go outside and make our projects and then presented them to the whole class! We got to comment on each others work to improve our projects and presentation skills. I remember when we were once cutting a heart of a cow. It was amazing to experience the feeling of a real cardiac muscle-organ, touching aorta and looking at ventricles; it was just so much fun! Sometimes, we divided the unit into groups and created a festival outdoors in the school garden where students from different grades could join to see our projects. Later, we completed a Google Documents Form to make useful and nice comments on the work of each group and reflected on our learning. Unlike other lessons, science was special and it was a great lesson that allowed us to have fun while learning. If it wasn't for science and the discoveries we would not be this wise about the environment in which we were living.

I also think that teachers and families also play a huge role in establishing students' relationships with science. Students are spending most of their hours in school and their teachers also, playing a role in their lives. So if our teachers make knowledge fun for us without thinking, we directly bond with that lesson even if it is out of our league. Our teachers encourages us to believe in ourselves and to do our best and, most importantly, they help us to strive for our goals by making us aim as high as possible. As they say, a lot depends on the teachers and parents...They have to be supportive no matter what. That's why I love science class... Oh wait! My Brine Shrimp Eggs are hatching! Can't wait to bring them to school and show them in science class!!

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News from UNESCO

“There is now a growing international recognition of ESD as an integral element of quality education and a key enabler for sustainable development.” UNESCO Roadmap for Implementing the Global Action Programme on Education for Sustainable Development, 2014, p. 9. For more information on Understanding ESD see:

<https://sustainabledevelopment.un.org/content/documents/1674unescoroadmap.pdf>



Understanding ESD

ESD empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content and outcomes, pedagogy and the learning environment. It achieves its purpose by transforming society.

Dimensions of ESD

- Learning content:** Integrating local issues, such as climate change, biodiversity, disaster risk reduction (DRR) and sustainable consumption and production (SCP) into the curriculum.
- Pedagogy and learning environments:** Creating exciting and learning in an interactive, learner-centred way that enables students to acquire transferable and transformative learning. Maximising learning environments – physical as well as virtual and online – to inspire learners to act for sustainability.
- Learning outcomes:** Maximising learning and promoting skills development, such as critical and creative thinking, collaborative problem-solving, and taking responsibility for present and future generations.
- Societal transformation:** Empowering learners of all ages, in all education settings, to transform themselves and their societies. This involves:
 - Enabling a transition to greener economic and lifestyles.
 - Empowering learners with skills for green jobs.
 - Motivating people to adopt sustainable lifestyles.
 - Encouraging people to be global citizens who engage and assume responsibilities, both locally and globally, to tackle and resolve global challenges and ultimately to become positive contributors to creating a more just, peaceful, tolerant, inclusive, secure and sustainable world.

For ideas on integrating ESD into your science classroom see the Education for Sustainable Development Sourcebook at <https://sustainabledevelopment.un.org/content/documents/926unesco9.pdf>

UNESCO ESD EVENT: BRIDGING THE GAP Conference
The 1st Swedish International Global Action Programme on ESD Conference and the 9th Biennial Meeting of the International Network of Teacher Education Institutions associated with the UNESCO Chair on Reorienting Teacher Education to Address Sustainability took place from 21 – 24 August 2016 at Campus Gotland, Uppsala University, Sweden. The event was hosted by SWEDES, Uppsala University - Campus Gotland, in collaboration with Learning Teacher Network and Swedish National Commission for UNESCO. Bridging the GAP was a joint conference that brought together the 1st Swedish International Global Action Programme (GAP) on ESD and the International Network of Teacher Education Institutions (INTEI). The conference focused on quality education and ESD, i.e. Goal 4 of the Sustainable Development

goals (SDGs) and on how Goal 4 is linked to other SDGs. Representatives of Teachers and Teacher Educators from Sweden and more than 70 countries participated. Dr. Teresa Kennedy, ICASE President, and Dr. Michael Odell, President of the South West Association of Science Teacher Educators—USA, attended the event and presented a poster presentation with ESD examples from the ICASE network. Attendees included members of Swedish GAP Action Area 3, faculty members and deans of teacher education institutions, principals of teacher education institutions or other upper administrators from faculties of education, representatives of national and state/provincial ministries of education and UNESCO staff from Paris and Field Offices. For more information see

www.swedesd.uu.se





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ICASE New Member Organization Highlight

