



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## Welcome to the ICASE January/February 2019 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 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 32 organizations from 30 countries contributing to the financial administration of ICASE.

[www.icaseonline.net/membership.html](http://www.icaseonline.net/membership.html)

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



To be included on the listserve for notification of future newsletters please follow the guidelines at:  
[www.icaseonline.net/news.html](http://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>

## Contents of Newsletter

ICASE Membership Update	2
2019 ICASE World STE Conference	5
News from UNESCO	9
ASE 2019 Conference	12
New Book- Emerging Biology in the Early Years	15
STEMify: A Forum on the Practice of STEM Education in Phillippines	16
Asbestos in School Science Equipment	19
ICASE involved Project- Daylighting Rivers	21
Upcoming Events	24
ASERA 2019 Conference	26
Collaboration with ITEN and funding opportunities	27
ICASE Journal- Science Education International	28
ICASE Committees	30

## Newsletter Editors of this issue:

Yasemin Özdem-Yilmaz  
ICASE Secretary  
[yasemin.ozdem@hotmail.com](mailto:yasemin.ozdem@hotmail.com)

Bulent Cavas  
ICASE President  
[bulentcavas@gmail.com](mailto:bulentcavas@gmail.com)

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*



International Council of Associations for Science Education

## **ICASE Annual Membership Update**

### **It's time to renew your organizational ICASE member fees!**

Membership fees are due January 1st each year and three-year options are available at a reduced rate! Membership renewal is easy and can be done totally online on the ICASE Website at: <http://www.icasonline.net/membership.html> and a receipt will be sent to you. If your organization needs to receive an invoice, please notify us to request an invoice.

ICASE provides opportunities for member organizations and their representatives to promote excellence and innovation in science teaching and learning for all through:

- connections to the members of other science organizations around the world;
- opportunities to serve in ICASE international leadership positions on standing committees and in international research initiatives;
- communication venues to disseminate information internationally to the members of international science organizations through the ICASE listserv, newsletter and peer-reviewed ICASE journal;
- collaborative funding opportunities to promote science education at regional levels; and
- organization of ICASE World Conferences, regional events, and workshops providing opportunities for professional development and networking.

### **How are your membership fees put in to use?**

ICASE membership fees are used for financial support of regional activities. Approval for funding will be considered based on a written submission (request for funding support) to the ICASE secretary, which clearly indicates how the activity meets the following criteria. All financial support for activities will be approved by the ICASE management committee, in consultation with the Executive Committee, and is subject to funds (generated by ICASE membership fees) being available.

**International Council of Associations for Science Education (ICASE)**  
<http://www.icasonline.net>



1. The applicant organisation must be a current financial member of ICASE.
2. The activity must promote science education at a regional level.
3. The applicant organisation should provide a description of the activity and the potential benefits (including the extent of benefits - number of beneficiaries, and how it meets the short term and long-term goals of promoting science education in that region).
4. ICASE must be acknowledged as a sponsor on all publicity material including the website advertising the initiative. The ICASE logo must be displayed on all materials associated with the funding.
5. Funding requests will be accepted for the following range: \$500 - \$2,000. These funds are intended to cover special initiatives associated with activities occurring in benefit of each region.
6. The applicant organisation must provide a budget for the activity including other sources of funding.
7. The applicant organisation must have an institutional bank account for the transfer of funds.
8. The applicant organisation must nominate a person in their organisation who will take responsibility for the activity, all expenditures and reporting (in writing) at the subsequent World Conference.

The report may be presented via video conferencing if the organization is unable to fund a member to attend an ICASE World Conference. Please note that the ICASE Management Committee reserves the right to approve funding for second and subsequent applications, from the same region within a threeyear period, even when the application may come from a different organisation.

#### **BECOMING A MEMBER ORGANISATION**

ICASE invites national, sub-national and multi-national organisations interested in the promotion of science and technology education to join its worldwide network. Organisations eligible to join are STAs, Science Societies, Institutes, Universities (or University Departments/Faculties), Industries, Companies, Centres and Museums. These organisations may have a sole interest in science education (or in one of its sub-disciplines such as biology, chemistry, physics, Earth sciences, etc.) or have wider interests one of which is science education. According to the ICASE Constitution, requests for new members, whether full or associate, are approved by the ICASE Executive Committee.



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*

ICASE provides opportunities for member organizations and their representatives:

- to promote excellence and innovation in science teaching and learning for all through;
- connections to the members of other science organizations around the world;
- opportunities to serve in ICASE international leadership positions on standing committees and involvement with international research initiatives;
- communication venues to disseminate information internationally to the members of international science organizations through the ICASE listserv, newsletter and peer-reviewed ICASE journal;
- collaborative funding opportunities to promote science education at regional levels; and
- organization of ICASE World Conferences, regional events, and workshops providing opportunities for professional development and networking.

In addition, ICASE member organizations and their representatives receive reduced conference registration fees for attendance at all ICASE World Conferences.

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



**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
*The ICASE Newsletter*

*January/February 2019*

## ICASE World Conference on Science and Technology Education

2-6 December 2019  
Pattaya, Thailand



The 6th World Conference on Science and Technology which is organised by ICASE is scheduled for Suan Nong Nooch Garden Pattaya-Thailand from 2-6 December 2019. The theme of the conference is **The Future of Science and Technology Education.**

ICASE World Conferences are meant to further the vision and mission of the ICASE Association. The first World Conference was held in Penang, Malaysia in 2003. This was followed by other conferences in Perth, Australia (2007); Tartu, Estonia (2010); Kuching, Malaysia (2013) and Antalya, Turkey (2016). The International Conference Committee with the unflinching support of ICASE President, Bulent Cavas; the Local Convenor, Janchai Yingprayoon 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 Pattaya-Thailand and do hope that you are able to arrive on 2 December 2019 as recommended.

