

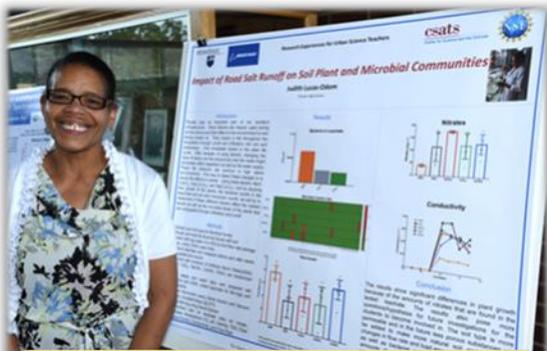


PennState
College of Education

CSATS Center for Science
and the Schools

Research Experience for Teachers @ Home

June 14 - July 30, 2021



Attend our RET webinar!
March 1, 2021 at 4 PM
Register now!

During this 7-week full-time, **at home research experience, teachers will work virtually** with a faculty member on an authentic research project through both synchronous and asynchronous work. All meetings will occur virtually and teachers will receive professional development provided by the Center for Science and the Schools (CSATS) to help translate the experience to the classroom. **Deadline to apply: April 18, 2021**

Research Experience Topics:

- Architectural Engineering
- Agricultural and Energy Engineering
- Materials Engineering
- Chesapeake Bay
- Cancer Institute

Program Benefits

- \$5000 stipend for the summer program and developing a classroom research project
- \$1500 stipend for implementing the classroom research project with students during the academic year
- Opportunity to earn up to 3 graduate credits through Penn State (SCIED 597) - ask us about this opportunity!
- Receive up to \$1000 stipend for materials and resources needed to implement the classroom research project
- Option to present at MJ Murdock Partners in Science Conference in San Diego, CA, January 2022

Program Eligibility

- Must be a secondary STEM teacher that teaches courses related to the research placements with at least 3 years of full-time teaching experience
- Must commit to implementing a classroom research project during the 2021-2022 school year

For further information, how to apply, and contact information please visit our website: csats.psu.edu





Research Experience for Teachers @ Home

June 14 - July 30, 2021

Research Project Descriptions

Architectural Engineering

This program is funded by a National Science Foundation Research Experience for Teachers Site grant and engages 10 secondary teachers in a 7-week research experience with a faculty member in architectural engineering. These researchers consider both the human experience in buildings as well as building system efficiency. Teachers will conduct in research about buildings and will consider their school facilities as “Living Laboratories” in both fundamental and applied research on architectural engineering and science topics including indoor air quality, lighting effectiveness, thermal comfort, and energy efficiency. Teachers will use their research experience to co-design a unit of study intended to enhance his/her current curriculum.

Materials Engineering

This program is funded by a National Science Foundation Engineering Research Center grant and engages a secondary teacher in a 7-week research experience with a faculty member in materials science/engineering or electrical and computer engineering that work on the ASSIST project (<https://assist.ncsu.edu/>). This project aims to develop wearable sensors that run on energy harvested from the environment. The teacher will conduct research related to this project and will use it to co-design a unit of study intended to enhance his/her current curriculum.

To be considered for this experience, you must also [submit your application to the ASSIST program](#).

Agricultural and Energy Engineering

Consortium for Cultivating Human And Naturally regenerative Enterprises (C-CHANGE), a program funded by the United States Department of Agriculture NIFA SAS grant, seeks to optimize the production of renewable natural gas and its byproducts through anaerobic digestion of herbaceous biomass and manure on farms in the upper Midwest and mid-Atlantic regions. To accomplish these tasks, researchers need to better understand the how best to increase value throughout the supply chain, including the feedstocks, process, and stakeholder engagement to improve the product value and increase profitability and sustainability. Accomplishing these goals will promote human health, economic prosperity, energy security, and ecosystem resources.

Chesapeake Bay

This program is funded by a National Science Foundation grant and engages a secondary STEM teacher in a 7-week research experience with [Dr. Raymond Najjar, Professor of Oceanography](#) at Penn State University. This project aims to better understand the regional effects of climate change by exploring the biogeochemistry (the cycling of nutrients) of the Chesapeake Bay. The teacher will participate in both field and laboratory work with Dr. Najjar’s group to better understand the rates of cellular respiration and photosynthesis in Chesapeake Bay estuaries. The primary goal of this Research Experience for Teachers program is to use this research to co-design a unit of study to enhance his/her current curriculum.

Cancer Institute

This program is funded by the Penn State Cancer Institute, which seeks to discover, develop and disseminate scientific knowledge from basic, clinical and population-based investigations. The Institute's mission is to enhance compassionate cancer care, cancer education, and innovative collaborative research, thereby decreasing the impact of cancer in central Pennsylvania and beyond. As part of this mission, the PSCI plays a vital role in training and educating the next generation of cancer research investigators, and in preparing trainees for sustaining careers in cancer research. Through this RET-PSCI partnership, secondary school STEM teachers will have the opportunity to perform real-world research with a PSCI investigator. PSCI researchers are organized into three programs that encompass a broad range of topics and disciplines. Through CSATS, teachers will be matched with a PSCI faculty mentor, located at either Penn State's Hershey or University Park campus, according to the applicant's background experience and areas of interest.