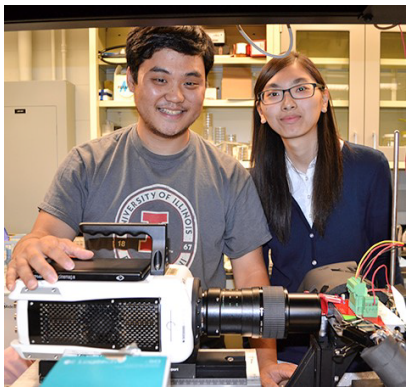
OVERVIEW

The Center for Power Optimization of Electro-Thermal Systems (POETS) offers a 10-week summer research program that provides undergraduate students with an opportunity to explore careers in research. Students gain an experience that will help strengthen their knowledge, skills and understanding of research methodologies as well as prepare for graduate school. The POETS REU program places students at one of its four universities: Howard University, Stanford University, University of Arkansas, and University of Illinois. While at a POETS institution, REU students work on a POETS research project under the guidance and mentorship of a faculty member and graduate student or post-doctoral mentor. In addition to research, students will participate in bi-weekly research seminars and professional development workshops, engage in a variety of social and professional events and communicate their research progress at multiple venues including POETS' annual meeting in September. The goal of POETS REU program is to provide a unique summer experience that encourages students to purse graduate studies in engineering.

ELIGIBILITY

Undergraduates majoring in science, technology, engineering or mathematics (STEM) disciplines are welcome to apply to the POETS REU program. Students should have an average GPA of 3.0/4.0 or higher. U.S. citizenship or permanent residency is required. Students from underrepresented minority groups, women or veterans are strongly encouraged to apply.



PROGRAM FEATURES

The POETS REU program offers a wide variety of unique features to maximize students' summer experience:

-Hands-on research: REU research mentors are carefully coached on designing reasonable, interdisciplinary, POETS projects that allow students to play an active role in their summer projects.

-Faculty/peer mentoring: Each REU students is paired with at least one faculty research advisor and a graduate student or post-doctoral mentor.

-Weekly research talks and seminars: Students will engage in seminars that will expand their knowledge of POETS research, PhD career paths and scientific communication.

-Networking Opportunities: Students will not only participate in social and professional networking opportunities with other REU students at their POETS institutions, but they will also be able to interact with current and previous POETS REU students through webinars and the POETS annual meeting.

-Competitive Stipends: REU students will receive a $5000 stipend throughout the summer.

-Travel cost covered: Airfare and ground transportation costs will be covered by POETS to ensure students can get to and from their POETS internship.

-On-campus housing: Students will have the option of being housed in campus dormitories for free. On-campus housing is highly encouraged so REU students can get to know other REU students across campus.

-Meal plan: Students' meals will be covered during the course of the REU program through on-campus meal plans.

-POETS Annual Meeting: POETS organizes an annual meeting where all POETS faculty, post-docs, and students meet to share their research progress. REU students will be flown to the conference, which rotates locations every year, to present their summer research, participate in professional development workshops and network with other POETS members. These meetings also include participation of industry members and government officials.

-External conference allowance: Students will receive a $500 conference allowance to present their summer REU research.

Applications are being accepted on a rolling basis

Final Application Deadline:
March 1st, 2018

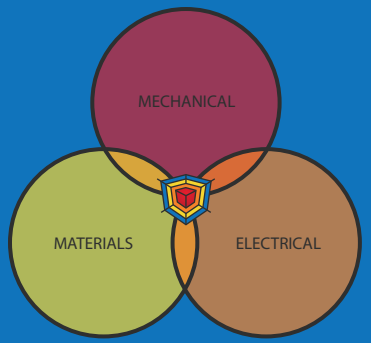
LEARN MORE
POETS-ERC.ORG/REU

POETS RESEARCH VISION AND IMPACT

For any mobile system, size and weight are primary considerations. Increasing performance of modern mobile systems frequently demands substantial increases in power density, but electrical power density is subject to thermal limits. Power density limits exist because of the fundamental mismatch between the ability of a system to generate heat in local electronics, and the capacity to dissipate that heat in a given local volume. An engineered systems approach can break these limits and intertwine electrical and thermal power flows at small scales.

The focus of the NSF Engineering Research Center on Power Optimization of Electro-Thermal Systems (POETS) is overcoming the challenge of increasing power density in mobile systems as they become ubiquitous in fulfilling societal needs.

The vision of POETS is to be the pre-eminent research and education organization driving the integrated, optimized, concurrent movement of thermal and electrical power in tightly constrained environments.



A SYSTEMS APPROACH

POETS ambitious, innovative approach involves integrating traditionally separate research efforts in mechanical, electrical and materials engineering.

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Stanford University

1867
HOWARD UNIVERSITY

UNIVERSITY OF ARKANSAS

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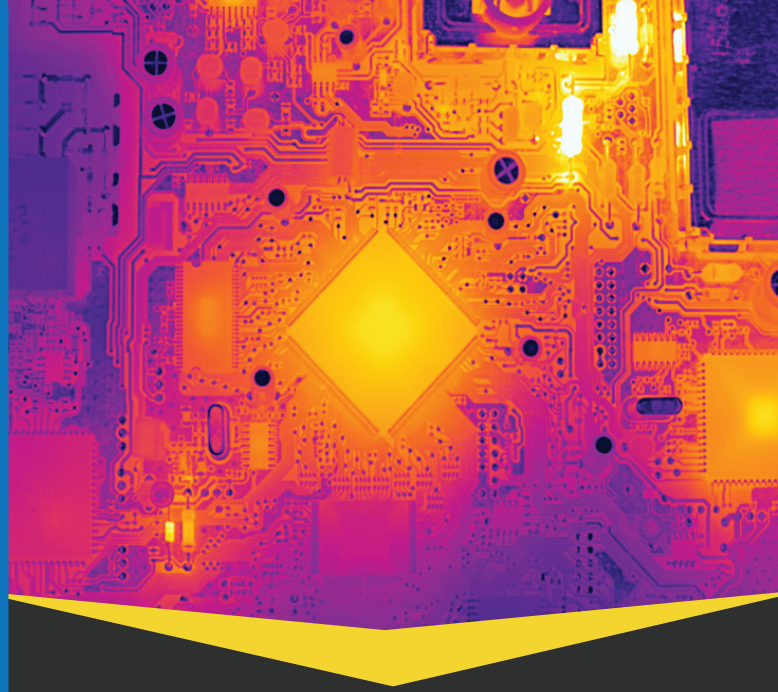

CENTER FOR
POWER OPTIMIZATION OF ELECTRO-THERMAL SYSTEMS

P/O/E/T/S

RESEARCH EXPERIENCE FOR UNDERGRADUATES