ICASE welcomes the The Society of Education of Chemistry and Physics

(Gesellschaft für Didaktik der Chemie und Physik, GDCP)



GDCP supports research, teaching and development in chemistry and physics teaching and learning as well as science education in general. Established in 1973 as an association of educational researchers and experts, today the GDCP represents about 600 members. During annual conferences of the society current research and developments are presented and discussed. "Special Interest Groups" hold meetings for discussing special topics in the field of teaching and learning physics and chemistry. Finally, during annual doctoral conferences advice is provided to young scholars in the beginning of their PhD projects. The GDCP supports the development of professorial chairs of education in chemistry and physics at universities and research institutes in Germany, Sitzerland and Austria. Our society highlights the importance of these disciplines for high-quality education in physics and chemistry as well as for teacher professional development and educational policy. The GDCP fosters the distribution of information on research and development by supporting the Journal of education in science (Zeitschrift für die Didaktik der Naturwissenschaften, ZfDN) in cooperation with Germany's largest association for life sciences (VBIO). www.gdcp.de

ICASE News from the Regions

AFRICA

Dr. Ben Akpan, Executive Director of the Science Teachers Association of Nigeria (STAN) and Immediate Past President of ICASE, worked with 23 contributing authors from 11 countries within the ICASE network (Australia, Brazil, Estonia, India, Malaysia, New Zealand, Nigeria, Portugal, South Africa, the UK and the USA) to publish an important resource book entitled ***Science Education: A Global Perspective***.



As explained in the preface of the book, this resource highlights "current developments in science education and their implications. These developments should make us explore how to improve on the quality of delivery of science education by shaping our opinions. Thus, the ideas expressed in this book are expected to promote discourse and thereby advance the cause of science education in all its ramifications." The final chapter of the book, written by Dr. Akpan, looks at "science education in 50 years' time with a recommendation, among others, for stakeholders to take responsibility of preparing children towards a blossoming science education sector in an anticipated future world." The resource book was published by Springer International Publishing Switzerland. ISBN 978-3-319-32350-3; ISBN 978-3-319-32351-0 (eBook).

AUSTRALIA/PACIFIC

CONASTA - the Conference of the Australian Science Teachers Association by A. Kanakis

CONASTA 65 presented some of the most interesting and inspiring keynote speakers that I have experienced at a single conference. Whilst some of the topics highlighted serious global problems, such as the potential lack of food for an ever increasing human population, and the fact that most western populations are ageing significantly, the speakers offered possible solutions and presented the important role of science in achieving them. There was an emphasis on the importance of the study of agriculture in Australian universities and the need for teachers and science communicators to encourage secondary students who study chemistry, biology and maths to pursue it rather than focussing only on mining, medicine and law. We were also warned about the need to seriously consider bacterial resistance to antibiotics and the role

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ICASE News from the Regions, Cont.

that science will have to play in preventing this from being the major cause of death of humans in the near future. The need for society to inspire more women to study science was highlighted, as there remains gender inequality in most science based careers in Australia. Inspirational talks by some amazing women in various occupations, including aeronautic engineering, presented their stories about how they were motivated to study science and how they overcame issues faced by women who, for example, have children and want to continue working and keeping up with current research. Other speakers presented their diverse and interesting research and demonstrated how teachers could use it to teach and motivate students to study topics such as astronomy, a subject poorly understood and hence often avoided in the classroom. At the Science Breakfast we were treated to the study of entomology, and the many ways that teachers could use insects to teach biological processes such as classification, ecological succession and the interdependence of living things in the environment. Many of the workshops that I attended, and the keynotes, reminded teachers of the need to change their pedagogies in the classroom to incorporate more scientific inquiry so that students “think scientifically”, and successfully question, analyse and evaluate. Experiencing science through observation, experiments and investigations, fieldwork and expeditions were highlighted as being vital if we are to produce quality scientists and engineers in Australia.