**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*

## **ICASE World Conference on Science and Technology Education**

### **STRANDS**

**The theme of the ICASE World STE Conference: The Future of Science and Technology Education**

**Strands for the ICASE 2019 World STE Conference:**

Strand 1: Science teachers and STA role in promoting 21 century skills

Strand 2: STEM Education

Strand 3: Teaching and learning resources

Strand 4: Collaboration between formal and non-formal science learning contexts

Strand 5: Curriculum Development, Evaluation and Assessment

Strand 6: Innovation & Entrepreneurship in Science Education

Strand 7: Sustainability and Environmental Education

Strand 8: Information and communication technologies in science education

Strand 9: Career awareness in STEM related fields

Strand 10: Teacher Education & Professional Development

Strand 11: Textbooks standards

Strand 12: Science Education Policy

Strand 13: Cultural, Social and Gender Issues



**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## IMPORTANT DATES

**Conference dates:** 2 – 6 December 2019

Paper submission period: 1 December 2018 – 15 August 2019

Notification of acceptances: 30 August 2019

Deadline for payment of registration fee (early bird): 15 September 2019

<http://www.icaseonline.net/icase2019/>

## WORKSHOPS

**Workshop # 1** Creative Science Workshop for Young Learners

Dee Jean ONG, Malaysia

**Workshop # 2** Lab Safety

Bob Worley, UK

**Workshop #3:** Creative Science Toys Workshop

Janchai Yingprayoon, Thailand

**Workshop #4:** Engineering Workshop

Bulent Cavas, Jack Holbrook

**Workshop #5:** Arduino Workshop

Janchai Yingprayoon

**Workshop #6:** Seismology Workshop

Suan Sunandha Rajabhat Uni

**Workshop #7:** Ecosystem in STE

Suan Sunandha Rajabhat Uni.

**Workshop #8:** Global warming in STE

Suan Sunandha Rajabhat Uni.

**Workshop #9:** The use of Dinosaurs park in science education

Suan Sunandha Rajabhat Uni.

**Workshop #10:** The use of botanical garden in science education

Suan Sunandha Rajabhat Uni.



International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



## ICASE World Conference on Science and Technology Education

The World Conferences 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 timetable discussion sessions for all delegates which lead to the development of a Conference Declaration. The Declaration makes recommendations for world progress in science and technology education for the following three years.

Please check the conference website for information and involvement.

**Conference Programme** (can be accessed at <http://www.icaseonline.net/icase2019/programme/>)

Time	Day 1	Day 2	Day 3	Day 4	Day 5	
09:00 - 10:00	Free Time	Registration	Keynote # 2	Keynote # 2	Workshop Session-II	
10:00 - 10:15	Registration	Opening Ceremony	Introduction to Discussion Groups	Coffee Break (10:00 - 10:15)	Coffee Break (10:30 - 11:00)	
10:30 - 12:00		ICASE Executive Committee Meeting-I (Only for Executive Committee Members)	Keynote # 1	Discussion Groups	Concurrent Session # 3 (10:15 - 11:15)	Concurrent Session # 8 (11:00 - 12:00)
12:00 - 13:30		Free Time	Lunch	Lunch	Concurrent Session # 4 (11:15 - 12:15)	
13:30 - 14:30			Concurrent session # 1	Excursion * Coffee Break	Concurrent Session # 5	Concurrent Session # 9
14:30 - 14:45	Coffee Break		Coffee Break		Coffee Break	
14:45 - 15:45	ICASE General Assembly (It will start 15:30)	Concurrent session # 2	Excursion * Coffee Break		Concurrent Session # 6	Conference Declaration & Closing Ceremony
15:45 - 16:00						
16:00 - 17:00		Workshop Session-I				
17:00 - 18:30						
19:00 - 21:00	Dinner	Dennis Chisman's Oration	Dinner	Concurrent Session # 7 ICASE Executive Committee Meeting-II (Only for Executive Committee Members) 17:00 - 18:00		





International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*

## NEWS FROM UNESCO



International Council of Associations for Science Education

In 1972, ICASE was created by the United Nations Educational, Scientific and Cultural Organization (UNESCO) to extend and improve science education throughout the world. Since that time, ICASE has been included in a network of UNESCO non-governmental organizations (NGOs) representing civil society from around the world. The UNESCO partnership with NGOs constitutes a valuable cooperation network in the service of people for sustainable development, equity, international understanding and peace in UNESCO's fields of competence.

Prof. Dr. Teresa Kennedy, Immediate Past President of ICASE, serves as the official ICASE representative to UNESCO and recently completed a two-year term representing ICASE on UNESCO's NGO Liaison Committee where she worked as a team member of the committee facilitating the organization of UNESCO-sponsored events for all the NGO's associated with UNESCO. These organizations represent diverse content backgrounds, not just science.

The list of NGOs can be viewed on the following link:

<https://en.unesco.org/partnerships/non-governmental-organizations/list>

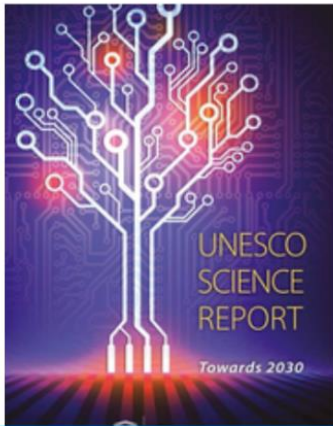
NGO's in Official Partnership with UNESCO range from broadcasting organizations, to human rights organizations, to religious or gender specific organizations, as well as some unique organizations that work internationally. There are only a few NGOs in Official Partnership with UNESCO that work in the area of science.

UNESCO representatives have presented at every past ICASE World conference. Due to limited finances, at times UNESCO representation is pre-recorded or presented via skype at some of the ICASE world conferences, such as our events in Turkey and Estonia; however, UNESCO has sent high level representatives to several of our events (such as in Australia and Malaysia). Currently, UNESCO is in the process of appointing representatives to attend our upcoming conference in Thailand. More information will be shared on this in the very near future!

