

SC EPSCoR/IDeA

South Carolina Established 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 three 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.

Since 2006, **EPSCoR/IDeA** programs have been awarded **over \$260 million** of research funding and workforce development to South Carolina's academic institutions. Since 1988, EPSCoR/IDeA programs have funded the hiring of **195 faculty members** in science and engineering disciplines – not including the **17 faculty** that will be hired in the next five years as part of South Carolina's newly-awarded \$20 million NSF EPSCoR Research Infrastructure Improvement Track-1 grant, **MADE in SC**.

EPSCoR/IDeA Funding by South Carolina Congressional District

District	Institution	Amount* (Millions)
District 1	College of Charleston	\$8.90
	Medical University of South Carolina	\$96.40
	University of South Carolina Beaufort	\$2.40
District 2	University of South Carolina Aiken	\$1.05
District 3	Clemson University	\$39.77
	Presbyterian College	\$0.80
District 4	Converse College	\$0.60
	Furman University	\$8.40
District 5	Winthrop University	\$7.10
District 6	Clafin University	\$6.48
	South Carolina State University	\$2.90
	University of South Carolina	\$86.00
	Voorhees College	\$0.13
District 7	Coastal Carolina University	\$0.70
	Francis Marion University	\$2.20

*Includes DOE and NSF EPSCoR Co-funding

Total : \$263.55

National Science Foundation (NSF)

2017 was a big year for SC EPSCoR and NSF. Researchers in the state received funding from all three NSF EPSCoR programs. A statewide consortium of advanced materials researchers and educators was awarded a



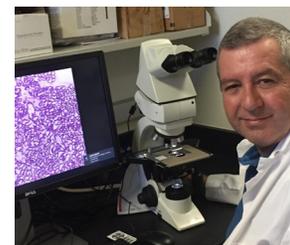
\$20 million, five-year Research Infrastructure Improvement Track-1 award. This new grant will position South Carolina as a leader in advanced materials manufacturing, and develop a new pipeline of diverse and highly skilled talent through collaborations among ten SC colleges and universities. This



new initiative, called Materials Assembly and Design Excellence in South Carolina (**MADE in SC**) is a unique collaboration that unites 70 researchers from 10 SC academic institutions and impacts over 600 students and more than 100 teachers in a commitment to lead the way in

advanced materials research and development, build capacity of existing SC industries and attract new ones.

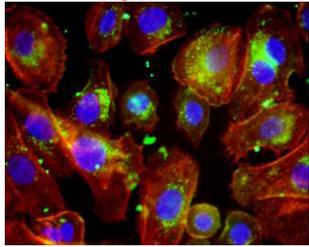
Three SC investigators received two awards with a combined total of **\$10 million** in NSF EPSCoR RII Track-2 funding for Genomes-to-Phenomes research. The SC EPSCoR State Office provided seed funding of up to \$7,000 per team to enhance the development of their submissions.



Dr. Sarah Harcum, Clemson University, received \$6 million to **solve biopharmaceutical manufacturing challenges**, Dr. Hippokratis Kiaris (shown), University of South Carolina (USC) to study the **genomic basis of stress response**, received \$4 million. Dr. Ananda Mondal, Clafin University will receive \$150,000 from Kiaris for four years to support a graduate student in Biotechnology. Other SC researchers are also collaborating on NSF RII Track-2 grants with lead principal investigators in Kansas and in Puerto Rico.

Two USC investigators received NSF EPSCoR RII Track-4 Research Fellows Program awards with a combined total of **over \$500,000**. Dr. Mohammed Baalousha will visit the DOE **Pacific Northwest National Laboratory** and Dr. Eric Vejerano will visit the **National High Magnetic Field Laboratory** located at Florida State University.