STAWA (Science Teachers' Association of Western Australia)

International Travel Scholarship offered by STAWA (Science Teachers' Association of Western Australia) has been awarded to Geoff Quinton, Head of Department, Science, Perth College, to attend the ASE meeting in the UK. The scholarship has been established to enable experienced Western Australian science teachers or HoDs to interact with international colleagues and systems and then share experience with colleagues on their return home. The successful applicant is able to choose an international science teachers' conference and their travel costs are paid by STAWA. It is hoped that similar scholarships will be offered by other countries to support their teachers to come to Western Australia to interact with our schools, science teachers and science centres. Geoff has expressed interest in attending the ASE meeting in the UK in January, 2017. He thought it would be valuable in terms of looking at professional practise and trends in Europe and how curriculum development is progressing in the UK, 25 years after the introduction of a national curriculum. He said that there are also some innovative IT in education initiatives currently happening in the UK which would be beneficial to see in action. He will share his experiences with STAWA members and his school.

Suggested Slogan from the researchers in the region: *“THERE'S A LOTTA METRES IN A YOTTAMETRE!”*

Interested in learning more about this interesting slogan? Contact Australian member Ted Davis and his colleagues at the Australian Astronomical Observatory teddavis019@gmail.com

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ICASE News from the Regions, Cont.

EUROPE

ICASE Centre hosts Summer School for Chemistry Teachers by Dr. Declan Kennedy

The ICASE Science and Technology Education Centre in the Eureka Centre of University College Cork (UCC), Ireland recently hosted a very successful Summer School for Chemistry teachers. ICASE recognises that the chemistry teacher is the key to excellence in the teaching and learning of chemistry. An inspiring and enthusiastic chemistry teacher nurtures a love of chemistry among students and fills them with a love for the subject. The Cork region in Ireland is fortunate to be the home of eight of the top ten pharmaceutical companies in the world. BASF is one of these companies and, fortunately for science educators, BASF has a great commitment to science education and provides sponsorship to run the summer school each year. This summer school is also supported by the Professional Development Service for Teachers (PDST). The PDST is the government organisation responsible for inservice training of teachers in Ireland and gives formal recognition to the course as a recognised CPD event and also pays the travel and subsistence allowances to teachers.

The BASF Summer School arose out a request made to the ICASE Science and Technology Centre from chemistry teachers in the ISTA (Irish Science Teachers' Association) for assistance to help them to update their knowledge and skills to teach chemistry - particularly the new aspects of the chemistry syllabus in Ireland. As BASF has an excellent track record in promoting chemical education through the sponsorship of various activities at local level, the BASF plant in Little Island near Cork was contacted by Dr. Declan Kennedy, UCC for sponsorship to provide assistance to the chemistry teachers. After discussions held with Frank McDonnell, Dr. Dan McSweeney and Paul O'Driscoll, the BASF Summer School was born in 2012 and has continued since that time. Initially, it was planned that the BASF Summer School would be a one-day event but so many teachers apply for places each year that it is now run over two days. Due to the heavy emphasis on practical work, the numbers attending each day are limited to 30 teachers. Thus, over the two-day period a total of 60 teachers attend the BASF Summer School this year. Each BASF Summer School is based around a particular theme on the Leaving Certificate chemistry syllabus in Ireland. The Leaving Certificate syllabus is studied by 18 year old students prior to entering third level education. The themes studied each year in the BASF Chemistry Summer Schools are summarised in Table 1.