5th ICASE World STE 2016, Antalya Turkey: The Conference Opening was provided by Dr. Flavia Schlegel, UNESCO Assistant Director-General for Natural Sciences. According to Dr. Schlegel, "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."

**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>

## UNESCO Science Report – Towards 2030



The *UNESCO Science Report* has been mapping science, technology and innovation (STI) governance around the world for two decades now. The report is published every five years, on 10 November, to mark World Science Day for Peace and Development.

The most recent report is 794 pages in length, and is available in [Open Access](#) from the UNESCO website. The director of the publication is Dr. Flavia Schlegel, Assistant Director-General for Natural Sciences. Dr. Schlegel presented the Opening Speech for the 2016 ICASE World Conference on Science and Technology Education that took place in Antalya, Turkey.

The UNESCO Science Report – Toward 2030, reports on perspectives on the following emerging issues:

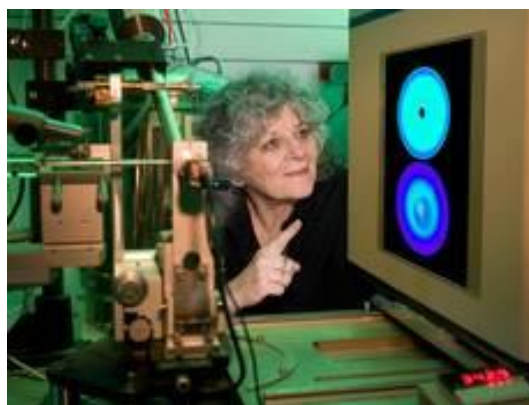
- Universities increasing global players;
- A more developmental approach to science;
- Science will play a key role in realizing Agenda 2030;
- Science for a sustainable and just world: a new framework for global science policy?;
- Local and indigenous knowledge at the science-policy interface; and a
- Global Overview including “A world in search of an effective growth strategy”, Tracking trends in innovation and mobility”, and “Is the gender gap narrowing in science and engineering?”

Also, please check...

- **UNESCO-Japan Prize on Education for Sustainable Development consists of three annual awards of USD 50,000 for each recipient. The deadline for submission of nominations: 30 April 2019.** For more information see [https://en.unesco.org/system/files/esd\\_prize\\_user\\_guide\\_for\\_ngos\\_en.pdf](https://en.unesco.org/system/files/esd_prize_user_guide_for_ngos_en.pdf)
- **UNESCO-Equatorial Guinea International Prize for Research in the life Sciences.** The deadline for submission of nominations: 15 May 2019. For more information see: <https://en.unesco.org/stem/lifesciences-prize>

## L'Oréal-UNESCO Award For Women in Science

Since 1998, the L'Oréal-UNESCO Award For Women in Science (FWIS) has recognized outstanding achievements of more than 102 eminent women scientists. Each year, five Laureates - one per each of the following regions: Africa & the Arab States, Asia-Pacific, Europe, Latin America, and North America – receive this prestigious award in honor of their role and contribution to the advancement of science, in alternating years in Life Science and Physical Sciences.



UNESCO and the L'Oréal Corporate Foundation seek to recognize women researchers who, through the scope of their work, have contributed to overcoming today's global challenges. For the first time, the 2019 edition of the Awards will designate five outstanding scientific researchers in the Physical Sciences, Mathematics and Computer Science. The Awards will be presented during the Ceremony to the five women selected by an international jury for their outstanding contribution to scientific advancement. The picture on the right, from the [UNESCO Women in Science Program website](#), highlights Prof. Ada Yonath, winner of the L'Oréal-UNESCO Women in Science in 2008. Prof. Yonath won the Nobel Prize in Chemistry in 2009. © Micheline Pelletier for L'Oréal Corporate Foundation.

On Thursday, 14 March 2019, the L'Oréal-UNESCO Women in Science Award Ceremony will take place in Paris. For more information about the program see UNESCO's highlight [The World needs Science, Science needs Women](#).



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## The Association of Science Education (ASE)

### 2019 Annual Conference

The Association of Science Education (ASE) holds Europe's largest science education CPD conference. On 9-12 January 2019, the annual ASE conference brought together over 470 speakers and more than 2,000 delegates at the University of Birmingham. View the [ASE 2019 conference program](#) for highlights.

Dr. Sue Tunnicliffe (ICASE European Representative from England), Dr. Teresa Kennedy (ICASE Immediate Past President from the USA) and Dr. Declan Kennedy (ICASE World Headquarters Coordinator from Ireland) worked together to provide information about the benefits of membership at the ICASE for the duration of the conference. A special thank you to Sue for organizing the ICASE booth! Our booth highlighted ICASE projects occurring in Europe and also distributed brochures and shared information about the 2019 ICASE World STE Conference scheduled to occur in Thailand this December.



#### ICASE supported sessions included the following:

The Allan Tunnicliffe Memorial Workshop, led by Dr. Sue Tunnicliffe, Bill Badders (NSTA Past President), Kathleen Nugent and Christine Royce, featured simple activities from around the world involving hands-on science learning using simple, readily available materials and everyday phenomena to discover science ideas and develop understanding and encourage critical thinking and problem-solving and be enjoyable.

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



Interpreting National History Dioramas, presented by Dr. Sue Tunnicliffe, introduced the Anthropocene age and our species' part in its emergence. Through a short, illustrative talk, with data from relevant museum observations, Dr. Tunnicliffe explained how natural history dioramas of the 19th and early 20<sup>th</sup> centuries can contribute to teaching and learning about Earth science and the dependent fauna and flora adapted to it.

**ICASE Partners CASTME, CLEAPSS, and NSTA also had a significant presence at the event.**



CASTME links science, technology, engineering and mathematics (STEM) educators across the Commonwealth. It has a UK-based board of trustees, with regional groups in Africa, Asia, and Europe. In addition, CASTME has advisors based in Australia, India, Mauritius and Antigua and Barbuda. Dr. Sue Tunnicliffe and Jonathan Ling distributed information and explained the links between ICASE and CASTME.



