



International Council of Associations for Science Education

Supporting and promoting science education internationally
The ICASE Newsletter

January/February 2020

Welcome to the ICASE January/February 2020 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

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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

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 Annual Membership Update

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

We are updating our records, please complete the ICASE member information sheet found on our membership page: <https://www.icasonline.net/membership.html>

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.

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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.



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- 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.

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ICASE

World Conference on Science and Technology Education The Pattaya Conference Declaration

2-6 December 2019/ Pattaya, Thailand



In consideration of the 6th ICASE World Conference on Science and Technology Education (STE) which took place in Pattaya, Thailand from 2nd – 6th December, 2019 on the theme Science Education for the Future through various strands including science teachers and Science Teacher Associations' (STA) role in promoting 21st century skills; STE; teaching and learning resources; collaboration between formal and non-formal science learning contexts; curriculum development, evaluation and assessment; and innovation and entrepreneurship in science education; we, the conference participants from 23 countries and regions, as well as delegates from Africa, Asia, Australia-Pacific, Europe, Latin America and North America believe that:

- 21st century science and technology education should place a high premium on the future of our students in view of the rapid changes and globalization, which are becoming the norms in the emerging world;
- Access to high quality education is a fundamental right for all in preparing for responsible global citizenship in a sustainable world, as one of the UNESCO's sustainable development goals;
- Young people are naturally curious about their world and issues that affect them personally, locally, and globally;
- Nurturing confident life-long learners, with skills, attitudes and capacities to thrive in complex societies is a high priority;
- Curricula should allow students to participate in safe, sustainable, and engaging experimental science and technology;
- High-quality teacher preparation and continuous professional learning support are essential in STE;
- STE policy and practices should be informed by evidence-based research findings.

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Thus, we the participants recommend that all personnel, establishments and organisations involved in research, policy development and practice in science and technology education should note the above observations and take demonstrable steps to implement the following at local, national, and international levels:

- Ensuring teachers of science and technology are equipped with both content and pedagogical skills for effective delivery of lessons;
- Providing assistance and advice to agencies with responsibility for curriculum development to guarantee that teachers of science and technology are provided with curricula of the highest international standard specifying all the information needed to interpret these curricula in a clear and comprehensive fashion.
- Laying emphasis on integrated approaches to science and technology teaching as science and technology are becoming more and more inseparable as we move into the future;
- Facilitating appropriate and morally-responsible use of the Information and Communication Technologies (ICT);
- Promoting the use of enquiry as the approach is central to STE;
- Aligning policy decisions with research findings;
- Promoting life-long learning; and
- Paying attention to human rights; health; peace; poverty alleviation; cultural diversity; indigenous knowledge; gender equity; against hate speech and intolerance.
- Giving a key role to assessment to guide and ensure the goals and processes of STE.

Dated in Pattaya, Thailand this 6th day of December, 2019



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ICASE extends special thanks to the UNESCO Jakarta Office



Thank you to **Dr. Shahbaz Khan, Director of the Regional Science Bureau for Asia and the Pacific**, for his active participation in the ICASE 2019 World Science and Technology Conference held in Pattaya, Thailand, on 2-6 December 2019. His keynote address and collaborations with the ICASE community, and assistance with the development of the Conference Declaration were extremely important. Professor Khan would like to share the [UNESCO Jakarta December 2019 newsletter](#). Follow the [UNESCO Jakarta Regional Science Bureau for Asia and the Pacific](#) and subscribe to their newsletter [here](#)!

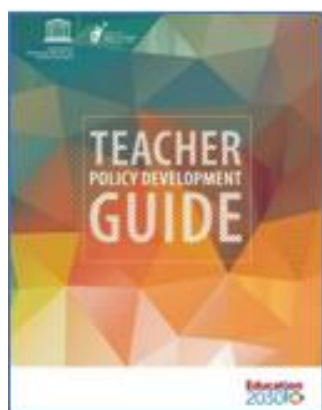
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UNESCO NEWS

Prepared by Dr. Teresa Kennedy, ICASE Representative to UNESCO

From the Secretariat of the International Task Force on Teachers for Education 2020

The Teacher Policy Development Guide



The International Task Force on Teachers for Education 2030 is dedicated to improving the quantity and the quality of teachers worldwide. To reach this goal, the Teacher Task Force developed the **Teacher Policy Development Guide**. This Guide is designed to assist national policy- and decision-makers and education officials tasked with creating national teacher policies. It details the components to be included in national teacher policies - such as teacher education, deployment, rewards and remuneration, working conditions - and describes the policy development process.

The Guide is available for download for free on the [Teacher Task Force's website](#).

The Open University has also designed an online course based on the Guide, including focussed activities and quizzes. Working through an online chapter and successfully passing the chapter quiz results in the user receiving an online digital badge for that chapter. Completing the whole guide and all the quizzes online results in a printable Statement of Participation, which includes all four badges.



Consult UNESCO's Teacher Task Force website [for more information](#).

UNESCO News Cont.

TEACHER TASK FORCE SUPPORTS CALL TO #COMMITTOEDUCATION



Education is the driving force in achieving the **2030 Agenda for Sustainable Development**. Education equips people with the competences to secure decent jobs (SDG 8), the skills to take action to combat climate change (SDG 13), and the values to build more inclusive and peaceful societies (SDG 16). It carries the potential to reduce inequalities, on condition that inclusion and equity stand at the heart of all policies (SDG 16). A complementary publication prepared by the GEM Report calls for countries to ensure their education plans match their commitments.