Table 1. Themes of BASF Chemistry Summer Schools 2012 - 2016

| Year | Theme of BASF Chemistry Summer School |
|------|---|
| 2012 | Assessment of Practical Work in the revised Leaving Certificate Chemistry Syllabus |
| 2013 | Key Practical Skills in Chemistry. |
| 2014 | Instrumentation in the Leaving Certificate Chemistry Syllabus |
| 2015 | Industrial Chemistry and Atmospheric Chemistry in the Leaving Certificate Chemistry Syllabus. |
| 2016 | Teaching the Organic Chemistry section of the Leaving Certificate Chemistry Syllabus. |

The BASF Summer School is based each year in the laboratories and teaching rooms of the ICASE Science and Technology Centre of the Eureka Centre of UCC. The Eureka Centre is part of the College of Science, Engineering and Food Science (SEFS) of the university. It is an ideal centre for providing inservice training to science teachers as it consists of two recently built state-of-the art science education laboratories, a Science Education Resource Centre, offices and a seminar room fully equipped with the latest audio visual communication facilities. Funding for the Eureka Centre was provided by government sources, by the pharmaceutical industry and by the College of SEFS. The laboratories are fully equipped with all the apparatus and chemicals needed to teach the syllabi in Chemistry, Biology and Physics to Leaving Certificate standard.



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The Fifth Annual BASF Summer School was held on Tuesday 28 June and Weds 29 June 2016. The timetable that was followed on both days is given in Table 2.

Table 2. Programme for Fifth Annual BASF Summer School

| PROGRAMME | |
|---------------|---|
| 9.00 – 9.30 | Registration. Tea / Coffee. |
| 9.30 – 10.15 | The answering of Organic Chemistry questions on the Leaving Certificate examination - Mr Pat Walsh, De La Salle Secondary School, Macroom, Co. Cork. |
| 10.15 – 11.00 | The interface between Leaving Certificate Organic Chemistry and third level Organic Chemistry - Dr Gerard McGlacken, Department of Chemistry, UCC. |
| 11.00 – 11.15 | Tea / Coffee. |
| 11.15 – 12.00 | Just where do those curly arrows come from? - Professor David Waddington, University of York, England. |
| 12.00 – 12.45 | Organic Chemistry Laboratory practical session. - Dr Declan Kennedy, Department of Education, UCC. |
| 12.45 – 1.45 | Lunch in UCC staff dining room. |
| 1.45 p.m. | Bus departs from UCC to Whitegate Oil Refinery. |
| 2.30 – 4.00 | Visit to Whitegate Oil Refinery. |
| 4 p.m. | Presentation of Certificates of Attendance. |



Group of chemistry teachers who attended the first day of the BASF Summer School.



Group of chemistry teachers who attended the second day of the BASF Summer School.

BASF was represented at the BASF Summer School by Frank McDonnell who spoke of his delight that the BASF Summer School had proved so attractive to chemistry teachers and that all places had been filled each year with the demand for places exceeding the number of places available. He congratulated the teachers present on taking time out of their summer holidays to update themselves on new approaches to teaching organic chemistry. He also expressed the wish that the BASF Summer School would be of assistance to them in teaching the Leaving Certificate Chemistry syllabus and promoting chemistry in their schools. At the end of the BASF Summer School, each teacher was asked to complete a feedback questionnaire. The feedback from the teachers was extremely positive. Typical comments were:

- *I really enjoyed the day - it was very well run. Many thanks to BASF for organising this.*
- *I enjoyed the hands on practical activities in the labs.*
- *This was an excellent day - really informative and enjoyable.*
- *The industrial trip was a great idea. I found it very insightful. It was my first time visiting an Oil Refinery.*
- *I have found all parts of today extremely interesting and informative. I have learned a lot to bring back into the classroom. Well done all! A great day!*
- *I have been to lots of inservice courses and this was among the best!*

In bringing the seminar to a close, Dr. Declan Kennedy thanked BASF for making the BASF Summer School a reality as without their support it would not have been possible to hold the seminar. He spoke of the international vision of ICASE in providing CPD to science teachers worldwide and emphasised the close links between ICASE and the local branch of the Irish Science Teachers' Association who hold their monthly meetings in the ICASE Science and Technology Centre. He also thanked the PDST for recognising the course as a formal inservice training course for teachers. He described this initiative as an excellent example of an Industry-Education partnership and expressed the wish that the BASF Summer School would become an annual event in the calendar of chemistry education in Ireland.