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

CASTME seeks to encourage networking and links between Commonwealth countries through a network of regional meetings, papers at conferences and its website, and promotes teaching and learning of STEM in a social and locally relevant context to ensure that access to learning is universally available.

CLEAPSS supports practical activities in science, D&T and art from early years to GCE A-level or equivalent and includes health and safety as well as advice on laboratories/workshops, equipment and resources. Dr. Bob Worley from CLEAPSS and his team led many hands-on experiments for teachers to actively engage in during the conference. CLEAPSS provides ICASE with guidance on safety in science.



The U.S. National Science Teachers Association (NSTA) had a large booth which provided science texts, resources and kits for teachers to create their own school gardens.

NSTA membership includes science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in and committed to science education. NSTA and ICASE have a long-standing relationship.



**ASE is currently planning their 2020 conference and it is scheduled to take place at Reading University. On Wednesday, 8 January, delegates will gather for International Day, with additional ASE conference activities occurring on 9-11 January. Don't miss this amazing conference! Mark your calendars now!**

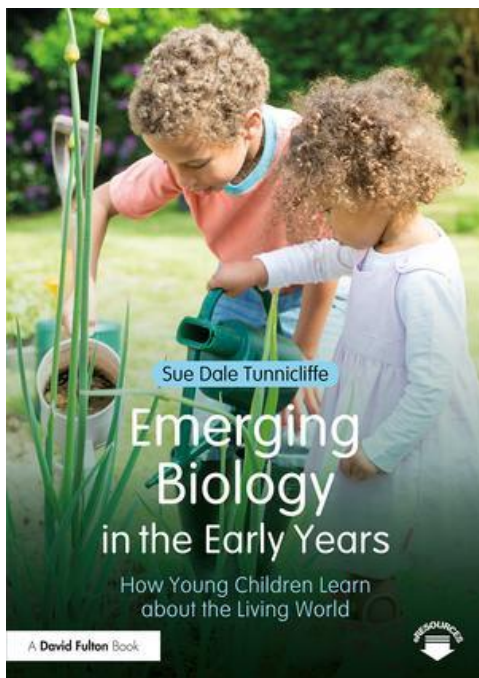
International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>

## New Book

# Emerging Biology in the Early Years

## How Young Children Learn about the Living World, 1st Edition

By Sue Dale Tunncliffe



This inspiring text celebrates young children as "emergent biologists" and explains how their natural inquisitiveness and curiosity can be harnessed to increase early understanding of scientific concepts, and so lay the foundations for future learning about the living world.

Full of practical tips, suggested discussion points and hands-on activities, *Emerging Biology in the Early Years* is a uniquely child-focussed resource. Chapters provide key information on the physical environment, including weather phenomena and soils, plants, animals, and human development, and prioritise the child's perspective to offer activities which are in line with their natural development, thereby provoking discussion, problem-solving, and child-led investigation.

From planting seeds, to classifying rocks, flowers and animals, to understanding growth processes, and recognising anatomical features, the book takes a holistic approach to science which moves beyond the confines of the curriculum and the classroom and shows how biology can be taught in a fun, engaging and inexpensive way both at home and in the early years setting.

Providing a rich collection of ideas, activities, and downloadable sheets, this will be an invaluable resource for early years practitioners and parents looking to develop young children's scientific skills and understanding.

<https://www.routledge.com/Emerging-Biology-in-the-Early-Years-How-Young-Children-Learn-about-the-Tunncliffe/p/book/9780815377115>

## STEMify: A Forum on the Practice of STEM Education in the Philippines, and on International STEM Education Models

### Philippine Science High School - Main Campus, Diliman Quezon City

By Dr. Manabu Sumida

Aiming to strengthen Science, Technology, Engineering, and Mathematics (STEM) education for a healthier and smarter Philippines, the Unilab Foundation in partnership with the Philippine Science School System launched STEMify: A Forum on the Practice of STEM Education in Philippines and International STEM Education Models last November 27, 2018, at the Philippine Science High School (PSHS), Quezon City.

Over 100 STEM educators, industry leaders, and students from all over the Philippines attended the forum, which focused on increasing awareness on current issues and opportunities in developing a framework for high-quality STEM education.



Lilia Habacon, Executive Director of Philippine Science High School, said, “This is part of our commitment to improve STEM education. STEM education facilitates the development of 21st century skills such as critical thinking, creativity, collaboration and communication. These skills are recognized as the requirement for students of today to succeed in work and in life.”

Dr. Rowena Cristina L. Guevara, Undersecretary for Research and Development at the Department of Science and Technology (DOST), delivered the keynote speech. According to Guevara, everyone has a role in STEM education, particularly in encouraging students to love science. She highlighted the importance of cultivating a culture of innovation through research and development, science and technology human resource development, science and technology facilities, and science and technology promotion.



### The state of STEM education in the Philippines

The K to 12 program is considered one of the biggest educational reforms in the country, with many areas for collaboration among the different sectors. In a panel discussion moderated by Dr. Sheryl Lyn C. Monterola, Chair of the UP College of Education’s Science, Health, and Social Studies Cluster, educators from different institutions discussed the challenges they face, and the solutions they need.

The panel included Bernadeth Daran, the Supervising Program Specialist of the Bureau of Curriculum Development at the Department of Education (DepEd); Dr. Zenaida Q. Reyes, Dean of the College of Graduate Studies and Teacher Education Research at Philippine Normal University; Edna Bañaga, Principal of Quezon City Science High School; Dr. Lilibeth D. Sabino, Principal of Mapua Senior High School; and Virginia P. Andres, Special Science Teacher V and former Campus Director at PSHS Main Campus.



The panelists discussed the different ways they are working on teacher training, with Bañaga sharing that the Quezon City government strongly supports these efforts through graduate scholarships for teachers. As for challenges faced by educators, Daran cited that while there is a steady supply of STEM students, facilities for both regular schools and science schools are inadequate, which is a significant problem in areas outside NCR.

