

12th Conference of the European Science Education Research Association (ESERA)

**Dublin City University
Ireland**

21st – 25th August 2017

CALL FOR PROPOSALS



UNIVERSITY of LIMERICK
OLLSCOIL LUIMNIGH



Contents

WELCOME MESSAGE.....	3
ORGANISATION OF THE ESERA 2017 CONFERENCE.....	4
GENERAL REGULATIONS AND POLICIES.....	4
CONFERENCE SESSION FORMATS	4
1. Single Oral Presentation.....	5
2. Symposia.....	5
3. Interactive Poster Presentation.....	5
4. ICT Demonstrations and Workshops.....	5
STRANDS.....	6
SUBMISSION OF PROPOSALS	8
SUBMISSION OF A SYMPOSIUM.....	8
ESERA SPECIAL INTEREST GROUPS	8
REVIEW PROCESS	9
CALL FOR PRECONFERENCE WORKSHOPS.....	10
IMPORTANT DATES.....	12
WEBSITES & CONTACTS.....	12

WELCOME MESSAGE

Dear Colleagues,

Welcome to the 12th Conference of the European Science Education Research Association (ESERA). Dublin City University and the University of Limerick are proud to co-host the ESERA Conference and we are looking forward to welcoming you in Ireland. We expect that the conference will enable you to share your research with an international research community and to engage in discussion about the pressing issues in science, technology and environmental education research.

The theme of the conference, “Research, Practice and Collaboration in Science Education” underlines aspects of great relevance in contemporary science education research: the need to reflect on different approaches to enhancing our knowledge of learning processes and the role of context, designed or circumstantial, formal or non-formal, in learning and instruction. Highlighting these themes does not mean underestimating or neglecting other important aspects of science education research and practice.

We hope the conference will be an enjoyable experience for all participants. Dublin City University and the University of Limerick were both established as universities in 1989 and are the youngest of the seven Universities in Ireland. The ESERA conference will be co-hosted by the two largest Irish STEM education research centers, CASTeL at Dublin City University and EPI-STEM at University of Limerick, whom are actively involved in providing research informed pre-service and in-service teacher education and conducting evidence based research on STEM curriculum, pedagogy and learning at all levels.

Ireland is a beautiful island country located on the western coast of Europe and invites delegates from around the globe to enjoy its “Céad Míle Fáilte” — a hundred thousand welcomes. From the haunting beauty of the pure, unspoiled landscapes and the drama of the coastline, to the urban buzz of the country’s dynamic cities mixed with the magic of thousands of years’ worth of culture and history, Ireland is a country that never fails to surprise. Dublin, the host city, was originally founded as a Viking settlement and has gone through many transitions and is presently one of the major cities for industry and sciences, with a rich historical past. Though an historical city, it’s the youth and vibrancy as the capital of Ireland which offers so much to its visiting delegates.

We look forward to meeting all of you in Ireland.

Costas Constantinou
ESERA President

Eilish McLoughlin
ESERA 2017 Conference President

ORGANISATION OF THE ESERA 2017 CONFERENCE

The organisation of the conference is undertaken by Dublin City University and the University of Limerick. The main responsibility for the review process and the scientific programme of the ESERA 2017 conference rests with an international committee of experienced science education researchers. This committee comprises of the members of the ESERA Executive Board and the Strand Chairpersons.

If you have any questions about the ESERA 2017 conference, please contact the ESERA 2017 Secretariat at info@esera2017.org.

GENERAL REGULATIONS AND POLICIES

The International Scientific Committee invites both empirical and theoretical proposals for symposia, paper presentations, interactive posters and ICT workshops. The official language of the conference is English.

Each registered individual can be an active participant in the conference at most 4 times. Each participant can be co-author as many times as they like. However, the following constraints must be kept:

- Each participant can be the presenting author of one oral paper and one symposium paper.
- Each participant can be Coordinator of no more than one symposium and can be discussant of one other symposium as a whole.
- Each participant can be the presenting author of no more than one interactive poster presentation.
- In total, the maximum number of roles cannot exceed 4.