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ICASE News from the Regions, Cont.

LATIN AMERICA

The Brazilian National Biology Association announces a new textbook on Indigenous Educations has been published! The authors are indigenous teachers of Terena Ethnicity who jointly developed the content based on their needs and interests, relating science and environmental protection in Terena Language, one of more than 200 native languages spoke in Brazil. The Teacher resource book is in Portuguese and the Student book in the Terena mother tong. The book was financed by the Federal government in an Institutional Project from the National Transportation Department, produced by the Technology and Transportation infrastructure Institute, and Edited by Christiane Gioppo with the institutional support of the Biology Education Association (South Sector). The book is not divided into science contents, grades or school disciplines, instead it has many different stories from the indigenous village and the topics are developed from the story.



NORTH AMERICA

NSTA's 11th annual International Science Education Conference was held on Wednesday, March 30, 2016 in Nashville, Tennessee during the NSTA National Conference. The conference focused on Global Conversations in Science Education with the theme "Science Goes Global: The Next Generation". In attendance were more than 85 participants from 16 countries (Australia, Bahamas, Canada, China, Denmark, India, Israel, Italy, Mexico, Nigeria, Saudi Arabia, Taiwan, Thailand, Turkey, United Kingdom, and the United States). See the full summary and program description at <http://www.nsta.org/docs/2016GlobalConversationsInScienceEducation.pdf>



ICASE President Dr. Teresa Kennedy, ICASE President-Elect Dr. Bulent Cavas and Europe Regional Representative Dr. Sue Dale Tunnicliffe displayed posters describing their activities, Grumman Foundation international teacher awardees Douglas Napolitano-Cremine from Ashmole Academy, London, UK, and Nathan Curnow from John Curtin College of the Arts, Fremantle, Western Australia.

The 2017 NSTA event will take place in Los Angeles, California on 30 March – 2 April.
Mark your calendar!



Dr. Sue Dale Tunnicliffe
awarded the NSTA Faraday
Science Communicator Award!
March 2016

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ICASE Member Organization – Upcoming Events - AUSTRALIA

Invitation to teachers and physics education researchers to an International conference in late November, 2016 in Western Australia: **International Workshop on the Teaching and Learning of Einsteinian Physics in the Era of Gravitational Astronomy**



This one week workshop supported by The Australian Research Council and the Norwegian Research Council will bring together science educators and scientists interested in modern physics in the school curriculum at The Gravity Discovery Centre, Gingin Shire, Western Australia (1 hour from Perth Airport).

Dates: 28 November to 2 December, 2016 with Special Workshops for Teachers – 30th November to 2nd December 2016

Building on the expertise of highly interdisciplinary teams consisting of science educators, physicists, teachers and research students we will contribute to developing innovative teaching and learning resources in modern physics specifically, and in school science and science teacher education

REGISTRATION: To register for Workshop, cut and paste the title into a search engine: **International Workshop on the Teaching and Learning of Einsteinian Physics in the Era of Gravitational Astronomy** or type in the following URL: <http://www.cvent.com/events/international-workshop-on-the-teaching-and-learning-of-einsteinian-physics-in-the-era-of-gravitation/agenda-4f6ed0abf23c4c999ea4fc4dcf9fcb6.aspx>

CONTACT: John Clarke, CEO, STAWA: john@stawa.net or Dr. Elaine Horne: ehorne54@inet.net.au

ICASE Member Organization – Upcoming Events - BRAZIL



From 3 to 8 of October there will be the Brazilian National Meeting of the Biology Education Association, in Maringá, Paraná State in Brazil.

The theme of the meeting is Educacional Public Policies: impacts and proposals to Biology Education.

