



–CALL FOR UNDERGRADUATE RESEARCH PROJECT PROPOSALS–

Center of Excellence for Energy, Education, Research, and Entrepreneurship Undergraduate Research Opportunity Projects (UROP)

Deadline: November 30, 2019

The Massachusetts Institute of Technology (MIT) established the **Center of Excellence for Energy**, Research, Education and Entrepreneurship (COE) at Ain Shams University in Egypt in collaboration with partners at Mansoura University, Aswan University, the Ministry of Higher Education and Scientific Research (MOHESR), and USAID. MIT's mission is to bring knowledge to bear on the world's greatest challenges while educating students in engineering, science and the social sciences to best serve the world in the 21st century. Working collaboratively with public and private sector partners in Egypt to build the capacity of Egyptian universities to **1) produce high quality applied research in energy, 2) deliver world-class training in engineering, and 3) create a dynamic energy innovation ecosystem focused on meeting local challenges and contributing to economic growth** is well aligned with this mission. With over six decades of experience strengthening the education, research and innovation efforts at universities around the world, MIT is well positioned to lead this effort.

Under the technical leadership of MIT and in deep collaboration with our Egyptian partners, the COE is organized around four key elements: 1) new paradigms in **engineering education**; 2) market-driven **applied research projects**; 3) catalyzation of local and global **industry-university-government networks**; and 4) a sustainable foundation built on **good governance and synergistic policy** to ensure maximum impact on the Egyptian economy. The American model of a research university, exemplified by MIT, is grounded in integrating research and education while working closely with industry and government; these will be the guiding principles, not a blueprint, for this effort. At the strategic level, the COE's primary objectives are to build local capacity for the organization and pursuit of a number of market- driven applied research projects that address Egypt's needs in the energy sector, while simultaneously promoting an inclusive educational culture that focuses on solving local and global problems. MIT will provide training and mentorship to build the physical and policy infrastructure required to guide an effective pipeline— from conception to results, commercialization to scaling— and to engage the diverse set of organizations required to achieve broad impact.

The Center of Excellence for Energy is issuing this call for Undergraduate Research Proposals from undergraduate students at each of the three COE Energy Partner Universities: Ain Shams, Aswan and Mansoura. Through this program, undergraduate students at each university partner will be funded to conduct research in the lab and under the tutelage of an Egyptian partner University faculty member as a part of their degree program. As agreed to in the Curriculum and Instruction Committee on October 1, 2019, each partner university will disseminate this call for undergraduate research opportunity projects (UROP) to students who wish to apply to receive funding support through the Center of Excellence for Energy as per the criteria and guidelines outlined in this call. The Curriculum and Instruction Committee will oversee the final selection of the undergraduate projects, and funding will be provided by the Center of Excellence for Energy.

This UROP Call for Proposals is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this call for proposals are the sole responsibility of the Center of Excellence for Energy and do not necessarily reflect the views of USAID or the United States Government.

The USAID Funded Center of Excellence for Energy implemented by the Massachusetts Institute of Technology (MIT) promotes and supports equal opportunities among its beneficiaries. The project strongly encourages the participation of Women, Persons with Disabilities, and applicants with socio-economic disadvantages who meet the academic/professional eligibility criteria and stand out in the selection process for participation.

General Guidelines

Undergraduate Research Opportunities Program: The Center of Excellence for Energy is providing 200 Funding opportunities for the promotion of undergraduate research at partner universities. Each **group** of students will receive \$1000 for funding per graduation project.

The UROPs are divided proportionally according to students' density in each partner university as follows (60% ASU, 30% Mansoura and 10% Aswan).

- ASU: Total of 120 UROPs (30 each year)
- Mansoura: Total of 60 UROPs (15 each year)
- Aswan: Total of 20 UROPs (5 each year)

The Center of Excellence for Energy Curriculum and Instruction (C&I) Committee confirmed the following criteria for selection of the UROPs as follow:

- Offered to graduating students registered in a Graduation Project.
- Must be Energy-related and there must be a clear description of the relation, endorsed by the Supervising faculty.
- Project must address a local problem/challenge and provide a potential solution.
- Each group must provide a brief project overview - Provide background including overall project aim, context and scope.
- Each group to provide a statement - Briefly state why the students in the group are interested in this UROP and explain what you hope to learn from it.
- Each opportunity is offered to a team (at least 3 students).
- Multi-disciplinary projects are preferred, but not mandatory.
- Clear budget should be formulated and presented with the project (template is provided)
- Support letter by Faculty supervisors is required.
- All requested expenditures must be approved by the Faculty Supervisor.

The following is the evaluation scoring guidelines:

- I. **30 Points:**
 - 20: Project approach + impact on society
 - 10 : Demonstrated commercialization potential or a business model.
- II. **70 Points: Methodology**
 - Clear and feasible methodology (20)
 - Innovative approach – (eventually multidisciplinary) (20)
 - Practical realization (20)
 - Using advanced analysis and / or characterization tools (10)

The COE-Energy project is responsible for the procurement and funding of all expenses related to the awarded UROP fund.