“We have very good students, as proven in international research fairs[...] but we cannot push the students—or the teachers—to do the research because we don’t have the facilities. Even if we have just one research center per region, that will help.”

The panel also agreed that partnerships with industry players for immersions would be beneficial to the students. Sabino added, “Another problem is that with senior high school, the students are minors. Most industry partners do not accept minors for internship or OJT or immersion.” Reyes emphasized that this partnership would benefit not only the students, but teachers as well. Meanwhile, Andres shared one of the practices that worked for PSHS: bringing the experts to the school.



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*



**STEM+PH**

### **Global STEM education models**

In a separate presentation, Dr. Mia Dubosarsky, Director for Professional Development of the STEM Education Center in Worcester Polytechnic Institute (WPI) in Boston, Massachusetts, talked about a turning point in their institution's history. "Industry came to us and said, your graduates know a lot, but they do not really know what we need in the industry." This led WPI to make major changes in their curriculum.

First, they realized that the learning environment needed to reflect the workplace, so that students knew what industry workplaces were like. Second, they required students to find real-world problems to solve, and to find solutions through research and immersion in the community. Lastly, the grading system was completely revised. Students were encouraged to try courses that were not related to their field. If the course was not working for them, students could simply stop, and the course would not appear on their school records. These changes led to their Project-Based Learning program, where students not only learned concepts and theories, but also practiced with real-world problems and solutions, alongside industry experts and professionals.

Dr. Manabu Sumida of Ehime University in Japan also shared his insights and practices in providing high quality STEM education.

### **Future Filipino scientists and innovators**

To cap off the Forum, Unilab Foundation and Pinoy Scientists gathered the International Olympiad Winners for the first time, reuniting thirty winners in Earth Science, Biology, Chemistry, Physics, Math, and Informatics from across the Philippines with their mentors.

Miguel Cano, Team Leader of International Earth Science Olympiad, highlighted the importance of building a community for these young leaders. "We [Olympiad teams] are really struggling in terms of getting resources. We are hoping this time it will be sustainable. We are hoping that each Olympiad will be supported." Cano added, "It doesn't matter if you got a bronze, silver, and gold. Because you could be great someday. What [each] Olympiad can teach you is how to love science."

For more information about STEMify, you may contact Sharmaine Tanyag, Project Officer of STEM+ PH, Unilab Foundation. You can also visit [www.unilabfoundation.org](http://www.unilabfoundation.org).

**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>



## Asbestos in School Science Equipment

By Bob Worley

Science teachers use many dangerous materials, such as corrosive, toxic and flammable chemicals, possibly radioactive materials and microorganisms. We also use fume cupboards and deal with equipment such as lasers, heavy weights plus the ever presence of mains electricity and gas supply. Surprisingly, there is one material, which has caused serious long-term illness amongst many teachers, primary and secondary and all subjects and in the UK, and that is asbestos. Mesothelioma is a disease (with no cure) directly attributed to asbestos fibres in the lungs. In 2016, The UK Health and Safety Executive (HSE) found that 51 teachers and assistants have died through this disease. The percentage amongst teachers is higher than would normally be expected, as the disease was normally found in builders, plumbers, decorators and their partners who inhale the fibres at home. Our HSE are very concerned about asbestos related deaths and any “spike” in the occupational health records is thoroughly investigated.

Because of the serious consequences of this industrial disease in the UK, asbestos was totally banned from use in 1999 but it was regularly used in construction until this date and still is present in many schools built up to that date. So, what is causing this? For most teachers, it is just being a school which has fibres coming from the roof, lagging and behind walls. Yes, pinning students’ work onto the walls becomes an issue if it releases fibres.

When I started teaching, asbestos was common material in the lab and design technology areas. It was used in heatproof mats, gauzes, “wool” and the seal for ovens and furnaces. It is still found in the flues (chimneys) for fume cupboards, along with asbestos cement for the surfaces of very old fume cupboards. As early as 1976, the Department for Education, banned asbestos from laboratory equipment and we thought that was that but a chance analysis of the ceramic centres of some gauzes in June 2018 found they contained tremolite asbestos.



The ceramic centre is there to spread the heat from the Bunsen burner over a wider area. In the aftermath of this finding, schools did use gauzes without these centres only to find that, indeed, beakers were cracking (with scalding-hot water) under heat stress within the glass on the base of the beaker.

**Asbestos in School Science Equipment (cont'd)**

# DAYLIGHTING RIVERS

## SCIENCE EDUCATION FOR CIVIC ECOLOGY

The second project meeting of Daylighting Rivers project was held between 21 and 22 November 2018 in Athens, Greece. Dr. Yasemin Ozdem Yilmaz, ICASE secretary, attended the meeting as a representative of ICASE and presented the evaluation tools and methodology with project partners.



DAYLIGHTING RIVERS is a European project funded under the Erasmus+ Programme, which engages secondary school students in hands-on, interdisciplinary investigations of their local environment. The central focus is on studying changes in the urban land cover, and particularly the riverways that flow through the city, with an emphasis on the ways in which urban growth and river management impact local ecosystems. The students undertake activities rooted not only in physical science, by considering environmental impacts on soil, climate and biodiversity, but also in the historical, social and economic aspects of urban rivers.



For more information about the Project, please visit;

<http://www.daylightingrivers.com/>

<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

DAYLIGHTING RIVERS acknowledges that due to accelerated urban development, many rivers have been diverted or covered, in favor of urban infrastructures and new neighborhoods. This has increased the risks of flooding, led to the loss of biodiversity along the streams, increased water pollution and impaired other types of community services connected to the flowing water. The process by which the culverted or covered rivers are uncovered and re-exposed to the environment is known as ‘daylighting’.

DAYLIGHTING RIVERS also refers to ‘daylighting’ in terms of youth consciousness – raising awareness and inspiring global action for sustainability among those who will determine our collective future.