Titled ***Beyond Commitments: how countries implement SDG 4***, the report encourages countries to focus their work on six key policy areas in order to achieve SDG 4, **two of which recommend clear focus on teacher development**. This is emphasised by the **SDG-Education 2030 Steering Committee** which lists “adequate training and support for teachers” as one of the six areas requiring systematic policy attention.

For more information see the [Teacher Task Force Supports Call to #COMMITTOEDUCATION](#)



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UNESCO News Cont.

From the Division on Science Policy and Capacity Building

Science, Technology and Innovation: Creating a Policy Environment to Enable Knowledge Generation and Application



The social and ethical dimensions of science and technology are central to UNESCO's mandate, as it strives to reach out to the most vulnerable segments of society and to contribute to sustainable development and peace through a human rights-based approach and social change focus in all its fields of competence. UNESCO continues to be a pioneer and leader in international scientific cooperation. Today, the vast majority of scientific knowledge created is done through international collaborations with most scientific research papers authored by multiple multi-national scientists. In promoting international collaboration in science, UNESCO has also a demonstrated advantage through its extensive scientific networks. For more information see the Consultations of the Director-General with Member States titled [Science and Technologies for Knowledge Societies](#).

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UNESCO News Cont.

Division of Science Policy and Capacity Building

Enquiry Based Science Education in Science Centres and Science Museums

Many countries face a shortage of scientists and engineers. These countries are concerned about the effect that this issue has on their development and is compounded for poorer countries by the brain drain of scientists and engineers. The situation is even worse due to the decrease or loss of interest of young people in learning sciences and obtaining scientific careers. Many studies have been conducted to develop our understanding about why students lose interest in learning science. Based on the results of some studies, UNESCO reached the following conclusion on why students might lose interest in science:

- Science teaching is predominantly transmissive. As a student, learning science is simply a matter of being like a sponge, and soaking up this knowledge as it comes from the teacher or from the textbook.
- Science knowledge is dogmatic and correct. There are no shades of grey about science.
- So much of what is taught in science is uninteresting because it is not related to our everyday lives. Science in films and in the media is often exciting, but that is not an aspect of the science we hear about in school. There are science topics that would be interesting, but these are not in our school curriculum.
- Learning science is relatively difficult, for both successful and unsuccessful students. Science is more difficult than a number of the other subjects, and especially compared with the ones that students can choose in the later years of schooling.
- Many non-science careers are more financially rewarding.

To overcome these science education challenges, we have to make changes in the way that students learn science in school. Enquiry Based Science Education (IBSE) approaches can meet several of the major challenges. In IBSE approaches, students are engaged in learning by scientifically oriented questions. Their inquiry is the driving force for learning. Teaching is organised around questions and problems in a highly student-centred inquiry process. Students give priority to evidence, which allows them to develop and evaluate explanations that address scientifically oriented questions. In IBSE, students learn through and about scientific inquiry rather than by teachers presenting scientific content knowledge. IBSE is very promising approach to attract and to retain young people in field of science, technology and engineering. (cont.'d on the next page)

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Taking into consideration the potential benefit of the IBSE approaches, UNESCO is promoting IBSE through several actions, including supporting informal science education. The organization considers that science centres and science museums as good platforms for informal science education and disseminator of scientific knowledge. They are creating exciting environments for a self-directed learning for children, youth and adults. Science centres offer unique opportunities, not only for learning during leisure-time, but as an alternative learning environment to formal educational settings. In essence, learning becomes a voluntary and self-directed action. Science centres and science museums present exhibits in a manner that is accessible to all and undertake activities that are related to contemporary science and the social impact of science and technology. One of the most notable characteristics of new science centres is the opportunity that they offer to interact with the exhibits; to learn from doing. To promote this kind of informal science education, UNESCO assists its Member States in the development of science centres and science museums by organizing capacity building activities, providing technical assistance and supporting international and regional networks of science centres and science museums. For more information, contact: Dr. Yoslan Nur at y.nur@unesco.org.

International Day of Women and Girls in Science



On 11 February, the United Nations, partners worldwide, women and girls will mark the International Day of Women and Girls in Science, celebrating the theme, “Investment in Women and Girls in Science for Inclusive Green Growth.” The Day focuses on the reality that science and gender equality are both vital for the achievement of internationally agreed development goals, including the 2030 Agenda for Sustainable Development. For more information see <https://sdg.iisd.org/events/international-day-of-women-and-girls-in-science/>.

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East-Asian Association for Science Education (EASE)

Autumn School in Japan

By Prof. Baohui Zhang, who served as a mentor at 2019

Prof. Baohui Zhang is Qujiang Scholar Professor at Shaanxi Normal University, Xi'an, China. He is president-elect of ICASE (2017-2020). He is also the contact person of China and an executive committee member of the East-Asian Association for Science Education (EASE) (<http://theease.org>). On Sept. 16~23, 2019, he served as a "Professor" and another Chinese faculty member from Beijing Normal University served as a "coach" led a group of five doctoral students selected from China to Shizuoka University, Japan for EASE Autumn School. This is the 4th event of its kind. The EASE Autumn School featured experts and doctoral students of science education from different regions of East Asia, provided valuable opportunities for discussions, cooperation, and communication for them to generated fruitful results that contributed to better science education, regional friendship and partnership.

Professor Yoshisuke Kumano, professor of Shizuoka University and vice President of EASE, delivered a peech at the opening ceremony on the morning of September 17 (Fig. 1). After that, twenty-six Ph.D. students from different regions, including China Mainland, Taiwan, Hong Kong, Japan, Korea, Thailand and USA, were divided into six groups with each group consisted of four or five students. During the autumn school, each group was supported by two scholars whose work was to guide group discussions. The group discussions were consisted of two parts: dissertations and collaborative proposal. The dissertation part lasted for about 90 minutes per session, focusing on one student's ongoing research (Fig. 2).



