

Importance of the International Council of Environmental Engineering Education

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Abstract: Problem statement: Due to the climatic changes and the ecological variations of the biosphere, global natural resources including the atmosphere, hydrosphere, lithosphere, biodiversities, genetic resources and energy, radiation, electric charge and magnetism, must be safeguarded for the benefit of present and future generations through careful planning and management as appropriate. **Approach:** The main points of the International Council of Environmental Engineering Education (ICEEE) are to enhance services to its members, work with educational and research institutions to improve environmental engineering education and technology and promote the undergraduate university degree (B.Sc.), graduate higher degree (M.Sc.) and Ph.D. development, facilitate productive cooperation among industry, academy and government, enhance the participation and success of under-represented groups in the environmental engineering education enterprise, promote the value of the engineering profession, unify the environmental engineering education programs throughout the World Countries and exchange the environmental engineering education professionalism among international institutions. **Results:** Based on the above mentioned concepts, the Obuda University, Rejto Sandor Faculty of Light Industry and Environmental Protection Engineering (Budapest, Hungary), the Technical University of Kosice, Faculty of Mechanical Engineering (Kosice, Slovakia), Uzhhorod National University, Faculty of Chemistry at the (Uzhhorod, Ukraine), Polytechnic Engineering College of Subotica and the UNESCO Chair in Water Resources-Sudan (UNESCO-CWR) agreed to establish an international organization dealing with environmental engineering education management. **Conclusion:** The dynamic development of our professional reforms and combined with effective use of scientific potentials agreed to improve the standards of environmental engineering education. Our institutions are agreed to fund and serve as the premier multidisciplinary council for individuals and organizations committed to promote all aspects of environmental engineering and engineering technology education. This study about ICEEE defines several of the basic components of the environmental engineering and engineering technology professions and the educational processes needed to produce qualified environmental engineers for the future.

Key words: Environmental engineering, engineering education, education enterprise, higher degree, environmental sciences, protection engineering and technology

INTRODUCTION

The relationship between humans and the environment is becoming more complex, giving rise to a new environmental aspects. There has been a remarkable proliferation of inter(multi)disciplinary environmental studies and environmental sciences programs in American and Canadian colleges and universities (Vincent and Focht, 2009; Auer, 2010).

Smith and Biswas (2002) stated that during the past 50 years major changes have occurred in the profession of environmental engineering. Today environmental engineering includes all aspects of the water environment plus air quality management, solid waste management, contaminated site remediation, impact assessment, risk assessment and the more encompassing concept of environmental sustainability.

All of these components of the profession require knowledgeable, creative thinking building on the fundamentals of engineering and applied science, basic sciences, law and communications. As with civil engineering, elements of electrical, mechanical and chemical engineering are incorporated in to the discipline of environmental engineering.

In our extensive experience researching, teaching about and coping with environmental problems we have encountered a variety of different approaches to interdisciplinarity (Karlquist, 1999; Metzger and Zare, 1999; Hansson, 1999; Balsiger, 2004; Lele, 2005; Fiore, 2008). We have found only one approach, however, that offers the full array of concepts and tools needed for integrative crossdisciplinary research, communication and problem solving.

Scientific progress of the environmental engineering education increasingly requires global collaboration. This progress requires access to worldwide scientific knowledge and can be accelerated if it is accelerated. This line of logic is the premise of environmental engineering education development. Today, environmental engineering includes many specialization e.g., water management, air quality, remediation of contaminated areas, civilization, impact and assessment, environmental sustainability concepts, environmental biotechnology. As with civil engineering, electrical, mechanical and chemical engineering elements are incorporated into the discipline of environmental engineering.

In addition to the above mentioned points and regarding to international scientific collaboration and the role of knowledge diffusion in scientific advances, the Obuda University, Rejtő Sandor Faculty of Light Industry and Environmental Protection Engineering also noted a number of other factors as impetuses for an environmental science gateway.

