

# SC EPSCoR/IDeA

South Carolina Experimental Program to Stimulate Competitive Research and Institutional Development Awards

EPSCoR/IDeA programs are merit-based, competitive, authorized programs operating within five federal agencies (NSF, NIH, DOE, USDA, NASA) across 25 states and 3 US territories, including South Carolina. These programs invest in research that will lead to new technologies as well as train the future science and engineering workforce during a time of increasing global competitiveness and economic challenges. Over the past decade, EPSCoR/IDeA programs have been directly responsible for **\$216.1 million** of funding for research and workforce development to South Carolina's institutions of higher learning.

## EPSCoR/IDeA Funding by US Congressional District

Congressional District	Institution	Amount* (M)
District 1	College of Charleston	\$8.2
	University of South Carolina Beaufort	\$2.3
District 2	University of South Carolina Aiken	\$0.5
District 3	Clemson University	\$25.3
District 4	Furman University	\$7.1
District 5	Winthrop University	\$6.1
District 6	Clafin University	\$5.5
	Medical University of South Carolina	\$88.6
	South Carolina State University	\$2.2
	University of South Carolina	\$68.8
District 7	Francis Marion University	\$1.5
Total:		\$216.1

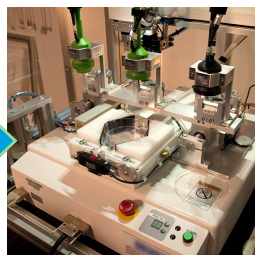
\*Includes active NSF/EPSCoR Co-funding. District 2 funding pending

## NATIONAL SCIENCE FOUNDATION



The Bioengineering Building at the Medical University of South Carolina (MUSC) was constructed by the state to support the NSF-funded South Carolina Project for Organ Biofabrication. Tissue engineering and regenerative medicine research here lead to new technologies for organ replacement.

The Palmetto Printer, designed by Clemson University, MUSC, and University of South Carolina scientists, brings us one step closer to the manufacture of 3D vascularized, living constructs.



## NATIONAL INSTITUTES OF HEALTH

South Carolina is home to eight NIH Centers of Biomedical Research Excellence (COBRE), which support health-related studies and establish research infrastructure.

Focusing on bioengineering in medical therapy, the **COBRE for Biomaterials for Tissue Regeneration** at Clemson University is developing ways to regenerate damaged tissue. This includes regeneration of tissue damaged from heart disease and restoration



of central nervous system function following spinal injury or stroke.



While strokes are among the most disabling conditions in the state and nation, few options exist to treat survivors. The **COBRE for Recovery from Stroke** at the Medical University of South Carolina (MUSC) is a collaboration of medicine, rehabilitation, and engineering experts working to understand the impact of stroke on brain function. These studies will lead to better post-stroke therapy and improve quality of life for survivors.

**COBRE for Dietary Supplements and Inflammation** researchers at the University of South Carolina School of Medicine are studying the effects of botanical treatment on inflammatory and autoimmune symptoms of diseases such as Alzheimer's disease, prostate cancer, and heart disease. These studies will form the basis for disease therapeutics using plant-based treatment.

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## UNITED STATES DEPARTMENT OF AGRICULTURE



Clemson University's Dr. Stephen Kresovich studies the growth of a grain called **sorghum**, which is used for biofuel and livestock feed. The plant uses less fertilizer and water than other grains, making it an economical source of bioenergy and feed for the state.



Also funded by the USDA, Dr. Kenneth Robinson of Clemson University researches the benefits of small, local farms supplying produce for food banks in South Carolina. Food banks serve fresh, nutritious meals while developing and sustaining the local economy. This supports public health and further develops small communities across the state.



Childhood obesity rates across the nation are high and rising. Dr. Sonya Jones of the University of South Carolina researches food system strategies used to reduce obesity rates.

Through studying and evaluating the effectiveness of these strategies in real world community contexts, new systems can be developed & improved to prevent childhood obesity and improve overall public health.

## NASA

In preparation for the 2020 Mars Rover launch, University of South Carolina scientists are developing new technologies for extraterrestrial soil analysis.



University of South Carolina researchers are studying the manufacture, evaluation, and testing of composite materials for future aerospace transport structures and power sources. New composite materials, such as polymers and ceramics, have increased durability and resistance to extreme electromagnetic and heat conditions of space travel.

## DEPARTMENT OF ENERGY

In Fall 2014, Dr. Brian Powell of Clemson University was awarded a 3 year, **\$5.25 million** grant to study the movement of radionuclide waste in contaminated soils and better methods of waste containment. Such studies are important to South Carolina's nuclear industry and the Savannah River National Laboratory located in Aiken, SC.



The goal of this collaboration between Clemson University, South Carolina State University, & the University of South Carolina is to advance technologies involving monitoring, remediation, and disposal of radioactive contaminants.