Fig. 1 Prof. Kumano delivers open speech



Fig. 2 Dissertation Proposal Presentation

Apart from the group discussion, a total of six lectures given by professors has shared some cutting-edge research progress and achievements in the field of science education (e.g. Fig. 3 & 4). The collaborative proposal part enabled students to develop cross-regional research proposals, which should be based on international concerns (Fig. 5 & 6).

During the autumn school, teachers and students also visited Japan science education museum and Japanese environmental science museum, as well as observing a STEM class.



Fig. 3 Prof. Zhang gives a talk



Fig. 4 A collective Photo



Fig. 5 Collective proposal development



Fig. 6 Collective proposal presentation

With the careful arrangement of the Japanese organizers, the autumn school was also arranged to be connected with 69th Annual conference of the Society of Japan Science Teaching (SJST) (Fig. 6). Both faculty members and the students had another opportunity to present their research at the conference.

The EASE Autumn School has provided valuable opportunities for sharing research experience and developing future research collaboration among Ph.D. students from EASE constituent regions. In the activities, experts and students from different regions of East Asia in the field of science education jointly discussed, shared, cooperated and learned a lot. The autumn school has made a positive contribution in bonding science education researchers in different regions together, strengthening cross-cultural exchanges and cooperation, improving research in science education in East Asia and even worldwide. Such event came with big investment. Besides funding provided partially from EASE and Shizuoka University and the participants, the professors and coaches found travel funds for themselves. During the whole journey, they slept in a big room with 6 people. However, the capacity built in the 26 doctoral students is very rewarding for the faculty members' contribution. The EASE Autumn School has set up a good example for ICASE for its capacity building.



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DAYLIGHTING RIVERS

SCIENCE
EDUCATION
FOR CIVIC
ECOLOGY



FINAL CONFERENCE

DAYLIGHTING RIVERS: INQUIRY BASED LEARNING FOR CIVIC ECOLOGY

Florence (Italy), 14 - 15 May 2020

SCOPE & THEMES

This conference engages secondary school students in hands-on, focusing on land and river use and transformation.

CALL FOR PAPERS

Submit your abstract drawing on the conference themes by March 1st, 2020, 23:00 CET.

PROGRAMME

The conference is a two-day event with plenary or parallel sessions. Participation in the conference is free of charge.



<http://www.daylightingrivers.com/final-conference/>



Co-funded by the
Erasmus+ Programme
of the European Union

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<http://www.icasonline.net>



INTERNATIONAL COMPETITION OPEN!

Youth in Action for Daylighting Rivers

Apply now!

Secondary schools from Erasmus+ Programme eligible countries (NB: Programme and Partner countries only) are invited to apply for the scientific competition “Schools in action for DAYLIGHTING RIVERS!”

“Daylighting Rivers” acknowledges that due to accelerated urban development, many rivers have been diverted or covered, in favour of urban infrastructures and new housing developments. 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 culverted or covered rivers are uncovered and re-exposed to the environment is known as ‘daylighting’.

In our educational context, “daylighting” also means discovering our rivers – knowing where they flow from and to, their characteristics, the threats they face, and the services and benefits they provide. At the same time, ‘daylighting’ refers to raising awareness – in terms of youth consciousness, and inspiring global action for sustainability among those who will determine our collective future.

“Daylighting Rivers” is launching the European Competition for the best “Daylighting Rivers Design Project” presented in the form of a “Daylighting Rivers Location-Based Game”. The competition is addressed to classes of secondary schools (students of age 11-19) and focused on challenging issues related to urban rivers – with a special emphasis (although not exclusively) on those rivers which have been covered over and may be candidates for “daylighting”.

PRE-REQUISITES

Who can participate in the Daylighting Rivers competition?

The competition is open to teams of secondary school students and teachers or other adults who would act as referents for the group. Participation is free of charge. The adult (teacher or other supervisor) will be in charge of registering the group and submitting the competition entry.

HOW TO PARTICIPATE

Please visit : <http://www.daylightingrivers.com/international-competition/>



Be Alerted of the COVID-19 (Coronavirus Disease)-An Informative Report

Feb. 22, 2020

This report is prepared from the data shared by WHO*, NHCC** & CDC*** on their websites (videos/published). Please follow the pages for the updates on the treatment.

Starting from mid-December 2019, there was a cluster of pneumonia cases in Wuhan, China. Investigations found it was caused by a previously unknown virus, now named COVID-19 (Coronavirus disease). The Council of Association of Science Education (ICASE) is issuing this information to our member countries and regions so that protection measures can be taken appropriately when coping with this contagious disease pandemic in China and some other countries/regions. Prevention Is Always Better than Treatment! **Although the authors have tried their best based on different authentic sources of information around them as the persons who are from China, they are not medical professionals. They have provided some official sources of information for your references, furthermore, we recommend that you look for authoritative information from your countries/regions about the COVID-19 virus.**

Corona Viruses

Coronaviruses are a large group of the viruses; they consist of a code of genetic material surrounded by an envelope with protein spikes (Figure 1). This gives the appearance of a crown and crown in Latin called Corona and that is why the virus gets the name corona.

There are different types of coronaviruses that cause respiratory and sometimes gastrointestinal symptoms. Respiratory disease can range from the common cold to pneumonia (Figure 2) and in most people, symptoms tend to be mild. However, some types of coronavirus can cause severe disease.