ICASE is one of the eight partners in the project and responsible for the evaluation, ethical and privacy issues. As part of this role, the ICASE will evaluate the effects of the inquiry-based modules on students’ attitudes and career decision-making. In addition, ICASE’s valuable presence in all Europe and all around the world, representing national associations for science education, it will strongly contribute to the dissemination of the project outcomes.



International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## UPCOMING EVENTS

67<sup>th</sup> Annual  
NSTA NATIONAL CONFERENCE ON SCIENCE EDUCATION

# JOIN US!



Don't miss the International Share-a-thon and Poster Session on  
Friday, April 12

<https://www.nsta.org/international/>

ST. LOUIS, MISSOURI  
APRIL 11-14, 2019

Our more than 1,200 sessions will focus on these timely education strands:

**Three-Dimensional Grand Slam**

This strand will focus on implementing three-dimensional learning to increase student understanding

**Phenomena: Gateway to Learning**

This strand will show how teachers can use structures such as the 5E instructional model, Claims-Evidence-Reasoning (CER), Problem-Based Learning, Place-Based Learning, or Project-Based Learning as viable approaches to facilitate student understanding.

**Jazzing Up Science with Cross-Curricular Connections**

This strand will focus on ways that science and other subject areas can be integrated, including the best way to bundle disciplinary core ideas.

**Confluence of Equity and Education**

This strand will focus on our imperative to maintain high expectations and broaden access and opportunities in STEM education to increase the likelihood of student success and to prepare them to compete globally.

The sessions offered in each strand will target by levels: Novice, Intermediate, Advanced

Learn more at [www.nsta.org/stlouis](http://www.nsta.org/stlouis)

#NSTA19



International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## 67th Annual NSTA National Conference on Science Education

St. Louis, Missouri – 11-14 April 2019

**Sign Up Now for *Global Initiatives Enhancing Science Education: An International Share-a-Thon and Poster Session*, taking place on Friday, 12 April 2019**

Join NSTA in St. Louis, Missouri for the NSTA 2019 Global Conversations Event – Global Initiatives Enhancing Science Education: An International Share-a-Thon and Poster Session, happening on 12 April 2019 in conjunction with the National Science Teachers Association's 2019 National Conference on Science Education. NSTA's focus is to engage more American teachers of science in international opportunities with the intent that they will become better teachers in their own classrooms and better impart the global dimensions of science to their students. More information can be found at <http://www.nsta.org/international>.



courtesy of NASA/Bill Ingalls

Following the international conference, the NSTA National Conference will kick off with Retired Astronaut and Retired U.S. Navy Captain, Scott Kelly.

Learn more about the conference at

<http://s6.goeshow.com/nsta/national/2019/overview.cfm>;

advance deadline registration ends 1 March 2019!

In addition, on **Wednesday, 10 April 2019** an **educational field trip** intended primarily for international participants to view science classrooms will occur! Trip participants will visit Maple Richmond Heights Elementary School ([Ticket W-1](#)) or Collegiate School of Medicine and Bioscience ([Ticket W-2](#)) in St. Louis, Missouri.

### Champions for Science Education

The conference will begin with concurrent sessions on Thursday, April 11, at 8:00 AM and end on Sunday, April 14, at 12 Noon. Note: Sean M. Carroll of California Institute of Technology is a special pre-conference speaker on Wednesday evening, April 10, from 6:00 to 8:00 PM.

**Livestream!** New for 2019, NSTA will offer a Livestream on Saturday, April 13, from 8:00 AM to 1:45 PM CT. Click here for more details and to register for this unique event.

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019



# International STEM SUMMIT



photo: [www.pnri.dost.gov.ph](http://www.pnri.dost.gov.ph)

November 21-24, 2019  
Shangri-La's Mactan Resort  
Cebu, Philippines

## Strengthening STEM through Global Crossvergence



### Aims & Objectives

- Provide a platform for Global Crossvergence, where ideas and latest findings from STEM research and practice are shared
- Build a community of global STEM leaders who will work together towards innovative solutions
- Articulate future pathways for shared initiatives from sectoral alliances to advance STEM

### Participants

STEM leaders in the government, industry, and academe. The summit will be capped at 500 participants.

## Summit Details

### Background

Developing a STEM literate citizenry who can synergize their skills with the needs of both local and global communities is important if we are to navigate through a rapidly changing world.

This First International STEM Summit emphasizes the imperative for shared efforts among diverse sectors and provides a platform for cross-sectoral dialogue and collaboration among government, academe, and industry.

### Thematic Areas

The three-day summit for 2019 will feature sessions from these themes:

- **STEM Situationer:** What are the current status, trends, and directions in STEM?
- **STEM Leadership:** What are effective strategies, practices, and policies in supporting STEM?
- **Making STEM Happen:** How can we engage government, education and industry to work together for STEM?

- Current Trends and Directions in STEM
- Creating Access to STEM Education, Research, and Resources
- Enhancing Quality of STEM Education, Research, and Programs
- Teacher Education and STEM
- Diversity in STEM Education
- Inclusive STEM Education
- STEM Curriculum Models and Cross-curriculum Links
- STEM Education in Informal Contexts
- Educational Policy, Leadership and Management for STEM
- Innovation and Entrepreneurship in STEM Education
- Closing the Industry-Academe Gap in STEM
- Effective Policies that Promote and Support a STEM and Innovation Culture

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>





International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019



FIRST INTEGRATED STEM  
LEADERSHIP SUMMIT  
IN ASIA

ORGANIZED BY  
STEM LEADERSHIP ALLIANCE  
PHILIPPINE AFFILIATE

INSPIRED BY  UNILAB  
FOUNDATION

NOVEMBER  
21-24  
2019

SHANGRI-LA MACTAN  
CEBU CITY, PHILIPPINES

STRENGTHENING  
STEM  
THROUGH  
GLOBAL  
CROSSVERGENCE

**SAVE THE DATE**

The International STEM Summit invites submissions for *individual paper sessions* and *workshops*.  
If interested, please visit [StemSummitPH2019@unilabfoundation.org](mailto:StemSummitPH2019@unilabfoundation.org)

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019



## Australasian Science Education Research Association (ASERA) Conference



ASERA is one of the oldest and most highly regarded science education research associations in the world, and is a member of ICASE. Each year ASERA brings together science education researchers and educators to share ideas that change the nature and practices of science education.

