BY-LAWS OF

THE CENTER FOR EXCELLENCE IN ENGINEERING EDUCATION RESEARCH
COLLEGE OF ENGINEERING AND INTEGRATED DESIGN
THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Article I

Name of the Organization

The official name of the organization is Center for Excellence in Engineering Education Research, hereinafter referred to as the Center.

Article II
Center Purpose

The Center provides a holistic approach to improve the quality of educational research in the College of Engineering and Integrated Design (CEID) at the University of Texas at San Antonio. In recent years, the funding agencies such as NSF, NIH, DoD and others have established some criteria for the submission of the research proposals that require discussion on the educational aspects of the proposed project. For instance, all proposals submitted to NSF for funding must address two merit criteria: intellectual merit and broader impacts. The research projects must demonstrate that they integrate research with education to build capacity. In most cases, it is required of the proposer to show expanding efforts to broaden participation from underrepresented group and diverse institutions. Examples of activities that promote research and education efforts include research experience for undergraduates, research experience for science, technology, engineering and math (STEM) teachers, STEM education for sustainability, training of future STEM college professors through integration of research and education, etc. The Center strives to create an environment for faculty and students to participate in projects with emphasis on integration of research and education. Therefore, the purpose of the Center is to:

- Promote the integration of education and research in the CEID.
- Inspire faculty to participate in collaborative and interdisciplinary research projects that provide every student the opportunity to carry out research, at every level of study, challenging them to develop independent critical thinking, so that they are qualified and inspired to make an impact on society.
- Pursue research projects that focus on teaching and learning within different engineering disciplines.

The Center provides an interdisciplinary environment where teaming of faculty from multiple disciplines (e.g., CS, MATH, and Education) pursue grants with a focus on integration of research and education. Graduate and undergraduate students working for the Center faculty on funded projects will receive financial assistance from the Center while at the same time completing their education at UTSA.

Article III
Members of the Center

The Governing Board members of the Center are the Center director, associate director, associate deans of CEID, and affiliate faculty members. The Center director is appointed by the dean of Engineering at UTSA. The Center director reports to the dean of Engineering. In order to diversify the Center activities, the associate director is selected from a program different from the director's discipline. The Center director with the assistance of the Center associate director, shall be in charge of day to day operation of the Center. They shall review and reconcile the Center accounts on monthly basis. The Governing Board will ensure the Center operation and policies are supportive of its mission. The faculty affiliates are typically selected from the group of faculty members who have active grants through the Center. The Governing Board shall pledge the recognition for Center participation by faculty members. To encourage participation, the Center will ensure that faculty receives credit during promotion and tenure decision in particular. New faculty members may be admitted into the Center, as the affiliate faculty member, upon the approval of the Governing Board. The new affiliated faculty should meet at least one of the following criteria:

- Have an active submittal of an engineering or science related proposal;
- Be a principal or co-principal investigator on a grant in a project that promotes integration of research and education;
- Have an active publication record in the field of engineering education and research.

Article IV
Advisory Council Members

The members of Advisory Council consist of individuals from outside entities such as community colleges, universities, individual professionals, industry, governmental and state agencies. The council will provide guidance and consultation in regards to the Center activities. The council shall be organized in order to advise the Center director in the review of on-going and completed activities and in prioritization and selection of new projects for the Center.
Eventually, the Advisory Council enables the Center to have systematic interactions and collaborations with proper entities outside the campus

Article V
Center Activities

The Center activities will be divided into two categories: 1) activities that include students and faculty at UTSA, and 2) activities that involve outside entities such as community colleges, universities, individual professionals, industry, governmental and state agencies.

<u>Activities within the College of Engineering and UTSA</u>
The Center will enable the students and faculty at UTSA, particularly at the College of Engineering to utilize variety of resources to their benefits. The Center will implement new strategies to prepare students for the ever-expanding careers in engineering and academia.
Faculty will have opportunity to enhance their research and teaching skills and classroom assessment that benefits students by having more structured and organized lectures.

While the Center researchers carry out scientific and technical investigations, they will use the results of their research to educate the graduate and undergraduates. This process is in the best interest of UTSA, particularly the CEID, where the critical thinking and innovation is part of its educational process. The Center faculty affiliates participate in periodic brown bag lunches in order to convey their findings to the students and to consider potential candidates for participation in their research laboratories. The faculty members also attend these meetings for student presentations in order to provide feedback and identify students' deficiencies.