These include SARS (Severe Acute Respiratory Syndrome), first identified in China in 2003 and MERS (Middle East Respiratory Syndrome) that was first identified in Saudi Arabia in 2012. The COVID-19 (2019 novel coronavirus) was first identified in China. It initially occurred in a group of people with pneumonia who were associated with a seafood and live animal market in the city of Wuhan. The disease has since spread from those who were sick to others including family members and health care staff, since late December 2019. However, the acuteness and treatment were unknown at that time; therefore, people were not warned to take protection measures until late January 2020, and this has led to the outbreak of such contagious disease. Central Government has recently replaced the key officials of Hubei province and Wuhan city to closely monitor and cope up the epidemic situation. Furthermore, the Chinese government also updated the criteria to diagnose the patients of such disease, so on Feb. 13, for the single day, the newly confirmed cases reached its historical high, about 15,000+. There are many cases at present and the disease spreads within China and to several other countries.

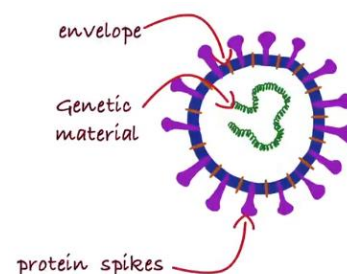


Figure 1: Coronavirus Structure

About more than one hundred countries around the world have taken measures to monitor travelers from China to prevent the spread of the disease.

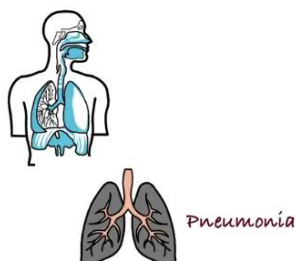


Figure 2: Respiratory system & disease

Transmission: In general, respiratory viruses are usually transmitted through droplets created when an infected person coughs or sneezes or through something that has been contaminated with viruses (figure 5).

Groups most at risk: People who are most vulnerable to the novel coronaviruses are those in close contact with animals such as live animal market workers and those who are caring people infected with the virus, such as family members or health care workers (Figure 6). Senior people are more vulnerable than younger people.

Symptoms: There could be several symptoms ranging from mild to severe. In most cases, there can be fever and respiratory symptoms, such as cough and shortness of breath (Figure 7) and in severe cases, there could be pneumonia, kidney failure, and death.

Diagnosis: The infection can be diagnosed by a laboratory test called PCR (Polymerase Chain Reaction). This test identifies the virus based on its genetic fingerprints. In most cases, doctors perform a CT scan of the lungs, this can be a more reliable and fastest way to confirm infected cases.

Origin of the Virus: It is known that coronaviruses circulate in a range of animals and sometimes these viruses can jump from animals to humans, this is called a spillover (Figure 3) and could be due to a range of factors such as mutations in the virus or increase contact between human and animals. For example, MERS-COV is known to be transmitted (Figure 4) from camels and SARS-COV from cats. The animal reservoir for COVID-19 is not known yet.



Figure 3: Spillover



Figure 4: Transmitted Source



Figure 5: Transmission Possibilities

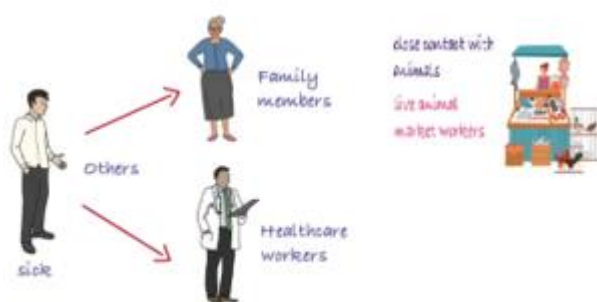


Figure 6: Group at Risk

Treatment: There is currently no standardized medication for the virus, but more and more cases showed effectiveness with a combination of Chinese and western medicine, along with supportive care. The disease caused by COVID-19 is a self-limiting illness, which means after the body's immune system becomes strong enough, the patients could recover eventually; unfortunately, some patients could not wait until that time.

There is currently no vaccine to protect against the virus. Treatments and vaccines are in development. According to statistics from China to date, the mortality rate is about 2%.

Prevention of Transmission of Virus

This new virus has a limited geographical spread currently because of the firm governmental commitment of China and the whole country has taken the most rigorous and systematic measures to prevent the spread of the virus. Several standard hygiene factors have been recommended to protect against infection and further spread.



Figure 7: Symptoms

These include 1) covering your mouth and nose when coughing or sneezing with a tissue paper; in case you do not have a tissue paper, please use your flexed elbow but not your hands, 2) wearing a medical mask, and 3) washing hands with soap and water or medicated hand wash and following stringent procedures, 4) avoiding close contact with those who are unwell. The appropriate use of masks and personal protective equipment especially in health care settings. Washing hands regularly with soap and water or alcohol-based hand rub. Sterilization of public spaces is necessary when cases are found around certain places. Measures should also be made to prevent a fire caused by inappropriate use of medical alcohol (75% by volume). Actions that can be taken to prevent infection from an animal source include avoiding unnecessary unprotected contact with the wild animals, washing hands after contacting animals or animal products and ensuring that animal products are cooked thoroughly before consumed. It is important to stay at home if you feel unwell but if you have a fever, cough and difficulty in breathing, please seek medical care as early as possible. Share your previous travel history with your health care provider (Figure 8). Doctors strongly recommend early diagnosis, early report, early treatment, and early isolation.