2019 will mark the 50th anniversary for the Australasian Science Education (ASERA) Conference. Join us from 2 – 5 July 2019 in the beautiful city of Queenstown, New Zealand and be part of a collegial science education community.

Registration for the conference is now open. I invite you to visit the conference website at <https://www.asera.org.au/2019-conference>.

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

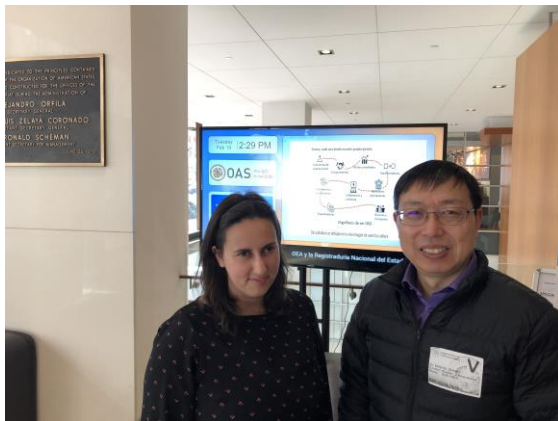
## COLLABORATION WITH ITEN and FUNDING OPPORTUNITY FOR LATIN AMERICA REGION

### What is ITEN?

The Inter-American Teacher Education Network (ITEN) is a project of the Organization of American States (OAS) working with Ministries of Education of OAS member states and teachers to advance the teaching profession in the region.

In the spring of 2019, ITEN will launch Phase 4 of its work. Based on the needs of the OAS member states, ITEN promotes collaborative work to solve problems of policy and practice in relation to teacher education in STEM (science, technology, engineering, and mathematics) at the early childhood and upper secondary levels. Special attention is afforded to promote policies and practices that encourage equity for the STEM education of girls, women, and other underrepresented groups.

Dr. Baohui Zhang visited OAS for discussing the collaboration between ICASE and ITEN. Ms. Rebecca Vieyra from ITEN informed Dr. Zhang also about the funding opportunities.



What does ITEN offer? ITEN offers a networked community of educational leaders in the Americas. It provides an annual cycle of engagement opportunities and funds to participating Ministries of Education. ITEN have small funds available for Cooperation Exchanges (for learning) and Seed Grants (for implementation) limited to partners in the Americas who are participating in Project Teams between May and October. Additionally, ITEN organizes annual seminars and offers teacher fellowships.

To learn more about funding opportunities provided to OAS Member States by ITEN, please visit

<http://www.oas.org/en/iten/>

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## ICASE Journal - Science Education International

The ICASE quarterly journal is now about to enter its 26<sup>th</sup> 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](http://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](mailto:baohui.zhang@snnu.edu.cn).

Please refer to [www.icaseonline.net/seiweb](http://www.icaseonline.net/seiweb) for the full articles.



Science Education International is now indexed in

- AE Global Index Master Journals List 2015  
[http://aeglobalindex.com/?page\\_id=264](http://aeglobalindex.com/?page_id=264)
- European Reference Index for the Humanities and Social Sciences (ERIH Plus)  
<https://dbh.nsd.uib.no/publiseringskanaler/erihplus/periodical/info.action?id=480336>

In addition to 6 international indexes, including ERIC, The Asian Education Index, Education Research Complete Database, Index Copernicus Journals Master List, DOAJ Directory of Open Access Journals, and The Education Research Global Observatory.

**International Council of Associations for Science Education (ICASE)**  
<http://www.icaseonline.net>



International Council of Associations for Science Education

*Supporting and promoting science education internationally*  
**The ICASE Newsletter**

*January/February 2019*



International Council of Associations for Science Education

## ***Science Education International, Official Journal of ICASE***

### **Editor**

Steven Sexton

College of Education, University of Otago, New Zealand

This year is the 30th volume of the Science Education International (SEI) journal (<http://www.icasonline.net/seiweb/>) being published. For nearly three decades, this journal has worked to, provides a means for associations, institutions, centres, foundations, companies, and individuals concerned with science education to share perspectives, concerns, ideas, and information that will foster cooperative efforts to improve science education, and which will serve as a chronicle of the advancement of science education throughout the world.

This year in order to help promote the significance of the contributions we publish in SEI, we are working to obtain DOI's for our articles. This is expected to start in the second issue of this year. Once this process is sorted, we will look at retrospectively sourcing DOIs for our previous issues.

In December of this year, ICASE's World Science and Technology Conference will be held in Pattaya, Thailand. This conference is held once every three years and papers presented will be offered the opportunity to seek publication in 2020 in a World Science and Technology Conference special edition.

Kind regards and in anticipation of receiving your paper,

Steven Sexton

**International Council of Associations for Science Education (ICASE)**  
<http://www.icasonline.net>



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

## ICASE Executive Committee 2017-2020

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.