Increasing volumes of environmental protection engineering science information;

In the international community there is a growing sense of the need for reciprocity and sharing of environmental protection engineering science knowledge across national boundaries;

There are well regarded and used environmental protection engineering science information systems and collections which provide the critical foundation and content for a global, decentralized body of environmental protection engineering science knowledge; and the technologies exist for federating searching across vast, dispersed environmental protection engineering science information collections.

Based on the above mentioned concepts, the Obuda University, Rejtő Sandor Faculty of Light Industry and Environmental Protection Engineering (Budapest, Hungary), the Technical University of Košice, Faculty of Mechanical Engineering (Košice, Slovakia) and Uzhhorod National University, Faculty of Chemistry at the (Uzhhorod, Ukraine) agreed to establish an international organization dealing with the management of environmental engineering education. This organization named: International Council of Environmental Engineering Education.

General information: The International Council of Environmental Engineering Education (ICEEE) is defined as the international non-profit independent organization of non-governmental cooperation for environmental engineering education and scientific research in the future, joint efforts of the world youth activities.

The ICEEE exists solely to provide programs and services that are of self-benefit. These include effective management and monitoring the performance of various fields of Environmental Engineering Education (EEE) as well as the technological development of EEE.

The main aim of ICEEE is to improve the education of environmental engineers living in different European countries and all over the world to explore opportunities for operational contact for the nations, in order to encourage the emergence of cooperation, with the appropriate forum.

Such cooperation is identified as an important issue to assess the problems of basic and higher education and scientific research, discuss and submit recommendations on the basis of the conclusions extracted from the scientific meetings.

The ICEEE is public officially in April 2010 as the Council for the Promotion of EEE. The official vision of the ICEEE is serving as the premier multidisciplinary council for individuals and organizations committed to advancing excellence in all aspects of environmental engineering and environmental technology education.

To realize the vision of ICEEE:

- Enhance services to its members
- Work with educational institutions to improve environmental engineering education and promote the under graduate (Basic) university degree (B.Sc.) and graduate higher degree (M.Sc.) and Ph.D. development
- Facilitate productive cooperation among industry, academy and government
- Enhance the participation and success of under-represented groups in the environmental engineering education enterprise
- Promote the value of the engineering profession

Official name of organization is: International Council of Environmental Engineering Education.

Official abbreviation of organization is: ICEEE.

Working language of the ICEEE: is English.

ICEEE's headquarters services to council:

- The headquarters staff will assist council leaders in their efforts to serve the members. Every effort will be made to meet all reasonable requests, within the limits of the budget and staff personnel
- A breakdown of service areas and staff positions can be found on ICEEE's web site at www.iceee.hu. Requests for services involving

mailing lists, labels and other supplies should be addressed to the General Secretary

- The regulations and the by-laws of the ICEEE will be published in a separate supplement

Objectives: For further technological solutions, given the position of ecological areas, food security, rural development and environmental issues in biotechnology and the environmental engineering problems in biosphere. The studies of environmental engineering prove to be difficult without the cooperation of the natural and social sciences; there is no area of research that does not talk about the environmental education from the perspective of its task. The ICEEE is the point of view of the need to change recommendations to the EU government.

So, there are four excellent professional points of ICEEE as the basis of the cooperation:

- Consideration of the following subjects
- Environmental engineering education and scientific research, current issues
- Cooperation between the similar universities and educational institutions which deal with EEE
- Common environmental research projects
- Environmental issues in a timely presentation and discussion
- Recommendations of the EU government
- Exchange of information, professional staff members and students (of different education levels: B.Sc., M.Sc. and Ph.D.) of the cooperative universities and the related technological institutes
- Organize scientific meetings related to the general problems of basic, higher education and scientific research, environmental issues in the countries of member's universities

Purpose: To recognize outstanding contributions in the field of EEE with a particular focus specified by the ICEEE, the awarding of recognition for outstanding international cooperation between the universities has the potential to improve the quality and strengthen the educational processes.