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Figure 8: Prevention

Besides watching TV news, reading a newspaper, listening to radio, there are also some useful links we have listed below. There are also several video clips for your information:

Video clip #1: Why we need to cover our mouth and nose to prevent the spread of viruses?

https://www.youtube.com/watch?v=Ded_AxFfJoQ&feature=youtu.be

Video clip #2: Q & A on COVID-19,
<https://www.youtube.com/watch?v=OZcRD9fV7jo#action=share>

Video Clip # 3: How to protect yourself when traveling during the COVID-19 outbreak?

<https://www.youtube.com/watch?v=OKBvReECRrI&feature=youtu.be>

Acknowledgement

This report is prepared by Dr. Sarfraz Aslam (miansarfraz@hotmail.com) and Prof. Zhang Baohui (baohui.zhang@snnu.edu.cn) at Shaanxi Normal University, Xi'an, China. Revision suggestions and questions can be sent to them via emails. Consulted Organizations for the report are: 1) * World Health Organization; 2) **National Health Commission of the People's Republic of China; and 3) ***Chinese Center for Disease Control and Prevention.

Useful Links

- <http://www.nhc.gov.cn/>
- <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- <https://www.elsevier.com/connect/coronavirus-information-center>
- <http://www.chinacdc.cn/en/>
- http://en.nhc.gov.cn/2020-02/05/c_76314.htm
- <https://www.ccl.com/2019-nCoV>

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

News from FENÖDER (Science Teachers' Association in Turkey)

Argumentation in Science Education Workshop

In 9 October 2019, FENÖDER organized a teachers' workshop, entitled Argumentation in Science Education. The workshop was provided by ICASE Secretary Dr. Yasemin ÖZDEM YILMAZ.



Argumentation (a type of scientific discourse) is a social process in which students make claims, and question and criticize existing claims using scientific evidence. Argumentation can be known as the language of scientists. Arguments are a way of explaining what you think and why you think so. In this way, the validity and reliability of scientific claims are questioned. Creating arguments in daily life is one of the important stages of making the right decisions.

Every day, we hear news about climate, carcinogens, foodborne diseases, treatments for chronic health problems, innovations in technology ... How prepared are our children to participate in these conversations in a meaningful way? This is the purpose of scientific literacy: to evaluate the scientific problems and processes we face. Unfortunately, despite the critical role of argumentation in science, we observe that this method is rarely used in science teaching. Therefore, in the "Argumentation in Science Education" workshop, it was aimed to show science teachers some basic methods of starting argumentation in the classroom and creating a classroom culture based on argumentation.

ROTA AEGEAN REGION PROJECT FOR MORE POWERFUL CIVIL SOCIETY-16 September 2019

FENÖDER supported the opening meeting of the "Route for Stronger Civil Society Aegean Region" project, which was carried out by ESIAD in partnership with Denizli Industrialists and Businessmen Association (DESIAD) and in cooperation with Yaşar University.



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SCIENCE ON WHEELS

Making science at school, cool!

Science underpins much of modern life—most human progress springs from this eternal fount. Science is as vast as space, which is why discoveries keep being made. It is an integral part of every living moment of our lives; you see its workings in each and every thing around you.

For instance, night turns to day and dawn breaks bringing a brand new day full of hope, possibilities and new discoveries. There is science behind everything that is included in this poetic description. The new day is the result of the Earth's rotation around the Sun. Simple things or the routine things we do every day: eating, breathing, sleeping, walking, these are all in reality a cumulative result of the varied and complex scientific processes that the human body is capable of carrying out every day.



In fact in Laurus Labs, you discover a research-led company that is trying to improve the quality of life for millions of patients. We are a company that strives to think of the benefits for the many rather than the few, in everything that we do. We also do our bit from time to time to inculcate a scientific temper and an inclination to pursue science among children.



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Many a times, the truth and the magic of science is reduced to dry explanations on the pages of a black and white book. School students blessed with curious minds are thus dissuaded from taking any interest in a subject whose evidence is present in the tiniest of particles. To show how marvellous and interesting science is, we decided to inject some energy and health into how school students experienced science and to make it real for them. To this end, we partnered with Agastya International Foundation to conduct a summer camp on science for children of Laurus employees. The camp was organised at Vishakhapatnam and was conducted from June 2 – 6, 2017. 80 exhibits were transported from Kuppam in Andhra Pradesh to the camp venue at Visakhapatnam. Hundreds of school-children participated in this camp and enjoyed science exhibition. Children of different age-groups enthusiastically put scientific knowledge into practice.



Encouraged by the success and the wide smiles of children, we decided to spread the benefits of this activity to other schoolchildren in the wider society. We conducted a Science Fair for children from July 6—8, 2017 in Visakhapatnam. A whopping 120 teams exhibited their models at the Science Fair proving once again that science is far from being a dry, theoretical subject. To add to the excitement of the event, Bandaru Satyanarayana Murthy, the MLA of the Pendurthi Assembly constituency was invited as the chief guest. V V Ravi Kumar, ED & CFO of Laurus Labs, attended the fair to witness and appreciate the result of these students' scientific knowledge and hard-work at display.

Both of them gave away awards to winners of the Science Fair. While speaking at this occasion, the MLA praised the management of Laurus "for taking up this noble endeavour". He congratulated the Laurus team "for organising such a hugely successful science fair". V V Ravi Kumar said that Laurus—as a responsible corporate citizen and a science-driven company—is committed to creating interest in science. He said that "we need to kindle an interest in science early on".

