



SmartState®

SC Centers of Economic Excellence

November 30, 2017

The Honorable Henry McMaster, Governor of the State of S.C.
The Honorable Hugh K. Leatherman, Sr., President Pro Tempore, and Members, S.C. Senate
The Honorable James H. "Jay" Lucas, Speaker, and Members, S.C. House of Representatives

Dear Governor McMaster and Members of the S.C. General Assembly:

On behalf of the S.C. Centers of Economic Excellence Review Board, I am pleased to provide you with the SmartState® Program 2016-2017 Annual Report and the 2016-2017 SmartState Program Audit. We are proud to share with you the program's accomplishments and to report again this year an unqualified audit with no material findings. These reports highlight the tremendous success of SmartState.

To date, the SmartState Review Board has approved 51 research centers in areas such as biomedicine, pharmaceutical research, automotive engineering and transportation, energy, nanotechnology, information science, and advanced materials. Across these centers, 85 SmartState endowed chair positions have been approved, and 71 appointments have been made and announced. As envisioned by the General Assembly in 2002, SmartState is delivering significant returns on the state's investment on many fronts such as sponsored research, corporate partnerships, company relocations and startups, increased jobs in our state, and opportunities for young people at our universities, in industry and as entrepreneurs. According to a recent study by the University of S.C.'s Moore School of Business, SmartState is responsible for helping to create and support approximately 13,923 jobs in our state, which are associated with nearly \$2.8 billion in total economic activity and \$755 million in labor income for South Carolinians that would not exist otherwise. Of the total 13,923 jobs, 5,052 (36%) are high-paying knowledge economy jobs created directly through the program with an average salary of \$74,815, which is roughly 82 percent higher than the average annual salary among all jobs in South Carolina.

The SmartState annual program report and audit are being transmitted in accordance with statute and made available to members of the S.C. General Assembly in electronic format through the S.C. Legislative Services Agency. You will also find a copy of the annual report and other program information available at www.smartstatesc.org. Should you desire a hardcopy annual report, please contact Dr. Argentini Anderson at the S.C. Commission on Higher Education at aanderson@che.sc.gov or 803.737.2276.

The SmartState Review Board trusts the enclosed reports will be helpful to you in better understanding this important program and looks forward to working with you in the coming year and as the future of SmartState is considered. As always, we extend our appreciation and thanks to each of you for the work you accomplish on behalf of higher education and academic research and for the betterment of South Carolina and its citizens.

Jason Premo
Chair, SmartState Review Board

cc: The Honorable Richard Eckstrom, S.C. Comptroller General
The Honorable Curtis Loftis, State Treasurer of S.C.
Ms. Marcia Adams, Executive Director, Department of Administration
Members, SmartState Review Board
Mr. Jeff Schilz, Interim Executive Director, S. C. Commission on Higher Education