Please note that the co-ordinator of a symposium can also be the presenting author for one oral presentation in the same symposium. He or she cannot be discussant of the same symposium.

CONFERENCE SESSION FORMATS

There are four types of proposal submissions possible for this conference.

- Single Oral Presentation
- Symposium Oral Presentation
- Interactive Poster Presentation
- ICT Demonstrations and Workshops

Each presentation will be classified to one of the 18 strands later described in this document.

1. Single Oral Presentation

This presentation format allows for 15 minutes of individual presentation time followed by a discussion moderated by the session chairperson. Papers will be grouped by strand. Each accepted paper will be scheduled in a session of 90 minutes with four individual presenters.

2. Symposia Oral Presentation

Each symposium will be organized by a Chairperson and will contain four (4) presentations concerning a common topic of interest as well as one symposium discussant. The symposium contributors must be from at least three (3) countries. There will be one chairperson identified for each symposium and this may be one of the presenting authors or a separate individual. The symposium chairperson / organiser is in charge of submitting the symposium title and abstract for the whole symposium, as well as providing the name and contact details of a discussant. S/he will also submit the abstract and submissions of the individual presentations making up the symposium. Each symposium session will be given a 120-minute block of time in the programme: 20 minutes for each presentation, 10 minutes for the discussant and a total of 20 minutes allocated for discussions.

Symposia provide an opportunity to present research on one topic, often from multiple perspectives, providing a coherent set of papers for discussion. The coherence and quality of the symposium will be evaluated first as a whole. Each single presentation within a symposium will also be evaluated individually. If the coherence of the symposium is not evaluated positively, each accepted symposium oral presentation will be presented as a single oral presentation in different paper sessions. We recommend that symposia chairpersons set an early deadline for possible contributors to submit to them and that each individual submission is checked for its own quality and its relevance and coherence to the topic of the symposium prior to formal submission to the ESERA conference.

3. Interactive Poster Presentation

Dedicated poster sessions will be scheduled in the conference programme. Each poster presentation will include a graphic presentation of a research study on visual display of size A0 (0.841m x 1.189m) in "portrait" format. A short oral presentation of 3 minutes for each poster is given to an audience gathered as a group. After the authors' brief presentation, an in-depth discussion between them and the audience follows in the area of the poster displays. The poster sessions offer researchers the chance to present their work in a visual format and offer more opportunities for interaction and discussion. Poster sessions are scheduled for 120 minutes, during which the brief presentations and the poster-centred discussions take place.

4. ICT Demonstrations and Workshops

ICT Demonstrations and Workshops enable presenters to display, explain and familiarize users with an innovative approach, a teaching or research tool, or some other aspect of research or teaching practice. The Workshop may include a brief presentation of completed research, especially case study or evaluation, but the emphasis is on demonstrating an innovation or a tool, not to present the research for criticism. Learning-by-doing occupies most of the session, and any presentations are brief. Adequate time for reflective discussion is important. The audience may offer their viewpoints and share their experiences with other tools or innovations intended for the same purpose. These sessions will be scheduled in computer labs where necessary. ICT demonstrations and Workshops are scheduled for 90 minutes.

CONFERENCE STRANDS

1. Learning Science: Conceptual Understanding

Theories, models, and empirical results on conceptual understanding, conceptual change and development of competences; methodology for investigating students' processes of concept formation and concept use; strategies to promote conceptual development.

2. Learning Science: Cognitive, Affective, and Social Aspects

Cognitive, affective, and social dimensions in learning science. Design of in-school and extra school learning environments and study of teaching/learning processes. Representational languages and knowledge organisation. Collaborative construction of knowledge.

3. Science Teaching Processes

Relations between teaching practices and students' cognitive and affective development, design of teaching interventions. Research based intervention and its role for curriculum planning, instructional paths and learning outcomes. Laboratory-based practice. Video studies in science education.