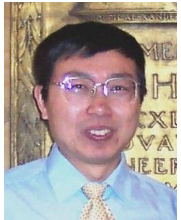
### President (2017-2020)

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



### Immediate Past President (Presidential Term: 2014-2017)

Dr. Teresa Kennedy  
Professor, STEM Education  
University of Texas at Tyler  
Tyler, Texas, USA  
E-mail: [tkennedy45@gmail.com](mailto:tkennedy45@gmail.com)  
*\*Also Membership Chair and Representative to UNESCO*



### President-Elect (2017-2020)

Dr. Baohui Zhang  
Professor at Shaanxi Normal  
University in Xi'an, China  
The National Association for Science  
Education, The Chinese Society  
E-mail: [baohui.zhang@snnu.edu.cn](mailto:baohui.zhang@snnu.edu.cn)



### Treasurer

Ms. Mary Mullaghy  
Associate Professor, Trinity College  
Dublin, Ireland  
E-mail: [mmullaghy@gmail.com](mailto:mmullaghy@gmail.com)



### Secretary

Ms. Yasemin Özdem-Yilmaz  
Assistant Professor, Gaziosmanpasa  
University, Turkey  
E-mail: [yasemin.ozdem@hotmail.com](mailto:yasemin.ozdem@hotmail.com)

### ICASE Newsletter:

<http://www.icaseonline.net/news.html>

### ICASE Website:

<http://www.icaseonline.net/>  
The ICASE Constitution, Strategic Plan  
and World Conference Declarations  
can be viewed at:  
<http://www.icaseonline.net/const.html>

## Regional Representatives (2013-2016)



### Regional Representative for Africa

Mr. David Itamah, Science Teachers  
Association of Nigeria (STAN)  
Director of Education, Chair of the STAN  
Board of Trustees; Chair of the Board of  
Directors of The STAN Place Ltd, the  
official publishers of STAN books. E-mail:



### Regional Representative for Europe

Dr. Sue Dale Tunnicliffe  
Reader of Science Education  
Leadership, Commonwealth Association of  
Science, Technology and Mathematics  
Educators - CASTME, United Kingdom  
E-mail: [lady.tunnicliffe@mac.com](mailto:lady.tunnicliffe@mac.com)



### Regional Representative for Asia

Dr. Manabu Sumida  
Professor, Faculty of Education, Ehime  
University Bunkyo-cho, Matsuyama City,  
Japan, E-mail:  
[sumida.manabu.mm@ehime-u.ac.jp](mailto:sumida.manabu.mm@ehime-u.ac.jp)



### Regional Representative for Latin America

Dr. Cesar Mora, Latin American Science  
Education Research Association (LASERA)  
Centro de Investigación en Ciencia Aplicada y  
Tecnología Avanzada Unidad Legaria del  
Instituto Politécnico Nacional (CICATA-IPN),  
México E-mail:



### Regional Representative for Australia/Pacific

Dr. Leah Moore, Australian Science  
Education Research Association (ASERA)  
University of Canberra, Australia E-mail:



### Regional Representative for North America

Dr. Jim McDonald  
department of Teacher Education and  
Professional Development at Central Michigan  
University  
E-mail:



International Council of Associations for Science Education

Supporting and promoting science education internationally  
The ICASE Newsletter

January/February 2019

### Chairs of Standing Committees



#### International Projects

Dr. Jack Holbrook  
Visiting Professor, Center of Science Education, University of Tartu  
Past President and Newsletter Editor  
Tartu, Estonia  
E-mail: [jack@ut.ee](mailto:jack@ut.ee)



#### Membership

Dr. Teresa Kennedy  
Professor, STEM Education  
University of Texas at Tyler  
Tyler, Texas, USA  
E-mail: [tkennedy45@gmail.com](mailto:tkennedy45@gmail.com)  
*\*Also Membership Chair and Representative to UNESCO*



#### Pre-secondary & Informal Science Education

Dr. Baohui Zhang  
Dean, School of Education  
Shaanxi Normal University,  
Xian, Shaanxi, China  
E-mail: [baohui.zhang@nju.edu.cn](mailto:baohui.zhang@nju.edu.cn)



#### Research and Publications

Dr. Steven Sexton  
Senior Lecturer, Science Education, College of Education  
University of Otago,  
Dunedin, New Zealand  
E-mail: [steven.sexton@otago.ac.nz](mailto:steven.sexton@otago.ac.nz)



#### Safety in Science Education

Dr. Bob Worley  
Chemistry Advisor at CLEAPPS (Semi-retired)  
London, UK  
E-mail: [bob.worley@cleapps.org.uk](mailto:bob.worley@cleapps.org.uk)



#### Science and Technology Education Centres

Dr. Janchai Yingprayoon  
Deputy Director, International College,  
Suan Sunandha Rajabhat University,  
Bangkok, Thailand  
[janchai@loxinfo.co.th](mailto:janchai@loxinfo.co.th)  
*\*ICASE Past President (2004-2007)*



#### Sustainability and Environmental Education

Dr. Elaine Horne  
Curtin University, Perth, Western Australia  
E-mail: [ehorne54@iinet.net.au](mailto:ehorne54@iinet.net.au)



#### University Liaison

Dr. Miiia Rannikmae  
Professor, Center of Science Education  
University of Tartu, Tartu, Estonia  
E-mail: [mia@ut.ee](mailto:mia@ut.ee)



#### Web Communications

Dr. Bulent Cavas  
Professor, Department of Science Education  
Dokuz Eylul University, Izmir, Turkey  
E-mail: [bulentcavas@gmail.com](mailto:bulentcavas@gmail.com)  
*\*Also President/Newsletter Co-editor*



#### World Conferences

Dr. Ben Akpan  
Executive Director of the Science Teachers Association of Nigeria (STAN)  
Abuja, Nigeria  
E-mail: [ben.b.akpan@gmail.com](mailto:ben.b.akpan@gmail.com)



#### World Headquarters Coordinator

Dr. Declan Kennedy  
Senior Lecturer in Science Education  
Department of Education, University College Cork, Ireland  
E-mail: [d.kennedy@ucc.ie](mailto:d.kennedy@ucc.ie)



#### ICASE Journal - Science Education International - In its 26th Year!

Science Education International is the quarterly journal of the International Council of Associations for Science Education (ICASE). ICASE was established in 1973 to extend and improve education in science for all children and youth by assisting member associations throughout the world. [www.icaseonline.net/seiweb](http://www.icaseonline.net/seiweb)

International Council of Associations for Science Education (ICASE)  
<http://www.icaseonline.net>