ICEEE is driven by its international cooperation, which has the following strategic goals:

- Implementing annual, high-quality of EEE with international universities, multi-lateral agencies and corporate memberships
- In cooperation with EEE leaders from the world universities, providing leadership and support to the development of the ICEEE

- Increasing the awareness of international EE educators of the global nature of environmental engineering and raising their competence and sensitivity as professionals in a global environment

Membership: All over the world, universities and other educational institutions which deal with EEE are invited to be a member of this council. Membership of the ICEEE is open to all universities which will undertake the commitments arising hereunder ICEEE agreements, in accordance with the schedule established by resolution of the Council and which the members of the ICEEE believe to be able and willing to comply with such commitments.

Location of ICEEE: The Executive Committee will be based in the City of Budapest (the Republic of Hungary).

Organization of ICEEE: The Council is administered by:

1. An Executive Committee composed of the:

- President
- Vice-President
- General Secretary
- Programs leaders
- Professional and Technological Committee leaders
- Awards Committee Chairman
- Membership Chairman
- Newsletter Editor
- Historian
- Webmaster

2. Congress of Presidentship

3. Additional Committees:

- Institutional
- Professional interest and
- Technological sections

Duties of officers: Typical duties of standard positions are described by the Council Operating Manual, which is available on the ICEEE web site.

The president:

- Chairs the Executive Board
- Calls Executive Board meetings
- Creates and distributes agendas for Executive Board meetings
- Has administrative responsibility for the conduct of all functions of the Council in accordance with the

policies and procedures established by the Executive Committee

- A schedule organizes and conducts annual meetings of the Council and all meetings of the Executive Committee
- Appoints all standing committees authorized by the Executive Committee.
- Compiles an annual report of the activities of the Council as requested by the General Secretary of the Council
- Assure that official cash disbursement signatures are on file at Council headquarters and approve of all expenditures of Council funds
- Serves as primary spokesperson for ICEEE

The vice-president:

- Act for the president at meetings and Executive Committee meetings in the event of the president absence
- Succeed the president upon completion of the term of presidency

The general secretary:

- Record the minutes of Executive Committee meetings and the annual meeting and distribute copies of the minutes to appropriate Council officers
- Be responsible for the official records of the Executive Committee and the Council and ensure that the files of the Council are passed along to the successor
- Tabulate, verify and communicate the results of Council elections and other ballots.

The program leader:

- Arrange and coordinate the ICEEE's activities at the Council's annual meeting
- Work with the Executive Committee to develop technical programs in accordance with the ICEEE's objectives
- Coordinate sessions within the time frame set by ICEEE Executive Committee for inviting speakers, notifying ICEEE Executive Committee of logistical needs, as set forth in the Program leader guidelines available from the ICEEE Conferences department
- Work with ICEEE Conferences department staff in the on-site management of sessions

The awards committee chair:

- Lead the Awards Selection Committee in selecting recipients of Council awards in accordance with

the provisions of each award and the policies and procedures established for awards by the Executive Committee of the Council

- Promptly communicate awardees selection and information to ICEEE headquarters
- Notify awardees and nominator of selection and of presentation details
- Plan the presentation ceremony
- Notify nominators whose nominees were not selected
- Keep the Executive Committee informed about the activities and progress of the Awards Committee

The membership chair:

- Work with the ASEE Membership Department to maximize recruitment and retention of members affiliated with the Council
- Develop methods for getting Council's Congress members involved in Council activities.
- Keep the Executive Committee informed about the activities and accomplishments of the Membership Committee

The newsletter editor:

- Collect, evaluate and edit material for periodic newsletters for the Council members

The webmaster:

- Develop and maintain the Council's web site
- Ensure that the ICEEE web site adheres to the policies and standards of the Society as to privacy and all other internet issues

The historian:

- Keep, catalog and transfer to the successor those Council documents that are not normally kept by the Secretary but are records of the activities and achievements of the Council and its members
- Be responsible for filing the appropriate historical documents in the Council's paper or/and electronic archival library.