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This he said, “will not only help students see science in action and understand it better, but will also create a great pool of science talent that becomes an engine of economic growth in the future”. Ms. Sunitha, DGM—HR, led the event and organised everything despite having to work within a very short time-frame with 70 plus employees supporting her as volunteers. Everyone appreciated her efforts in working with a team of volunteers to conduct an event of such massive scale. Gitam University Students who are pursuing advanced graduate education in sciences (eg. M.Sc Chemistry) from Gitam University were also part of this Mega Event. Ms. Sunitha roped in these PG students as volunteers to help organise the event. These students enjoyed organising this and were happy to pick up a few event planning and management skills.



The Mega Science Fair was a huge success and saw a huge turnout of participants as well as visitors. Yet, there were still large numbers of schoolchildren who could not be a part of it because of the sheer number of schools as well as the distances between them. Therefore, to expand our reach and to continue our efforts to make learning science fun, Laurus embarked on a novel initiative. We decided to take a mini science-fair-cum-exhibition to these schoolchildren by setting up a van that doubles up as a laboratory—a do-it-yourself mobile laboratory! Or what we like to call, Science on Wheels!

This mobile laboratory will go from school to school (mainly government schools with children from disadvantaged families) so that students can experience science in action first hand and understand the practical application of what they learn in their science books. It will have some interesting equipment and exhibits which are normally not found in schools’ science laboratories.

A trained instructor will get the school-children to do practical experiments that are safe and also fun. With this (hands-on experiments), we hope to ignite and increase the children’s curiosity of towards science and inculcate an early interest. We believe that the children are going to love this van and it will bring a twinkle in the eyes of the next generation of scientists, maybe even the next Raman or Curie.

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UPCOMING EVENTS

WORLD STEM EDUCATION CONFERENCE

world stem education conference



Istanbul Aydın University (IAU) and The International Council of Associations for Science Education (ICASE) organize the World Science Technology Engineering and Mathematics (STEM) Education Conference in order to bring all stakeholders together (universities, research institutions, civil society organizations, SMEs, public bodies, science centers etc.) to promote STEM education around the world.

The term “STEM education” refers to the teaching and learning associated with the disciplines of science, technology, engineering, and mathematics, and typically includes educational activities across all grade levels and in both formal and informal classroom settings. Educationally speaking, STEM is curriculum-based and incorporates an interdisciplinary approach to educating students in all four specific disciplines: science, technology, engineering and mathematics. Instead of teaching these four disciplines as separate and discrete subjects, STEM integrates these four disciplines into an active and inquiry-based learning paradigm based on socio-scientific issues.

Conference Committee expect to receive contribution from STEM stakeholders in different capacities and wish all participants a rewarding and successful conference.

The theme of the World STEM Education Conference: Interdisciplinary Practices in STEM Education

Deadline for Paper Abstract Submission: May 15, 2020

Deadline of Registration: May 22, 2020

Conference Dates: June 18-20, 2020

Organized by

Istanbul Aydın University (IAU)

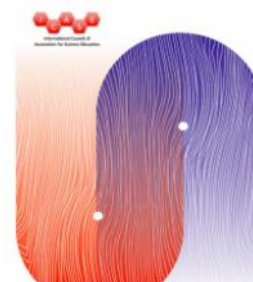


The International Council of
Associations for Science Education
(ICASE)



International Council of Associations for Science Education

Selected papers will be
published in the
SCIENCE EDUCATION
INTERNATIONAL



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Call for Proposals



United Nations
Educational, Scientific and
Cultural Organization



Sustainable
Development
Goals

UNESCO World Conference on Education for Sustainable Development

Education for achieving the Sustainable Development Goals (SDGs)

Berlin Congress Centre, Berlin, 2-4 June 2020

UNESCO invites Education and Sustainable Development stakeholders (i.e. policy makers, civil society actors, academics, practitioners, etc.) to submit proposals for programme contributions for the [UNESCO World Conference on Education for Sustainable Development](#). The conference will take place from 2-4 June 2020 in Berlin, Germany. It is organized in cooperation with and with the generous support of the German Federal Ministry of Education and Research and with the advisory support of the German National Commission to UNESCO.

Please find enclosed the [Concept Note](#) of the Conference.

UNESCO invites interested organizations and individuals to [submit their proposals](#) for up to two different session formats of the conference programme. Please note that UNESCO can only accept applications submitted via the online form before **10 February 2020**.

Proposals

Submission process

The submission process requires interested parties to complete the [online form](#).

All proposals are notified of the final decision regarding proposals by **10 March 2020**.

Eligibility

Eligible applicants include: individuals as well as national, regional and international institutions and organizations working on Education or Sustainable Development.

Please focus on one of the following questions in your proposal:

- How can education respond to specific SDG challenges?
- How can Education for Sustainable Development be included in policymaking, transforming learning environments, building capacity of educators, empowering youth or accelerating action on a local level?

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Available formats:

1. Format: Booths

Description: Booths will be set up throughout the conference venue for one of the afternoons of day 1 or day 2 of the conference. The booths should aim at being interactive, for example by providing a quiz, trying a new technology or game, or engaging participants in a discussion. A booth could for example showcase innovative tools/toolkits, networks, capacity building, latest research and data, educational games, policy guidance, demonstrated good practice, etc.

The conference organisers will provide tables, flipcharts and markers. The hosts of the booths will have to bring display and visual materials as needed.

2. Format: Workshop

Description: Individuals and organisations have the opportunity to host a 60-minute workshop focusing on the practical implementation of ESD and provide concrete guidance for other stakeholders for their future actions (for example showcase replicable actions, pedagogical methodologies, innovative approaches, toolkits or networks).