4. Digital Resources for Science Teaching and Learning

Design, evaluation and characterization of resources and environments for teaching/learning science: ICT and TEL in science education. Online learning environments, simulation and modelling tools, virtual laboratories. Self-regulation, reflection and collaboration in digital learning environments.

5. Teaching-Learning Sequences as Innovations for Science Teaching and Learning

Design of teaching and learning materials. Classroom implementation, refinement and evaluation of teaching sequences. Exchange and adaptation of teaching-learning sequences. Adoption and transformation of teaching materials. Factors that influence teacher ownership.

6. Nature of Science: History, Philosophy and Sociology of Science

The implications of nature of science, its history, philosophy, sociology and epistemology, for science education. The significance of models and modelling for science education as reflected in the particular importance attached to the use of metaphors, analogy, visualization, simulations and animations in science.

7. Discourse and Argumentation in Science Education

Understanding, supporting and promoting use of evidence and argumentation discourse in science education. Scientific practices related to knowledge evaluation and communication. Supporting the development of critical thinking. Discourse analysis. Talking and writing science in the classroom. Meaning making in science classrooms.

8. Scientific Literacy and Socio-scientific Issues

Teaching about scientific literacy, science and citizenship education, science and media education, information literacy, informal reasoning and critical thinking, decision making, debates on socio-scientific issues (SSI), discourse communities, social dimension of science and techno-scientific practices, public engagement in science, schools', students' and teachers' engagement in socio-scientific issues.

9. Environmental, Health and Outdoor Science Education

Ecological and Environmental Education, Education for Sustainable Development, environmental health, health education and health promotion. Lifestyles and attitudes towards health and the environment. Developing and evaluating the impact of programmes and experiences outside classrooms, including those organized by institutions other than schools.

10. Science Curriculum and Educational Policy

Curriculum development. Reform implementation, dissemination and evaluation. International comparison studies such as TIMSS and PISA. Evaluation of schools and institutions. Policy and Practice issues: local, regional, national, or international issues of policy related to science education.

11. Evaluation and Assessment of Student Learning and Development

Development, validation and use of standardized tests, achievement tests, high stakes tests, and instruments for measuring attitudes, interests, beliefs, self-efficacy, science process skills, conceptual understandings, etc.; authentic assessment, formative assessment, summative assessment; approaches to assessment. Monitoring student learning and implications for teaching.

12. Cultural, Social and Gender Issues in Science and Technology Education

Equity and diversity issues: Sociocultural, multicultural, bilingual, racial/ethnic, gender equity studies and science education for the special needs.

13. Pre-service Science Teacher Education

Professional knowledge of teachers, pre-service teacher preparation, instructional methods in pre-service teacher education, programs and policy, field experience, relation of theory with practice, and issues related to pre-service teacher education reform.

14. In-service Science Teacher Education, Continued Professional Development

In-service science teacher education, teachers as lifelong learners; methods, innovation and reform in professional development; evaluation of professional development practices, reflective practice, teachers as researchers, and action research.

15. Early Years Science Education

Emergent science, science pedagogy and learning in the early years, cognitive resources for science learning, early years science and technology curriculum, innovative teaching practices in the early years, children's learning, preschool science, early years teacher education in science.

16. Science in the Primary School

Procedural skills in science, science investigations, science teaching and learning sequences.

17. Science Teaching at the University Level

University pedagogy. Teaching and learning at the university level.

18. Methodological Issues in Science Education Research

Aspects of epistemology, ontology and axiology.

SUBMISSION OF PROPOSALS

Proposals should be submitted through the conference [proposal submission](#) website. Before submitting your proposal, we recommend that you read carefully the guidance on the website about the content of proposals and the submission process.

The proposal submission website is open for submissions 24th October 2016 – 31st January 2017.

If you have any questions or concerns about proposal submission, please contact the ESERA 2017 Secretariat at abstracts@esera2017.org.

SUBMISSION OF A SYMPOSIUM

If you are submitting a symposium, the symposium chair will need to create the symposium on the submission website and then submit each of the papers. Individual authors will not be allowed to submit papers to symposia – this can only be done by the symposium chair.