General important roles of the committees:

- The Executive Committee will establish such standing and organizing committees as it deems necessary to carry out the activities of the Council
- The ICEEE President will appoint one member of the committee to serve as Nominating Committee Chairman

- The Awards Selection Committee consists of the Council President who will appoint one member of the committee to serve as Awards Committee Chairman

Meetings and activities:

- The ICEEE shall hold an annual general meeting each year in addition to any other meetings in that year. The ICEEE Annual Conference is a large and comprehensive professional scientific meeting and exposition. It contributes immeasurably to the fulfillment of ICEEE scope and aims, as well as to the betterment of environmental engineering and engineering technology education. The conference has become recognized as an international forum for the professional exchange of environmental engineering education ideas and techniques
- This scientific meetings of the Council and the Executive Committee will be held by rotation in the alphabetical order by each Member-University
- An annual meeting of the Council will be held regularly meetings during the annual scientific conference of the ICEEE. Those members present at the meeting will constitute a quorum. The meeting will include at least
- Reports from the incumbent officers on the Council's activities for the preceding year, membership and finances
- Presentation of ICEEE awards, unless the ICEEE schedules a separate function for that purpose
- The Executive Committee may establish such other activities as deemed desirable to promote the objectives of the Council
- All meetings of the Council are open to all interested people

Financing:

- The functioning of the ICEEE authorities will be financed from the Community Budget. The Community Budget for each budgetary year will be planned by the Executive Committee subject to consents of the members and will be approved by the Executive Committee of Council. However, all financial contributions from the members will be based on free will or through separated additional agreements
- The budget and cost of all meetings will be covered by the fees of members and the fees of participants of the conferences directed by the invited university

Publications:

- The ICEEE will produce and distribute such publications as the Executive Committee deems appropriate to promote the objectives of the ICEEE
- In accordance with the ICEEE Constitution, papers and discussions presented at scientific meetings of ICEEE therein will become the property of ICEEE and may be published as ICEEE series.
- The ICEEE Conference, through its delegated representative, may grant permission to publish such papers and discussions elsewhere on condition that ICEEE receive proper credit or may waive any property right ICEEE may have in the paper or discussion.
- Papers not accepted for publication will be returned to the authors and will no longer be considered the property of the Council

Amendments:

- Amendments may be made at the annual meeting of the ICEEE, or by e-mail ballot at any time during the year, upon affirmative vote by two-thirds of the members who vote. If e-mail balloting is used, those members who do not have e-mail addresses on their membership records shall be provided the opportunity to cast their vote by mail or fax
- Proposed amendments will be prepared by a committee of ICEEE Congress's members appointed by the ICEEE President. Proposed amendments will be sent to the full membership of the ICEE by letter or in the publications of the Council not less than 30 days before they are to be voted upon. Proposed amendments may also be sent to members by e-mail, providing that they are also sent by mail to those members who do not have an e-mail address on their membership records
- Amendments approved by the division membership will be submitted through the ICEEE President for approval by majority vote of the ICEEE Board of Congress and will take effect only upon such approval

CONCLUSION

The environmental sciences and environmental engineering studies and technology are made up of many university and college programs. This is a major societal response to modern environmental problems, including rapid global change expected to be harmful to the human enterprise. At the same time, most environmental programs are made up of diverse disciplines, each with its own theory, knowledge, standards of problem. Clarifying and securing the

common interest and adapting to changing circumstances are of the highest importance if the ICEEE is to realize its potential solving and conventional role in the policy process of environmental engineering studies and technology.

Societies that are successful should be routinely appraised and the lessons diffused so that other organizations can learn from their experiences.

The future of environmental engineering education should be examined based on several basic assumptions about the global educational place for environmental engineering services.

ICEEE proposes strategies for improvement of environmental engineering of young generations all over the World. Some these strategies could give up healthy and sustainable environment, use of multiple disciplines methods to investigate and address environmental problems in context, develop educational programs and applied professions and experiences that provide students with the technical knowledge, powers of observation, critical thinking skills and management to become effective professionals and leaders for the future.

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