Workshop proposal may also be considered for side events during the lunch breaks of 2 and 3 June.

Selection criteria for both session formats:

- Clear alignment with the objectives of the Conference and the draft programme of the conference (alignment with the one of the two guiding questions),
- If applicable, diversity of the partners associated with the proposal, including gender and regional diversity and the engagement of youth and young people in the workshop design, implementation and key thematic issues of the proposal;
- The inclusion of innovative participatory techniques and interactivity of the session and use of engaging media;
- The potential to provide practical guidance on replicable action to stakeholders;

Successful proposals may be subject to change or merged with similar proposals.

Applicants will be notified about the status of their proposal by **10 March 2020**.

Further information on facilitation support will be provided to session organisers once proposals have been accepted for inclusion in the official Conference Programme.

Please note UNESCO will be able to accommodate only a very small number of participants from each successful proposal due to limited space. Further details will be communicated individually to the organizers of successful proposals in due course.

For any further questions, please contact the conference secretariat at future.esd@unesco.org.



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www.ioste.org

XIX IOSTE International
Symposium

Transforming Science & Technology Education to Cultivate Participatory Citizens

Date: August 23-28, 2020

Venue: Kyungpook National University, Daegu, Korea

Call for Proposal

Open: December 1, 2019

Deadline: March 11, 2020

Paper Submission Information

Contact: Prof. Myeong-kyeong Shin
Gyeongin National University of Education
e-mail: ioste2020@pusan.ac.kr

www.ioste2020korea.kr

Organized by:

Ewha Womans University, Gyeongin National University of Education,
Kyungpook National University, and Pusan National University

International Organization for Science and Technology Education 

Papers presented at the Symposium and submitted as full papers will be published with ISBN proceedings.

Abstract Submission

Call for paper December 1, 2019

Close submission **March 11, 2020**

Notification for acceptance April 10, 2020

Full Paper Submission

Call for full paper July 15, 2020

Close submission September 15, 2020

Close revision November 15, 2020

Publish Proceedings January 2021

Registration Fee (included IOSTE Membership fee 20€)

Regular: early bird /on site 250€/320€

Student: early bird /on site 220€/270€

End of early bird May 8, 2020

Due for payment of presenters August 1, 2020

**For detail information,
please visit conference webpage**

www.ioste2020korea.kr



Kyungpook National University



Hahoe Folk Village, Andong



Haeinsa Temple, Hapcheon



IOSTE www.ioste.org

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ISTA Annual Conference 2020



The **ISTA Annual Conference 2020** will take place in **Explorium**, on **Saturday 8th February 2020**. The conference will open on Friday 7th February in the Conference Hotel with a keynote speaker - details to be confirmed. The change from the previously advertised data is due to all the flux in the Science Education landscape and the Sustainability of Science Education in Ireland. The theme this year is *From Junior Cycle Science to Leaving Certificate Biology, Chemistry and Physics: Issues and Challenges*.

All conference participants will also have the unique opportunity of trying out some of the activities in the Explorium - a great place for school tours of all ages.

There will also be **spot prizes for attendees** over the weekend, **family passes to Dublin Zoo**, **Folens hamper**, **books** and a mega prize worth €1000 called **FUNDamental Biology**.

Accommodation: **Clayton Hotel, Leopardstown**, Dublin, D18 NR24 (Contact the hotel directly to book a room!)

Registration and more details will be online via a conference website: www.istaconference.com

explorium
National Sport & Science Centre

Tickets available to book on Eventbrite.

roll down on Eventbrite to view all the options.

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NATIONAL CONFERENCE ON SCIENCE EDUCATION

EARLYBIRD REGISTRATION
IS FEBRUARY 21, 2020



OVER 1,200 SESSIONS

NETWORK WITH
MORE THAN 10,000
EDUCATORS

350+ EXHIBITORS
WITH CUTTING-EDGE
RESOURCES

AND MUCH MORE!

Don't miss the Global Initiatives Enhancing Science Education: An
International Share-a-Thon and Poster Session, Friday, April 3
<http://www.nsta.org/international/>

The theme is 20/20 Science: Expanding the Vision. Conference program strands include:

- The Long View: Building a Lifelong Passion for Science
- Learning Science in All Spaces and Places: Near and Far
- Thinking, Acting, and Communicating Like Scientists: A Focus on Disciplinary Literacy
- Aligning the Lenses: Authentic, Three-Dimensional Measurement of Student Learning

For more information, please visit
www.nsta.org/boston

#NSTA20



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In March 2020, the New Zealand Association of Science Educators will hold its biennial Science Conference in Auckland, New Zealand. This event will bring together teachers, university, and industry to support science education in New Zealand. Key note speakers include: Robin Miller, Siouxsie Wiles, Tanya Latty, and Juliet Garrard.



Here is where you can find all the information for the 2020 SciCon conference;

Dates: March 20, 21 & 22

Venu: Unitec (Mt Albert Campus, Auckland)

If you have questions or concerns: feel free to contact ASTA secretary (Auckland Science Teacher Association) who is organizing the 2020 SciCon at astasec16@gmail.com



Colin North
Waiuku College, Waiuku, New Zealand
Chemistry

Currently, Colin is the Treasurer of the New Zealand Association of Science Educators (NZASE).

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Keynotes for the 2020 SciCon:



Robin Millar is Emeritus Professor of Science Education at the University of York. He taught for over 30 years on the science initial teacher education programme and the undergraduate and masters' programmes in education, and supervised over 50 masters and PhD projects in science education. His main research interests are in teaching and learning science (especially physics) at secondary school level, science curriculum design and development, the role of practical work, and the assessment of science learning.

