JUNE 1 - AUGUST 7

Application Deadline
March 10
Awards Announced
April 15

Get Application: https://www.tntech.edu/engineering/research/cesr/reu-irest/index.php

All qualified applicants are encouraged to apply, including minorities, women, veterans and individuals with disabilities.

Award Information
• $5,000 stipend for 10 weeks
• On-campus housing included
• Food allowance
• Round-trip travel expenses up to $300
• Research supplies up to $400

Eligibility
• U.S. citizen or permanent resident
• Electrical engineering, chemical engineering, mechanical engineering, physics, chemistry, mathematics and other related disciplines
• Sophomores, juniors and seniors from 2-year or 4-year institutions
• Must graduate after September 2020

Activities
• Energy-related, cutting-edge, immersive research and training
• Intelligent research and professional development seminars and workshops
• Hands-on training with real equipment
• Field trips to Oak Ridge National Laboratory (ORNL) and industrial partner sites
• Preparation of research papers and posters
• Saturday afternoon outreach session

Topic Areas
• Solar photovoltaics optical and electrical modeling
• Biomass pyrolysis, renewable and alternative energy resources
• Selectively gas permeable anode flow field for direct formic acid fuel cells
• High-energy-density lithium ion batteries
• Energy harvesting with embedded piezoelectric transducers in additive manufacturing
• Minimal-energy computational models
• Development of control system for enabling a highly efficient gasoline engine
• Modeling the energy absorption behavior of mechanical metamaterials with viscous component in their base materials

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2020 National Science Foundation (NSF) Research Experiences for Undergraduates (REU) Site

IMMERSIVE RESEARCH IN ENERGY, STORAGE/CONVERSION AND POWER TRANSMISSION

This NSF REU Site, funded by the Division of Engineering Education and Centers, focuses on providing cutting-edge research in the areas of energy generation (solar, biomass, piezoelectric, generation from salinity gradients, etc.), energy storage/conversion (lithium-ion and lithium-air batteries and formic acid fuel cells) and power grid integration (solar and electric vehicle to grid integration).

PROJECT OBJECTIVES
• Opportunities to conduct high-quality immersive research in the areas of energy generation, storage and power transmission.
• Train top national research talent in key emerging areas of energy, critical for maintaining national preeminence.
• Nurture student professional growth and train them on intelligent research approaches including: maintaining a daily diary, interpreting data and information, effective research outcomes dissemination and ethical decision making.
• Encourage students in energy-related careers and to pursue graduate studies through targeted field trips to Oak Ridge National Laboratory, guest seminars by industrial partners and cutting-edge research immersion.

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Award

Activities

Topic Areas

Contacts