The meeting will be held at the Maringá State University. For more information, see <http://eventos.idvn.com.br/enebio2016/home>



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ICASE Member Organization – Upcoming Events - JAPAN



EASE2016TOKYO
2016 International Conference of
East-Asian Association for Science Education

The East-Asian Association for Science Education approaches a decade of existence since 2007. EASE2016TOKYO will hold their 5th International Conference of East-Asian Association for Science Education: Innovations in Science Education Research & Practice – Strengthening International Collaboration. <http://ease2016tokyo.jp>



2016 International Conference of
East-Asian Association for Science Education
EASE2016 Tokyo
August 26 – 28, 2016
Tokyo University of Science
Tokyo, Japan

What's New About the Conference Conference Program Call for papers Registration Information



EASE2016 Tokyo

Innovations in Science Education Research & Practice:
Strengthening International Collaboration

Registration: March 1 - July 31, 2016

> Registration Form



What's New

Archives

- July 25, 2016 Conference program is updated.
- July 25, 2016 The Conference Handbook (Program) has been released. It is still tentative and may include several mistakes which needs corrections. The final version is found in the e-proceedings.
- May 31, 2016 Awards Program is announced.



日本から参加される皆様へ >>>



EASE2016 TOKYO
Innovations in
Science Education Research & Practice:
Strengthening International Collaboration

Conference Handbook
Tokyo University of Science
Tokyo, Japan
August 26-28, 2016

Contact us

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ICASE Member Organization Announcements

For Science Technicians



RSciTech

Registered
Science Technician

Professional Registration for Science Technicians

**Are you an experienced technician with demonstrable skills and experience?
Have you considered applying for a Registered Science Technician Award (RSciTech)?**

The award is a registered mark recognising excellence for technicians working in science education. ASE is licensed by the Science Council to award RSciTech to eligible members.

Benefits:

- Provides recognition of your expertise, experience and commitment
- Provides a framework to support your future career development
- Provides wider recognition for your skills
- Demonstrates your commitment to employers
- Creates a broader community of scientists working across a range of sectors.

Eligibility criteria:

- Be an ASE Member
- Have a level 3 qualification (e.g. NVQ Level 3) or equivalent experience
- Possess relevant scientific or technical knowledge (typically one year's experience or up to four years if without formal qualifications)
- Are able to demonstrate your knowledge, skills, professional practice and professional standards.

How to apply:

Download the application form at:

ase.org.uk/rscitech

and send to:

cscitech@ase.org.uk

Please include copies of your certificates. The application fee is £35 and there is an annual renewal fee of £20.

[Read Ann's Story Overleaf >>](#)

 **The Association
for Science Education**

The Association for Science Education, College Lane, Hatfield, Herts AL10 9AA, T: 01707 283000 F: 01707 266532 E: info@ase.org.uk W: www.ase.org.uk
VAT number: GB 330 3753 93 | Royal Charter: FOC 000805 | Patron: HRH The Duke of Edinburgh | Registered Charity: 313123/30042473

RSciTech and RSci
is accredited by the:





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ICASE Member Organization Announcements, Cont.

The NSTA Learning Center

Personalized Professional Learning for Teachers of Science

The National Science Teachers Association (NSTA) is committed to providing the very best online professional learning to teachers who teach science, supporting a true blended professional learning experience.

The mission NSTA Learning Center (NSTA LC) is to enhance the personal learning of science educators by providing a suite of tools, resources, and opportunities that support their long term growth based on their unique learning needs and preferences within a collaborative learning community.

LEARN TODAY, YOUR WAY
<http://learningcenter.nsta.org>

Create a free account and join over 180,000 like-minded individuals who work daily in this online community to better themselves as science educators.

Over 4,000 free resources and opportunities are available to help teachers enhance their content and pedagogical knowledge. Many others resources are available "a-la-carte." The NSTA LC has something for every educator!

Web Seminars!

Register to attend free web seminars from the comfort of your home.

<http://learningcenter.nsta.org/webseminars>



Community Forums Discussions!

Join science educators from all around the world as they share resources and learn together.

<http://learningcenter.nsta.org/discuss>

Education Resources for Teachers of Science!

Search for lesson plans and other resources.