SOUTH CAROLINA

Transformation

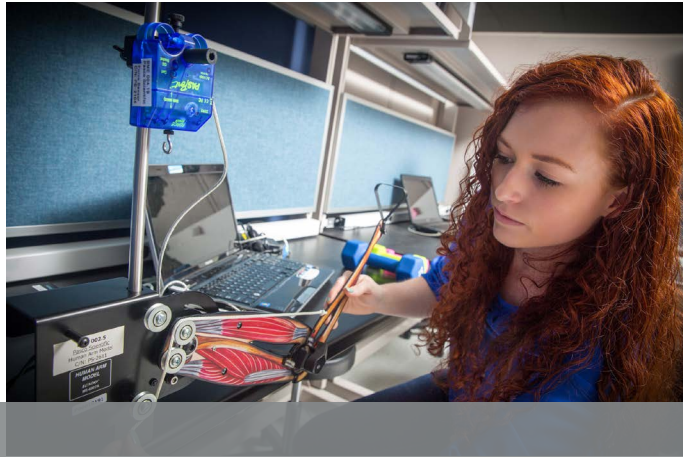
2016/2017 ANNUAL REPORT



Contents

- 1 Mission
- 2 Welcome from the SmartState Review Board
- 4 South Carolina's Research Universities
- 6 Guest Profile: Sam Tenenbaum, President, Palmetto Health Foundation
- 8 SmartState Profile: Clemson's Dr. Johan Enslin
- 10 SmartState Profile: USC's Dr. Mitzi Nagarkatti
- 12 SmartState ROI and By The Numbers
- 14 Investors, Startups and Relocations
- 15 SC Receives \$20 Million National Science Foundation Grant
- 16 SmartState Profile: MUSC's Dr. Marvella Ford
- 18 SmartState Profile: Clemson's Dr. Laine Mears
- 20 SmartState Centers
- 30 SmartState Profile: USC's Dr. Jeffery Twiss
- 32 SmartState Endowed Chairs
- 36 SmartState Profile: MUSC's Dr. Stephane Meystre
- 38 Looking Ahead





MISSION: *The South Carolina SmartState® Program serves the public interest by creating incentives for the state's research universities, in cooperation with other institutions of higher education in the state, to raise capital from non-state sources to fund endowments for specialized research professorships. These professorships in turn serve as the nucleus for unique, university based research centers which cultivate critical, public-private industrial partnerships, expand the state's knowledge base, create well-paying jobs, enhance economic opportunities, and improve the quality of life for the people of South Carolina.*



WELCOME FROM THE SmartState Review Board

The SmartState Review Board consists of eleven members who serve three-year terms. Three are appointed by the Governor, three are appointed by the President Pro Tempore of the Senate, three are appointed by the Speaker of the House of Representatives, one by the Senate Finance Committee, and one by the Chairperson of the House Ways and Means Committee. The Review Board oversees operations of the SmartState® Program. The presidents of South Carolina's three research universities serve as ex officio, non-voting members.



KAROLY "CHARLES" KEREKES
VICE CHAIR
Appointed by the Governor

To My Fellow South Carolinians,

It is with pleasure that the SmartState Review Board shares the program's 2016-2017 annual report, Transforming South Carolina. This report showcases the progress this novel program has made in transforming South Carolina's economy through research centers of excellence and the world-renowned scientists, engineers, and educators who serve as SmartState Endowed Chairs. Currently, 71 of the 85 approved endowed chairs are filled.

The report features profiles of six SmartState Endowed Chairs who are working to transform our state in the areas of automotive manufacturing, energy, health informatics, cancer drug discovery, cancer health disparities, and neurotherapeutics. These are areas important not just to South Carolina, but to our nation and the world at large. I personally enjoy the profiles as they provide a personal glimpse into the chairs' labs and lives. It's enlightening and enjoyable!

I'm also pleased to report that South Carolina State University (SCSU) now has its first SmartState Endowed Chair, Dr. Marvella Ford, an expert in health disparities. Dr. Ford serves on the faculty of both the Medical University of South

Carolina (MUSC) and SCSU. Dr. Ford and her colleagues at MUSC and SCSU were recently awarded \$12.6 million in federal grants for prostate cancer disparities research, education and community outreach. The goal is to transform the health of men who currently experience poor outcomes from this all-too-common cancer.

Lastly, I would like to thank the vision of South Carolina's General Assembly for creating the SmartState® Program, the many businesses and private foundations that have invested in endowed chairs and centers, the universities for fulfilling the promise, and the many community advocates who have tirelessly supported this very worthy program. The SmartState® Program has played a major role in transforming our state.

KAROLY "CHARLES" KEREKES, VICE CHAIR
SmartState Review Board
Appointed by the Governor



JASON P. PREMO
CHAIR
Appointed by the Governor



CHARLES W. GARNETT
Appointed by the Governor



LISA D. MAIN
*Appointed by the Speaker,
House of Representatives*



ROBERT W. PEARCE, JR.
*Appointed by the Speaker,
House of Representatives*



REGAN VOIT
*Appointed by the Chairman,
Senate Finance Committee*



MELVIN C. WILLIAMS
*Appointed by the President
Pro Tempore, Senate*



ROBERTA BANKHEAD WOOD
*Appointed by the Chairman,
House Ways & Means Committee*

SOUTH CAROLINA'S Research Universities

The SmartState® Program funds Centers of Economic Excellence at South Carolina's three senior research universities: Clemson University, the Medical University of South Carolina (MUSC), and the University of South Carolina (USC). Other state universities such as South Carolina State University and the College of Charleston are included as collaborative research partners.

