University of Illinois System

DEPARTMENT OF ENERGY (DOE)

FOR FY2024, THE U OF I SYSTEM REQUESTS $9.5 BILLION FOR THE OFFICE OF SCIENCE AND $570 MILLION FOR ARPA-E.

DOE OFFICE OF SCIENCE	
FY2024 PBR	= $8.8B
FY2023	= $8.1B
FY2022	= $7.475B
FY2021	= $7.026B

ARPA-E	
FY2024 PBR	= $650.2M
FY2023	= $470M
FY2022	= $450M
FY2021	= $427M

Appropriations Bill: Energy and Water Development, and Related Agencies

Agency: U.S. Department of Energy

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DOE R&D EXPENDITURES FY2022	
University of Illinois Chicago	$10.3 Million
University of Illinois Urbana-Champaign	$90.2 Million

*Source: FY2022 NSF HERD Survey

DOE-SUPPORTED PROJECTS AT UIUC

UIUC has been one of DOE's top university funding partners. UIUC is regularly among the top 10 institutions nationwide in annual DOE research expenditures.

DOE Office of Science
DOE awarded a five-year, $115M Bioenergy Research Center grant — one of four in the U.S. — to UIUC and 20 partner institutions in 2017 to establish the Center for Advanced Bioenergy and Bioproducts Innovation (CABBI). CABBI is using thematic research into feedstock production, conversion, and sustainability to develop sustainable, cost-effective biofuels – and bioproducts.

UIUC launched the Illinois Quantum Information Science and Technology Center (IQUIST) to revolutionize computing, communication, security, and measurement and sensing through quantum mechanics. In 2020, a team from UIUC was awarded a $12.6M DOE Energy Frontier Research Center on quantum sensing and quantum materials.

A $10.6M project funded by DOE's Office of Science, Renewable Oil Generated with Ultra-productive Energycane (ROGUE), uses computer models to guide the engineering of energycane to produce the oil used to create biodiesel and biojet fuel.

Office of Cybersecurity, Energy Security, & Emergency Response (CESER)
With support from DOE CESER and DHS' Security Science & Technology Directorate, the Cyber Resilient Energy Delivery Consortium (CREDC) is conducting cutting-edge research to bolster the resiliency of the nation's energy delivery systems.

National Energy Technology Laboratory (NETL)
The Prairie Research Institute is a global leader in demonstrating technologies for capture and storage of carbon dioxide to balance our nation's growing energy needs and climate concerns. DOE is funding multiple CarbonSAFE geologic storage projects to define and develop regional carbon storage infrastructure. A post-combustion Carbon Dioxide Capture project enables the commercial-scale capture of CO2 from coal-fired power plants.

Advanced Research Projects Agency (ARPA-E)
A "smart farms" research team was awarded $4.5M from DOE's ARPA-E program to calculate farm-scale carbon credits. It will allow individual farmers to understand the value of their land and practices toward carbon trading markets.

DOE awarded a $3.3M ARPA-E grant to a multidisciplinary research team at UIUC to develop a precise system for measuring bioenergy crops grown in central Illinois.

The Next Generation of Materials for Energy
As part of the Manufacturing USA Initiative, UIUC is a Tier 1 member of the DOE-funded REMADE Institute, which focuses on driving down the cost of technologies needed to reuse, recycle, and remanufacture materials such as metals, fibers, polymers, and electronic waste.

UIUC is leading a $2M project for the development of next generation steels aimed at meeting the challenges of hydrogen embrittlement.

UIUC's Prairie Research Institute is part of a national team to develop artificial intelligence technologies to sort non-recyclable plastics so they can be reused for fuels. DOE's Office of Energy Efficiency and Renewable Energy has awarded the team $2.5 million to complete the three-year project.

DOE National Nuclear Security Administration (NNSA)
The DOE's NNSA Advanced Simulation and Computing announced it will fund a new $17M Center for Exascale-enabled Scramjet Design at UIUC. It will be a boon for hypersonics efforts at UIUC and for bringing high-performance computing together with engineering analysis and design.

Office of Nuclear Energy
The DOE's Office of Nuclear Energy funds R&D projects, infrastructure upgrade grants, fellowships and scholarships under the Consolidated Innovative Nuclear Research program. DOE-supported nuclear energy research at Illinois includes enterprise risk management, irradiation assistance for stress in weldments, computer code validation for nuclear power plants, advanced structural materials tolerance, and accident-tolerant nuclear fuels.

Advancing Commercial Applications
From 2003-2021, DOE awarded 95 Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) awards to EnterpriseWorks companies for a total of nearly $48.9M.

DOE-SUPPORTED PROJECTS AT UIC

In 2020, DOE's NNSA awarded $8M over four years to UIC to lead a multisite, interdisciplinary center focused on research, training and technique development in the study of materials in extreme conditions.

UIC's Energy Resources Center was selected to receive a $1.8M research grant from DOE to investigate the impacts of locating pollinator habitat at large-scale solar facilities.

UIC and UIUC are partners in the Joint Center for Energy Storage Research (JCESR), a DOE Energy Innovation Hub that was renewed by the Office of Science in 2018 for another 5 years. JCESR is a major research partnership that integrates national laboratories, universities, and private companies with the mission of overcoming scientific and technical barriers and developing breakthrough energy storage technologies for transportation and the electricity grid.

With a five-year, $4.2M grant from the DOE Office of Energy Efficiency & Renewable Energy, UIC is helping industrial, commercial, institutional and utility entities evaluate and install highly efficient combined heat and power (CHP) technologies. CHP, also known as cogeneration, is a single system that produces both thermal energy and electricity. CHP has typical operating efficiencies of 65-75% or greater while more conventional and separate systems for electricity and heat operate at approximately 50% efficiency.

Engineers at UIC were awarded just over $1 million from DOE's National Alliance for Water Innovation to build a system that selectively removes and destroys poly- and perfluorinated substances, commonly called PFAS and referred to as "forever chemicals," from industrial and municipal wastewaters.