<http://learningcenter.nsta.org/search>



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ICASE Journal - Science Education International

The ICASE quarterly journal is now about to enter its 26th year. From humble beginnings in 1990 when it was created to serve as the dissemination channel for ICASE, the journal has now grown to be a major English language international science education journal, receiving articles from science educators around the world. Thanks to its team of volunteers, the journal follows a strict review process to ensure the research and philosophical articles meet the ICASE criteria as relating to primary or secondary science education, or to pre-service teacher education at the tertiary level. Since 2008, the journal is available as open access, online only, although limited copies of occasional issues are published and distributed to interested science educators.

THE ICASE JOURNAL IS A MAJOR DISSEMINATION CHANNEL FOR ICASE MEMBER ORGANISATIONS AND THEIR MEMBERS. AS SUCH, ICASE GIVES PRIORITY TO ARTICLES SUBMITTED VIA ICASE MEMBER ORGANISATIONS AND IS VERY WILLING TO ASSIST MEMBER ORGANISATIONS IN PREPARING ARTICLES FOR THE JOURNAL (especially with respect to written English).

A major attraction of SEI is that there is no payment for those wishing to publish in the journal. And ICASE welcomes submissions by teachers, higher degree students or science educators in general from around the world. ICASE will do its best to assist authors whose native language is not English.

Before making a submission, please consult the Author's Manual for SEI located at www.icaseonline.net/seiweb for information related to the following topics:

- (a) Copyright
- (b) Plagiarism
- (c) Language
- (d) Material submission
- (e) Formatting
- (f) Artwork & Photos
- (g) The Review Process
- (h) Non-native English authors

And we very much appreciate referencing articles previously published in SEI in your submissions.

ICASE also welcomes new reviewers. If you are interested please contact Dr. Baohui Zhang, Chair, ICASE Research and Publications Standing Committee at baohui.zhang@snnu.edu.cn.

Please refer to www.icaseonline.net/seiweb for the full articles.

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The ICASE Constitution - Description of position membership and specifies terms of service

<http://www.icasonline.net/const.html>

ELECTIONS AND APPOINTMENTS

7.1 General Regulations

7.1.1. To be eligible for election to the Executive Committee a person must be a member of one of the Full Members of ICASE.

7.1.2. The cycle of President Elect, President and Immediate Past President shall be regarded as a single position which a person shall occupy for six years. The six term shall consist of two years as President Elect, three years as President and one year as Immediate Past President.

7.1.3. No person shall be able to stand for election to the cycle outlined in 7.1.2 immediately after completing a cycle.

7.1.4. Consecutive Presidents cannot come from the same Region.

7.1.5. Terms of office for all other positions on the Executive Committee shall be three years.

7.1.6. Except for the cycle outlined in 7.1.2, no person shall be able to stand for election for the same position on the Executive Committee for more than two consecutive terms.

7.1.7. The period of office for members of the Executive Committee shall be the period from six months after a General Assembly until six months after the next General Assemblies except for:

- a) the position of President Elect, where the person will take office eighteen months after the General Assembly at which he/she is elected, and
- b) the position of Immediate Past President, where the person will complete their term of office eighteen months after the General Assembly at which a new President Elect is elected.

AVAILABLE POSITIONS ON THE ICASE MANAGEMENT COMMITTEE AND EXECUTIVE COMMITTEE

- **President Elect** (7.1.4. The European Region must wait until the 2019 elections to submit a candidate)
- **Secretary** (Second Term of current secretary ends; ineligible for re-election)
- **Treasurer** (Second Term of current secretary ends; ineligible for re-election)

Regional Representatives:

Regions up for election include: Africa; Australia/Pacific; Latin America; North America.

Standing Committee Chairs:

- International Projects
- Membership
- Pre-secondary & Informal Science Education
- Safety
- Science Centres
- Sustainability and Environmental Education
- University Liaison

Annual Membership Renewal:

Due: 1 January each year!