National Institutes of Health: Institutional Development Award (IDeA) Program

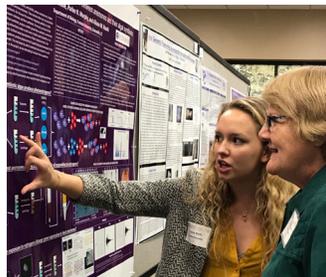


South Carolina is home to 10 NIH Centers of Biomedical Research Excellence (COBRE) awarded to strengthen biomedical research infrastructure (~\$100 million combined over five years). Shown is a research photo from the **Center for Oral Health Research**

located at the Medical University of South Carolina. For links to this and other COBREs, visit <https://goo.gl/mYHtVF>

SC is also home to an IDeA Network of Biomedical Research Excellence (INBRE)

which strengthens biomedical research infrastructure across 13 member and four outreach institutions in South Carolina (\$18.2 million over five years). SC INBRE supported faculty work on a wide variety of products including **cancer genetics and biomarkers, anemia, brain injury and healing, metabolism and fetal development and diseases**. SC INBRE provides two faculty grant programs for bioinformatics and developmental research which include the participation and education of students and holds annual workshops and symposiums open to the public. SC EPSCoR and SC INBRE both contribute funds to **Research Experiences for Teachers**, a 6-week intensive training for high school teachers each summer located at Furman University. Learn more at www.scinbre.org



Department of Energy (DOE)

DOE EPSCoR places high priority on increasing the number of scientists and engineers in energy-related areas. In the last five years, **DOE EPSCoR** has invested **over \$6,000,000** in SC.



Dr. Brian Powell, Clemson University, is the principal investigator of the project "Radionuclide Waste Disposal: Development of Multi-scale Experimental and Modeling Capabilities" which is funded as an Implementation Award through the DOE EPSCoR. This is a **\$5.25 million three-year award** for research into **finding the safest ways of storing nuclear waste**. As principal investigator on the grant, Powell

is leading a team of more than 20 researchers from across the state including collaborators at the University of South Carolina and South Carolina State University.

DOE EPSCoR also supported SC Researchers in collaboration with a University of Tennessee research team.

National Aeronautics and Space Administration (NASA)



In SC, NASA EPSCoR is represented by the South Carolina Space Grant Consortium (SCSGC). A partnership between the SC NASA EPSCoR / SCSGC Office and SC EPSCoR helps SC researchers to establish contacts with and access resources from NASA. In the last five years, NASA EPSCoR has invested in projects that include **floodplain research** (Dr. Raymond Torres, USC), **flow boiling patterns** (Dr. Chen Li, USC) and **battery technology for space applications** (Dr. Apparao Rao, Clemson, shown above – at right in photo with student).

US Department of Agriculture (USDA)

Since 2015, South Carolina has received **over \$4,000,000** from the USDA EPSCoR Program.

In 2017, two researchers from Clemson University each received \$150,000 for their projects: Dr. Dil Thavarajah (project educational component shown), "Seed Grant on **genomics of prebiotic carbohydrates** affecting lentil nutritional quality" and Dr.

Nathan Long, "The impact of leptin concentrations on the development of **appetite regulation** in beef calves."



Small Business Innovation Research and Technology Transfer (SBIR/STTR)

SC EPSCoR/IDeA provides a competitive seed funding program called "Phase-0" to **support small businesses** seeking funding for their innovative ideas from SBIR and STTR programs. This program provides \$6,000 grants aid small businesses to prepare strong and competitive proposals to federal SBIR/STTR programs. Several of the SC EPSCoR Phase-0 awardees have been successful in securing SBIR/STTR funding. In 2017, these small businesses included: Accessible Diagnostics, Palmetto Propulsion, Purilogics, LLC, and SealCath, with each receiving \$50,000 Acceleration Grants from South Carolina Research Authority (SCRA).



To date, Purilogics has earned **\$1,960,000** in non-dilutive capital, including two NIH SBIR Phase-I awards and one NIH SBIR Phase-II award, to develop their high-speed single-use and disposable membrane filters and is working with three biopharmaceutical companies prototypes. www.purilogics.com