In 2002, members of the South Carolina General Assembly recognized the critical role research universities have in advancing innovation, creating economic and educational opportunities, and improving overall quality of life for the state's citizens when it acted by the enabling legislation of the SmartState® Program. Today, other states look to South Carolina's SmartState® Program as the model for university-based public-private partnerships that foster innovation, launch companies and create jobs.

Ranked #23 among national public universities, **Clemson** is a major land grant, science- and engineering-oriented research university that is an inclusive, student-centered community characterized by high academic standards, a culture of collaboration, school spirit, and a competitive drive to excel. With agricultural and forestry research centers and innovation campuses located from Greenville to Charleston, and a presence in every county, Clemson's campus is truly the entire state of South Carolina. This year, Clemson was classified among universities with the highest level of research activity by the Carnegie Classification for Institutions of Higher Education.

Clemson has launched a new strategic plan, **ClemsonForward**, which emphasizes high-impact engagement opportunities to prepare students for a knowledge-based global economy, and growing research and doctoral education to help find solutions to real world problems. The plan also supports economic development and creates jobs, enhances quality of life and builds the university's national academic reputation. The plan identifies six innovation clusters to support development of multi-disciplinary teams and large research projects: Health Innovation, Sustainable Environment, Human Resilience, Big Data Science, Complex Engineered Systems, and Advanced Materials.

MUSC has served the citizens of our state since 1824. MUSC has expanded from a small, private college to a comprehensive academic health sciences center, with more than 1,700 faculty members educating and training more

than 3,000 students, residents, and biomedical scientists in six colleges (Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing, and Pharmacy). As the largest non-federal employer in Charleston, the university and its affiliates have collective annual budgets in excess of \$2.3 billion, with an annual economic impact of more than \$3.8 billion and research funding in excess of \$250 million annually. MUSC Health operates one of the state's largest and most innovative health systems, which includes a nationally recognized Children's Hospital, the Ashley River Tower (cardiovascular, digestive disease, and surgical oncology), Hollings Cancer Center (a National Cancer Institute-designated center), Level I Trauma Center, Institute of Psychiatry, and the state's only transplant center.

Since opening in 1805 with an initial enrollment of nine students, the University of South Carolina (USC) has grown its student body to more than 50,000 across eight campuses statewide. USC, the fourth fastest growing flagship university in the nation boasts 47 nationally ranked programs by *U.S. News & World Report*. The main campus in Columbia offers more than 300 degree programs through its 14 colleges and schools, which include the Darla Moore School of Business, the School of Law, the Arnold School of Public Health, and the nation's top-ranked public university honors college. USC is also one of only 32 public universities to receive the top-tier research designation and the top-tier community engagement designation from the Carnegie Foundation. As a leader in health sciences, USC offers the most comprehensive suite of health science academic programs (100) in South Carolina, including medical schools in Columbia and Greenville. That diversity of offerings allows for expansive research opportunities as well as exemplary student experiences, which have made the South Carolina the state's top global university. The university's strength in leading-edge research has led to recent public/private partnerships with Fortune 500 companies like Fluor, IBM, Siemens and Boeing. And, USC's 19 locations and its alumni throughout South Carolina pump \$5.5 billion into the state's economy annually, making Carolina an indispensable contributor to the state's prosperity. ●