If you have any questions or concerns about symposium submission, please contact the ESERA 2017 Secretariat at abstracts@esera2017.org.

ESERA SPECIAL INTEREST GROUPS

Special Interest Groups (SIGs) are intended to emerge as self-enabled organizing structures that will function as specialized, thematic groups within the ESERA community. SIGs will eventually be able to undertake an active role in the conference program organisation and review process as well as have the opportunity to receive support from the Association in organizing parallel activities.

- SIG 1: Early Years Science
- SIG 2: Video based research of teaching and learning processes
- SIG 3: Science education in out-of-school contexts
- SIG 4: Science/Environment/Health (SHE)
- SIG 5: Science Identities

If you have any questions or concerns about the SIG groups, please see www.esera.org.

EDITING YOUR ESERA SUBMISSION

You may wish to change your submission. You can do this at any time up to the deadline of **31st January 2017**.

- Log in to the conference [proposal submission](#) website.
- You will see your submission and must click on the file to open it.
- Amending a submission is just the same as the original submission process except that the online form will be automatically filled in with the answers that you gave previously. You don't have to change an answer if you don't want to.
- When you reach the final step and press "Finish" you will be sent an email confirming that your submission has been amended.

REVIEW PROCESS

Depending on the format and type of research report, the proposals will be reviewed by at least two reviewers from countries that are different to those of the authors, according to the following criteria:

EMPIRICAL PAPER

- Relevance to science education research
- Significance for theory, policy and practice
- Theoretical framework, conceptual rationale or pragmatic grounding
- Research method and design (research questions, context, participants, data sources, ethical issues)
- Clarity of results, preliminary findings and conclusions
- Overall quality and scientific originality
- Language

THEORETICAL PAPER

- Relevance to science education research
- Significance for theoretical debate
- Theoretical framework, conceptual rationale or pragmatic grounding
- Use of relevant research literature
- Clarity and robustness of the theoretical argument
- Overall quality and scientific originality
- Language

POSTER (EMPIRICAL)

- Relevance to science education research
- Significance for theory, policy and practice
- Theoretical framework, conceptual rationale or pragmatic grounding
- Research method and design (research questions, context, participants, data sources, ethical issues)
- Preliminary data analysis or anticipated results
- Overall quality and scientific originality
- Language

POSTER (THEORETICAL)

- Relevance to science education research
- Significance for theoretical discourse
- Theoretical framework, conceptual rationale or pragmatic grounding
- Use of relevant research literature
- Clarity and robustness of theoretical argument
- Overall quality and scientific originality
- Language

SYMPOSIUM AS A WHOLE

- Relevance to science education research
- Significance for theory, practice and policy

- Theoretical perspective, conceptual rationale or pragmatic grounding
- Organisation, coherence and internal logic of the whole symposium
- Overall quality and scientific originality

Each paper in a symposium will also be reviewed as an individual paper using the criteria for papers outlined above.

ICT DEMONSTRATION or WORKSHOP

- Relevance to science education research
- Significance for theory, policy and practice
- Theoretical framework, conceptual rationale or pragmatic grounding
- Validation in domain of application (as teaching innovation, tool or research method)
- Quality of workshop format (activity based) or demonstration activities
- Overall quality and scientific originality
- Language

CALL FOR ESERA 2017 PRE-CONFERENCE WORKSHOPS

Aim

The aim of the pre-conference workshops is to enable in-depth interaction for early career researchers, school teachers and other science educators through special sessions. Participants are able to interact with the facilitator and the other participants more deeply than is possible in the traditional ESERA poster, symposia and oral presentation sessions.

Topic

Workshops may focus on, for example, research methodologies, educational development projects, teacher training, and writing educational research papers. Workshops should reflect the ESERA conference theme ***Research, practice and collaboration in science education***.