Associate Professor Siouxsie Wiles studied medical microbiology at the University of Edinburgh, UK and then did a PhD in microbiology at the Centre for Ecology and Hydrology in Oxford. Siouxsie also has a keen interest in demystifying science for the public; she is a tweeter, blogger, podcaster. In 2017 she published her first book, 'Antibiotic resistance: the end of modern medicine?', and recently collaborated with her daughter to make a kid's show about microbiology.



Tanya Latty is an entomologist with a special interest in insect behaviour and ecology. In this talk, I will explore what can slime moulds teach us about decision making, problem solving and intelligence in brainless organisms? Do slime moulds hold the key to understanding the evolution of intelligence?

Professor Juliet Gerrard (Prime Minister's Chief Science Advisor) trained at Oxford University, where she completed a First Class Honours degree in Chemistry and a DPhil in Biological Chemistry. Juliet's research covers a broad base and is interdisciplinary, cutting across biochemistry, chemistry, health, agricultural and food science and biomaterial design. It also incorporates a full spectrum of fundamental and applied research.



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2020 International Conference of East-Asian Association for Science Education

EASE 2020 CONFERENCE

Challenges of Emerging Technologies in Science Education

August 26-29, 2020

Kyungpook National University, Daegu, Korea

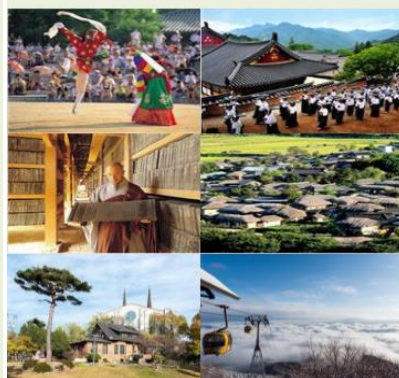


Tentative Program

	26(Wed)	27(Thu)	28(Fri)	29(Sat)
0900-0930		Registration	Registration	
0930-1030		Paper	Paper	
1030-1050	EASE HQ	Break		
1050-1120	meeting	Opening	Break	
1120-1220		Keynote A	Keynote B	
1230-1330		Lunch	Lunch	Field trip
1330-1440	Registration	Poster	Poster	
1450-1550	Workshop A	Paper	Paper	
1550-1610		Break	Break	
1610-1710	Workshop B	Paper	Paper(Keynote C)	
1720-1750			Closing	
1830-2000		Banquet		

For detailed information
www.ease2020.kr

Contact ease2020@knu.ac.kr



Call for proposal
Open: February 1, 2020
Deadline: April 30, 2020

Registration fee (end of early bird: June 30, 2020)
participant: early bird/regular/on-site 180/220/280 (US\$)
student: early bird/regular/on-site 120/150/200 (US\$)

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<http://www.icaseonline.net>



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.

SCIENCE EDUCATION INTERNATIONAL

ICASE Online Journal

Science Education International is now indexed in

- AE Global Index Master Journals List 2015
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.

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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

1. **Special issue of *Science Education International* journal based on papers presented at the World STE2019 6th World Conference on Science and Technology Education, Pattaya, Thailand, 2nd – 6th December, 2019.**

You are invited to submit a paper to the SEI journal based on your presentation at World STE2019 6th World Conference on Science and Technology Education. This special edition of the Journal will be published in June 2020. Please see details and timeframe below.

Full Papers submitted to Science Education International through the Open Journal System by February 15th, 2020 – please provide a note to the Editor that this is a paper based on your ICASE World STE2019 presentation. Website:

<http://www.icaseonline.net/journal/index.php/sei/about/submissions>

Authors will be expected to blind review at least one article by March 15th, 2020

Revisions will be expected to be returned to Editor by April 15th, 2020 with layout fee

Layout versions of articles returned to authors for final checking by May 15th, 2020

Final paper revisions completed and papers approved for publication May 31st, 2020

Volume 31, Issue 2 expected to be published June 1st, 2020.

Kind regards and in anticipation of receiving your paper,

Steven Sexton

2. *Science Education International* (SEI) has applied to Scopus for our journal to be included. This process will take between 6 to 12 months for a decision to be made.
3. It should be noted that APA (7th edition) has come out. Currently, SEI is still using 6th edition as most people are familiar with this version. We will shift to 7th edition for the September issue so people have time to work on changes between 6th and 7th edition.

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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
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E-mail: 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
**Also Representative to UNESCO*



President-Elect (2017-2020)

Dr. Baohui Zhang
Professor at Shaanxi Normal
University in Xi'an, China
The National Association for Science
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Treasurer

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Secretary

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ICASE Newsletter:

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

ICASE Website:

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

**The ICASE Constitution, Strategic Plan
and World Conference Declarations
can be viewed at:**

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

Regional Representatives (2017-2020)



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:
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Regional Representative for Europe

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Regional Representative for Asia

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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),
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**Regional Representative for
Australia/Pacific**

Dr. Leah Moore, Australian Science
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Regional Representative for North America

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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
**ICASE Past President (2008-2011)*



Research and Publications

Dr. Steven Sexton
Senior Lecturer, Science Education, College of Education
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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
**President-Elect (2017-2020)*



Science and Technology Education Centres

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Deputy Director, International College,
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**ICASE Past President (2004-2007)*



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**Also President/Newsletter Co-editor*



University Liaison

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World Headquarters Coordinator

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



World Conferences

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Executive Director of the Science Teachers Association of Nigeria (STAN)
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