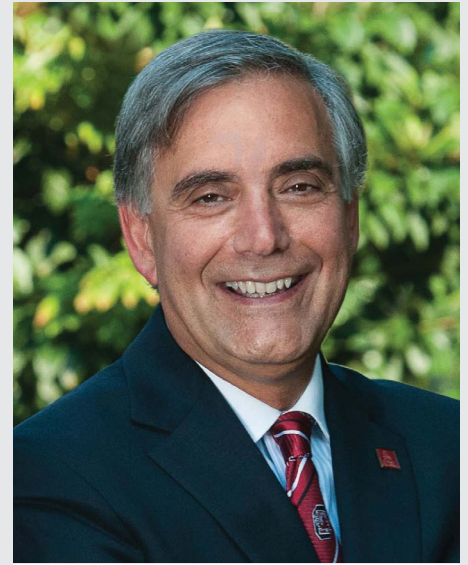
“The SmartState® Program truly represents the power of public-private partnerships to make a positive difference for the State of South Carolina. It also continues to have a tremendous impact on Clemson University and our ability to recruit and retain top faculty and students, which ultimately makes the university and state more attractive to industry partners”

JAMES P. CLEMENTS, Ph.D.
President
Clemson University



“Fifteen years after the inception of South Carolina’s SmartState® Program, is a stellar example of what’s needed to transform and grow our state through the establishment of a knowledge-based economy. This aligns with MUSC’s vision, to lead health innovation for the lives we touch, which embraces collaboration, drives innovation, and ultimately is fueled by the ability to recruit and retain world-class investigators.”

DAVID J. COLE, M.D., FACS
President
Medical University of South Carolina



“The SmartState® Program was established with high expectations of transforming the quality of life in our state through innovation, collaboration and workforce preparation. In the past year alone, USC hired three additional world-renown SmartState chairs. Today, our students work side-by-side with these outstanding professors. Tomorrow, these students will be South Carolina’s most sought after employees and will continue to transform and shape the Palmetto State’s knowledge-based economy.”

HARRIS PASTIDES, Ph.D.
President
University of South Carolina



GUEST PROFILE

Every Transformation Begins with an Idea

As a child growing up in Savannah, Georgia, Sam Tenenbaum appreciated the power of knowledge. By the third grade, he'd read the entire encyclopedia. A graduate of Emory University, he was pursuing a master's degree at the University of Minnesota when he was called home by his mother's illness. The family business brought him to Columbia, S.C. in the 1960s. His opportunistic mind came with him.

Tenenbaum smiles at the memory. "Throughout my life, when my brain pops out wild ideas, I go with them."

In the late 1990s, South Carolina was in an economic slump due to the collapse of the U.S. textile industry. The state was debating whether or not to start a state lottery to fund public education. Tenenbaum liked the idea and began to build support and debate naysayers. In the end, the General Assembly established the South Carolina Education Lottery.

Fresh off that success, Tenenbaum came up with an innovative idea. "I went to (then) University of South Carolina (USC) President John Palms and made the argument that the only way to recruit the best professors to our universities was through endowed chairs. An endowment funded by the South Carolina Education Lottery would pay for research-oriented chairs and lower university operating costs. President Palms loved it."

Although the Medical University of South Carolina (MUSC) did not have any state lottery funds allocated to graduate education, this did not prevent Tenenbaum from discussing his endowed chairs idea with their leadership. MUSC also loved the idea of endowed chairs. Tenenbaum knew then he had a great idea.

Tenenbaum talked to Governor Jim Hodges, state legislators, business people, and many others. He referenced a similar program in Kentucky, Bucks for Brains Endowment Match Program, funded by their state government to encourage research and strengthen key programs at their universities. Tenenbaum wanted South Carolina to contribute \$30 million to fund endowed chairs at the three research universities. By this time, he'd succeeded in getting Clemson University President Jim Barker, MUSC President Ray Greenberg and USC President Andrew Sorensen onboard.

To make the offer more attractive, Tenenbaum suggested the universities ask corporations to match every dollar invested by the state to double the total investment in research chairs

to \$60 million. This became an integral part of the SmartState® Program.

The General Assembly passed legislation in 2002 to use South Carolina Education Lottery funds to create Centers of Economic Excellence—today's SmartState® Program—in research areas that would advance the state's economy.

