



UNIVERSITY OF
MARYLAND

A. JAMES CLARK SCHOOL OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING
CENTER FOR ENVIRONMENTAL ENERGY ENGINEERING

4164 Glenn L. Martin Hall
College Park, Maryland 20742
301.405.5439 TEL 301.405.2025 FAX
<http://www.enme.umd.edu/ceee>

Announcement Date: May 1, 2019

Proposal Due Date: July 1, 2019

Engie Chuck Edwards Memorial Fellowship Webpage: <http://www.ceee.umd.edu/education/gdf-fellowship>

Request for Applications for the Engie Chuck Edwards Memorial Fellowship

Since 2002, Engie (formerly GDF-Suez) established through the University of Maryland College Park Foundation, a fund to support energy conversion education at the A. James Clark School of Engineering. In 2014 the fellowship was renamed in honor of the memory of Mr. Chuck Edwards, the late general manager at GDF Suez Energy North America.

The fellowship is implemented by the Center for Environmental Energy Engineering (CEEE). This announcement serves as a request for proposals from University of Maryland engineering graduate student(s) and their faculty advisor(s) to seek funding to pursue new research in the area of energy systems and devices to enable quantifiable energy savings and/or carbon dioxide emission reduction when compared to the performance of existing systems and devices. Examples of such technologies include, but are not limited to waste heat utilization, carbon dioxide sequestration, absorption cooling, energy system optimization products and other technologies with a quantifiable potential to reduce energy consumption and/or carbon dioxide emissions.

Engineering graduate students are encouraged to submit proposals for a \$25,000 one-year full-time graduate fellowship applied to the student's annual stipend. Two fellowships will be awarded. The award will be granted starting the fall 2018 semester and go through the end of the 2019 spring semester.

The proposed research must not fall exclusively under the objectives of a currently funded research project, although supplemental research efforts to existing projects will be considered. A prerequisite to receiving this fellowship is that the graduate student will receive the rest of their regular support during the academic year and summer from their advisor/department. The assistantship can have no additional work requirement during the summer months to allow the Suez Fellow time to focus full-time on her/his proposed research effort during that time period. It is expected that each fellow will present his/her research results at a technical conference, and/or submit a scholarly publication. Fellows will be required to submit an end of the year progress report to the Suez director. The intent of the fellowship is to initiate new research directions, so there will be a new competition each year, subject to availability of funds.

Submission instructions:

Proposal Format: The proposal narrative must be no more than a three-page description of the student's research and must identify how it addresses some aspect of a forward looking solution in their area of research. The proposal must include the following, all within the three-page limit:

- One-paragraph abstract summarizing the research plan,
- Brief description of the problem and relevant background,
- Proposed plan of research,
- Paragraph describing plans to present the results and efforts to further fund the research.
- Advising faculty member signed reference letter (PDF), which provides an assessment of the student and his/her applicability for the fellowship.

Bios of the student and the advising faculty member, each not to exceed two pages in length, should be appended to the proposal narrative.

***Please note:** Any single advisor is allowed to recommend **only one** student for the award each year.*

Proposals (to include the advisor letter) must be submitted no later than 4 p.m. on **July 1, 2019** at <http://www.ceee.umd.edu/education/gdf-fellowship/proposal>.

Past Winners

- 2018** **Joe Baker** (Mechanical Engineering), *Electrochemical Ammonium Compression*
- 2017** **David Catalini** (Mechanical Engineering), *Environmentally safe air conditioning: An elastocaloric heat pump*
- 2016** **Ye Tao** (Chemical Engineering), *Electrochemical CO₂ separation, compression, and reduction*
- 2015** **Mohamed Beshr** (Mechanical Engineering), *Unified Vapor Compression System Steady State Solver with Design Feedback Capability*
- 2014** **Suxin Qian** (Mechanical Engineering), *Performance Comparison of the Alternative Solid-State Cooling Technologies to the Vapor Compression Cooling*
- 2013** **Sahil Popli** (Mechanical Engineering), *Enhanced performance of compact heat exchangers using evaporative cooling*
- Tao Deng** (Chemical and Biomolecular Engineering), *Interface Engineering Enable High-Rate Solid-State Sodium Metal Batteries*
- Aaron Leininger** (Civil and Environmental Engineering), *Integration of microbial electrolysis cells into wastewater treatment for energy recovery*
- Daniel Dalgo** (Mechanical Engineering), *Supervisory control and data acquisition for the UMD campus (SCADA-UMD)*
- Radia Eldeeb** (Mechanical Engineering), *Optimization of Plate Heat Exchanger with Novel Plate Design*
- Zhi Zhang** (Mechanical Engineering), *Novel Microemulsion-based Absorption Chillers Driven by Waste Heat*
- Long Huang** (Mechanical Engineering), *Development of a robust microchannel heat exchanger simulation tool*

- Bracha Mandel** (Mechanical Engineering), *Desorber performance in a waste heat powered hybrid absorption vapor-compression system*
- 2012
- Kyle Gluesenkamp** (Mechanical Engineering), *Realistic transient load profiles to evaluate performance and evaluate TRNSYS model*
- 2011
- Magnus Eisele** (Mechanical Engineering), *Development of an Experimental Simulation of the Operating Conditions of Transport Air-Conditioning*
- Jiazhen Ling** (Mechanical Engineering), *Seperate Sensible and Latent Cooling*
- 2010
- Kyle Gluesenkamp** (Mechanical Engineering), *Installation and Performance Testing of a Residential CHP System*
- 2009
- Varun Singh** (Mechanical Engineering), *Development of design software for air-to-refrigerant heat exchangers*
- Xudong Wang** (Mechanical Engineering), *Two-stage heat pump systems for cold climates*
- 2008
- Varun Singh** (Mechanical Engineering), *Implementation of fully arbitrary tube-sheets for novel coil designs*