Engaging undergraduate students, specifically at risk students, in research under the guidance of a faculty mentor should be one of the Center's efforts. If possible, participating students should receive a stipend, funded by the grant or College, during the academic year. The Center will seek educational grants such as NSF's Research Experience for Undergraduates (REU) program to support those students who participate. Spending the time on a research project, otherwise spent outside of the university, enables students become immersed in a comprehensive and systematic integration of the research anchored by explicit training in research skills that will complement the academic experience, as well as a structured mentoring approach that involves upper-division peers, graduate students and faculty. In addition to facilitating the research opportunities for students, the Center should provide personal and professional development workshops on topics such as applying to graduate school, surviving graduate school, resume development, summer REU and internship opportunities, and presentation skills. Also, the Center should assist students identify and apply to off-campus summer research opportunities. For many students, these research experiences prove to be the first step on a journey that carries them through college and into graduate school.

The Center shall create an environment for faculty professional development and excellence in teaching and learning, which play a key role in student success. The Center shall support faculty interested in understanding how students learn and help improve their teaching. In addition, through both the external and internal funding, the Center shall provide resources for the development of technologically enhanced and enabled instructions, and the improvement of teaching effectiveness of the faculty. Through sponsored workshops and seminars faculty members from all disciplines can share their best teaching practices. New faculty members will be provided with specific support for professional development. Periodically, the Center will host faculty retreats on teaching and learning. Among the particular services provided by the Center for the faculty include: 1) consultations based on classroom observation, 2) support for curriculum development and revision, 3) assistance for faculty involvement in educational research, and 4) workshops on student learning outcomes assessment and accreditation.

<u>Activities with External Educational Entities</u>

The Center recognizes that collaboration between UTSA and external entities, particularly, government, industry and institutes of higher education, is a critical component of efficient innovation systems. The Center shall examine the experience of other similar successful centers to better understand the different types of university-industry, university-government and university – university collaborations. UTSA and San Antonio area Colleges, our major feeders

of engineering students other than local high schools, have already signed articulation agreements with respect to the core courses, specifically, engineering core curriculum. The Center shall pursue similar articulation agreements in regards to the joint projects that focus on the integration of research and education. In addition, the Center shall form alliances with area colleges in order to attract multi-institutional mega educational grants.

The Center shall strive different practices in order to improve collaborations with other universities. Examples of such activities include: Exclusive participation in graduate programs; joint supervision of PhD students; collaboration on joint sponsored projects; sponsoring research and educational consortia and long-term partnerships to conduct cutting edge research with broader impacts.

The successful collaborations between the Center, industry and government entities need to support the missions and motivations of each partner. For the Center, typical motivations to collaborate with other organizations include the improvement of teaching, access to funding, reputation enhancement, and access to empirical data from these organizations. On the other hand, for other organizations, the motivations to collaborate with universities may include gaining access to complementary technological knowledge (including patents and tacit knowledge), tapping into a pool of skilled workers, providing training to existing or future employees, gaining access to the university's facilities and equipment, gaining access to public funding and incentives; firms may also seek to reduce risks by sharing the costs of R&D, and to influence the overall teaching and research agenda of universities.

Article VI
Incentive for Faculty Participants

The affiliated faculty members can benefit from their involvement in the Center in the following ways:

- Provide input in regards to leadership, policies and research direction of the Center
- Gain benefits from overhead returns to the Center in the form of student support, travel support, editorial support, and support for organizing research-educational workshops, seminars and conferences (depending on the availability of funds and level of participation by faculty)
- Receive the "Center Fellow" status based on the level of their success in research and education, and student mentoring. The selection to the level of fellow is usually initiated by nomination by one of the members of the Governing Board (including the director) and approved by the rest of the members.
- Receive recognition in regards with research and teaching activities through the Center's website and other media

Article VII
Meetings

The Governing Board shall meet as needed. The Center director shall be in correspondence with the members of Governing Board regularly. As new concerns or topics arise from these conversations that

require the Governing Board's attention, the Center director shall call for a meeting of Governing Board members. The director shall submit a meeting agenda to the members before the meeting time. If there is an agenda item that requires approval of the members or voting, at least 51% of the Governing Board members must be present in the meeting.

The Center director shall also correspond with the members of the Advisory Council regularly. The director should convey the news about the Center activities to the Council members. The Center director shall be in charge of organizing an annual meeting between the Advisory Council and the Governing Board members. The purpose of these annual meetings shall be for:

- Introduction of new members
- Review of the Center activities
- Creation of ad hoc committees for different tasks (as needed)
- Receiving feedback and consultation from the Advisory Council members
- Prioritizing the Center activities in the upcoming year based on the advice from the Council members.

The Center Director shall meet with the Dean of CEID at least once per semester (or as needed). The purpose of these meetings shall be for:

- Reporting the Center activities in order to make sure that activities support the college mission.
- Receiving feedback and consultation
- Discussing financial expenditures and necessities

Article VIII
Implementation and Amendments

Proposals to change or amend these by-laws must be submitted to the Governing Board members in writing at least two calendar weeks before a meeting in which they are to be considered. Approval by at least 51% of the voting members on a ballot is required before any proposal becomes effective.