Even with this victory Tenenbaum continued pursuing support for the program. He made a trip to the Upstate to call on Bobby Hitt at BMW. (Hitt is now S.C. Secretary of Commerce.) BMW became the first SmartState corporate partner, investing \$10 million dollars in two endowed chairs at Clemson. These global experts in automotive manufacturing and systems integration became the nucleus of CU-ICAR, Clemson's international center for automotive research, which to date has attracted \$250 million in capital investment and made South Carolina a leader in the global automotive industry.

Since then, the SmartState® Program has created 85 endowed chairs, attracted corporate sponsors that include AT&T Foundation, BASF, Fluor, and Michelin North America; and generated a total return on investment of \$2.4 billion. Not bad for a wild idea!

As the SmartState® Program enters its fifteenth year, Tenenbaum remains one of its biggest supporters. On his frequent trips to Washington D.C., he makes a point of taking the annual report to Senator Lindsey Graham with the idea of establishing a version of the SmartState® Program called "SmartNation" to ensure America's global competitiveness. Back in South Carolina, he's pushing an idea to establish an international innovation center at USC with Israel.

Asked what keeps the ideas flowing, the man who earned the nickname "Tenaciousbaum" shares his philosophy. "If I am not for myself, who will be for me? If I am not for others, what am I? And if not now, when?" ●



SAM TENENBAUM
President, Palmetto Health Foundation
South Carolina Visionary and Activist

SMARTSTATE PROFILE

Dr. Johan Enslin



Dr. Johan Enslin's reputation as a renewable energy expert is the result of a 35-year career that includes leadership positions at more than 90 power utilities, governments, corporations, and universities in the United States, Europe, Asia, and South Africa. In addition to his SmartState Chair, Enslin is the founding executive of the Energy Systems Program at the Zucker Family Graduate Education Center and a professor in SmartGrid at Clemson University's campus in North Charleston. He holds more than 25 provisional and final patents related to power grid technology.

A month after Hurricane Maria devastated Puerto Rico, 80 percent of the island's residents were still without power. It was not for a lack of relief efforts. Puerto Rico's energy grid was in disrepair before the hurricane and required a total re-build.

Dr. Johan Enslin warns that Puerto Rico's plight is not unique; most of the world's power grids are vulnerable to severe weather and something even more insidious: cyber attacks. Diversification in power generation, greater resilience of power grids, and better control and storage technology are needed to secure power delivery and availability.

Enslin is an expert in power system planning, power electronics, and the integration of large-scale solar and wind power to the electric grid. In August 2016, he was named the Duke Energy Smart Grid Chair for Clemson University, charged with leading the development and growth of research and education initiatives in emerging electric grid technologies. His research is focused mainly in the area of building smarter, modern power grids. He also is evaluating the role and optimization of energy storage technologies in grid modernization. Priority is given to technologies and approaches that support large-scale renewable energy integration and improve energy efficiency that demonstrates positive business cases.

Enslin's research builds upon Clemson's unique facilities at the Clemson University Restoration Institute in North Charleston, which include a wind-turbine drivetrain testing and research facility and the Duke Energy eGRID grid emulation facility. These two facilities form the cornerstone of the SCE&G Energy Innovation Center and are the largest such facilities in the world, representing more than \$110 million in public and private investment.

With these resources, Clemson stands poised to transform not just South Carolina's energy industry, but the global industry at large as companies and nations seek to increase the use of sustainable energy, integrate multiple generation sources

into newer, more advanced grids, and secure these grids from disasters. Energy security is a huge task; Enslin is a realist.

"States, nations, and companies can no longer rely on one source of power generation; it's too risky. The answer is to diversify—wind, solar, hydro, coal, natural gas, nuclear. Diversity is also critical because solar and wind generate power intermittently, while demand is constant. Renewable energy sources are not as easy to integrate into power grids and require costly energy storage," he explains.

Enslin also advocates a move to smaller, distributed generators, a notion that runs counter to traditional thinking that relies on power plants. Not only are these large generators risky when they fail, they need extensive power grids and force markets to subscribe to them over a long time rather than meeting market demands. Lastly, generators should be located closer to customers where power is needed, improving system resiliency.