<http://www.icasonline.net/membership.html>



**SUBMIT YOUR INTEREST TO SERVE
on the ICASE Management and / or
ICASE Executive Committee:**

<https://goo.gl/KdVXVf>

**Elections will take place at the
World STE in Turkey!!**

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ICASE Executive Committee 2014-2017

ICASE membership spans the world led by an Executive Committee, with a Management Committee (President, President-Elect, Immediate Past President, Secretary, and Treasurer) responsible for the day-to-day administration and working closely with Regional Representatives and Chairs of Standing Committees. Presidential terms are noted below.



President (2014-2017)

Dr. Teresa Kennedy, Assistant Vice President for Intl. Programs and Professor, STEM Education University of Texas at Tyler Tyler, Texas, USA
E-mail: tkennedy@uttyler.edu
**Also Membership Chair*



Immediate Past President

(Presidential Term: 2011-2014)

Dr. Ben Akpan
Executive Director of the Science Teachers Association of Nigeria (STAN) Abuja, Nigeria
E-mail: ben.b.akpan@gmail.com
**Also World Conference Chair*



President-Elect (2014-2017)

Dr. Bulent Cavas
Associate Professor Department of Science Education Dokuz Eylul University Izmir, Turkey
E-mail: bulentcavas@gmail.com
**Also Webmaster/Web Communications*



Past Presiden

(Presidential Term: 2008-2011)

Dr. Jack Holbrook
Visiting Professor, Center of Science Education, University of Tartu Tartu, Estonia
E-mail: jack@ut.ee
**Advisory capacity to the Management Committee/Also International Projects Chair*



Secretary (2013-2016)

Dr. Beverley Cooper
Associate Dean Teacher Education Director of the Centre for Teacher Education, The University of Waikato Hamilton, New Zealand
E-mail: bcooper@waikato.ac.nz



Treasurer (2013-2016)

Dr. Lindsey Conner
Dean of Education Flinders University Adelaide, Australia
E-mail: Lindsey.conner@flinders.edu.au

Regional Representatives (2013-2016)



Regional Representative for Africa

Dr. Mamman Wasugu
Provost (President), Federal College of Education, Katsina State University, Katsina, Nigeria
Senate Chair, Usmanu Danfodiyo University, Sokoto, Nigeria
Professor of Science Education
E-mail: mammanwasugu@yahoo.ca



Regional Representative for Europe

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Regional Representative for Asia

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Regional Representative for Latin America

Dr. Christiane Gioppo
Faculty Member, Universidade Federal do Paraná, Setor de Educação, Departamento de Teoria e Prática de Ensino (DTPEN) Curitiba, PR - Brasil
E-mail: cgioppo@yahoo.com



Regional Representative for Australia/Pacific

Dr. Christine McDonald
Lecturere, School of Education and Professional Studies, Griffith University, South Brisbane, Australia
E-mail: c.mcdonald@griffith.edu.au



Regional Representative for North America

Dr. Michael Padilla
Professor of Science Education Former President, NSTA South Carolina, USA
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Chairs of Standing Committees



International Projects

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Visiting Professor, Center of Science Education, University of Tartu
Past President and Newsletter Editor
Tartu, Estonia
E-mail: jack@ut.ee
**Also Newsletter Co-editor*



Membership

Dr. Teresa Kennedy
Assistant Vice President for Intl. Programs
Professor, STEM Education
University of Texas at Tyler, USA
E-mail: tkennedy@uttyler.edu
**Also President (2014-17)/Newsletter Co-editor*



Pre-secondary & Informal Science Education

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**Also Editor of Science Education International*



Safety in Science Education

Dr. James Kaufman
President/CEO, The Laboratory Safety Institute
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Science and Technology Education Centres

Dr. Janchai Yingprayoon
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janchai@loxinfo.co.th
**ICASE Past President (2004-2007)*



Sustainability and Environmental Education

Dr. Elaine Horne
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University Liaison

Dr. Miia Rannikmae
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Web Communications

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E-mail: bulentcavas@gmail.com
**Also President Elect/Newsletter Co-editor*



World Conferences

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