Target groups

We invite workshop organizers at the ESERA conference 2015 and the ESERA summer school 2016, the ESERA SIG co-ordinators, research methods experts, university teachers and researchers, EU project members, journal editors and companies that work in the field of technology and education to propose a workshop.

Schedule

Workshops are organized on the first day of the ESERA conference (August 21, 2017) from 09:00 to 13:00 before the official opening. Workshops should have 20-40 participants each. Those with fewer than 20 participants may be cancelled and participants will receive a refund for any payments made. Workshops with more than 40 participants may be divided into two or more parallel workshops or the number of participants to the workshop may be limited to 40 persons.

Registration

Participants will register for workshops through the ESERA conference system. On-site registration to workshops will also be offered.

Fee

Participant fee

Participant fee for a workshop is 15 euros. The organizer of the workshop is regarded as a participant. Fee includes workshop room with wireless internet access, projector and lunch. Additional technology, like laptops or fixed network, is not included in the fee.

Publisher/company fee

The publisher/company fee for organizing a workshop is 350 euros. Fee includes workshop room reservation for Monday **21st August 2017** with wireless internet access, projector, a table for product exhibition if needed and one refreshment break. All-inclusive fee for five days package is 1000 euros. Contact info@esera2017.org for detailed information concerning the size and location of the product exhibition table.

Proposals

Deadline

ESERA pre-conference proposals must be submitted to info@esera2017.org by **31st January 2017** (24h00 Central European Time) at the latest.

Format

Each proposal must contain the following information:

1. Title of the workshop
2. Contact information
3. Requested maximum number of participants (absolute maximum of 40 persons, if not also offered as a parallel session)
4. Short description of relevant areas of expertise for each workshop facilitator
5. Workshop abstract (for recruiting participants)
6. Workshop description (*maximum 3 pages*)
 - goal of the workshop
 - schedule
 - activities of all participants
 - expected roles of participants
 - list of literature relevant to the workshop topic and/or format.
 - materials or artefacts needed (note: local working group may redeem additional costs from the organizer for special equipment)

Publisher/company proposals

In addition to what has previously been mentioned, publisher/company organized workshops are organized in parallel with other workshops. A recognized member of the science education research community must co-host the workshop. The workshop must have a scientific orientation and a specialized emphasis related to research in science education that is particularly relevant to early career researchers, school teachers and other science educators.

Review Process

The ESERA conference scientific committee will carry out the review process. Proposals will be evaluated based on the following criteria:

- *Focus*: Degree to which the workshop focuses on issue(s) related to the advancement of science education knowledge and practice and/or methodology in conducting science education research targeted to early career researchers.
- *Relation to Conference Theme*: Degree to which the workshop topic is related to the conference theme “*Research, Practice and Collaboration in Science Education*”.
- *Outcomes*: Degree to which the workshop design will lead to fruitful outcomes for workshop participants related to the advancement of science education knowledge and practice or research methodology particularly for early career researchers, school teachers and other science educators.
- *Literature Base*: Degree to which the workshop content is well grounded in one or more research literatures relevant to science education.
- *Systemic Importance*: Degree to which the workshop content addresses an issue that is of systemic importance to the field of science education.
- *Interest*: Degree to which the workshop topic is of interest to early career science education researchers.
- *Engagement*: Degree to which the workshop delivery will enable all workshop participants to fully engage with the workshop foci.

Decisions of the review process will be published by the end of March 2017.

Questions and inquiries: info@esera2017.org

IMPORTANT DATES

- Proposal submission platform opens **24th October 2016**
 - Deadline for submission of proposals **31st January 2017** (24h00 Central European Time or GMT+1).
- Note that we are NOT able to extend the deadline.

WEBSITES AND CONTACT US:

- **ESERA and ESERA membership** www.esera.org
Email: **ESERA Committee** esera.org@gmail.com
- **ESERA 2017 Conference** www.esera2017.org
Tel: +353 1 400 3626
Email: **General Information** info@esera2017.org
Registration Queries registration@esera2017.org
Proposal Queries abstracts@esera2017.org