"Power generation needs to be nimble and distributed," Enslin says. "If there is an issue such as a hurricane, the entire grid does not collapse. Life and businesses can continue."

Enslin is also leading the growth of Clemson's graduate research and education programs at the Zucker Family Graduate Education Center, located at Clemson's North Charleston site. The program includes master's and doctoral degrees in areas that include computer science, electrical engineering, materials science, and mechanical engineering. All courses are online enabling Clemson to attract students from around the world. The programs are attracting industry working professionals as well as traditional full-time students. There are plans to hire a dozen new faculty members for the new power program over the next few years.

"Getting master's and Ph.D. degrees may be very expensive; our approach is flexible and affordable and will attract more energy industry professionals to South Carolina," Enslin says. ●



JOHAN ENSLIN, PH.D.

Duke Energy Smart Grid Chair
SmartState Center for Smart Grid Technology

SMARTSTATE PROFILE

Dr. Mitzi Nagarkatti



Since joining the University of South Carolina in 2005, Dr. Mitzi Nagarkatti has secured more than \$45 million in grants from the National Institutes of Health (NIH) and the Veterans Administration in areas that include cancer immunology and immunotherapy, inflammation, immunopharmacology, and complementary and alternative medicine. She was recently awarded a \$10 million NIH COBRE grant to study dietary supplements and inflammation, creating new jobs for junior faculty.

Since an early age, Dr. Mitzi Nagarkatti has felt a driving ambition to do something to benefit humanity and treat and prevent disease. As the University of South Carolina (USC) SmartState Chair in Cancer Drug Discovery with far-ranging research interests and a lab humming with nearly 25 researchers, she is busy achieving her life goals.

Nagarkatti's research is focused on the underlying mechanisms of inflammation and how the immune system responds. Inflammation is the body's attempt to protect itself and remove harmful stimuli and begin the healing process. Infections, wounds, and other damage to tissue would not heal without an inflammatory response. The problem lies when inflammation becomes chronic, a condition that can turn colitis into colon cancer or hepatitis into liver cancer.

Her challenge, says Nagarkatti, is to find drugs that lead to an anti-inflammatory response. Today, patients have few options as drugs currently on the market have side effects toxic to the cardiovascular and gastrointestinal systems. As her drug discovery efforts are focused on plant-based products, the

USC has purchased a library of 800 plant-based products, which Nagarkatti is testing for anti-inflammatory and anti-cancer properties.

"Some of the most common drugs are plant based," explains Nagarkatti. "Aspirin, made from willow tree leaves, has been used to treat pain and inflammation for at least 2,400 years. A more recent example is Taxol, an anti-cancer drug made from the bark of yew trees. Plants offer great opportunities."

Among her interests is the French paradox: how is it that the French eat red meat, butter their baguettes, drink

red wine, and don't have an issue with heart disease? The answer is a plant compound called resveratrol with high antioxidant properties that is found in grapes and red wine. Would this same compound soothe colitis and reduce the risk of colon cancer?

Nagarkatti says the next colon cancer drug might also be found in broccoli, Brussels sprouts, cabbage, and kale. While it would be next to impossible to eat enough of these cruciferous cancer fighters to make a difference, a pharmacological dose derived from them would have the desired anti-inflammatory effect.

But don't expect a broccoli pill anytime soon. Nagarkatti explains researchers must first look at epigenetic mechanisms that underlie cancer development and determine how to impact them with foods. The answers to an individual's response to specific drugs and diseases lie outside of genes but within DNA.

Answers may also reside in an individual's stomach where billions of bacteria, called microbiome, reside. Microbiome are sometimes called a person's genetic footprint since they help determine DNA, hereditary factors and predisposition to diseases, including cancer. Nagarkatti and her team are working on sequencing microbiome, which will ultimately play an important role in precision medicine and drug discovery.

Nagarkatti credits the SmartState® Program for helping her realize her dream of helping others. "It is a wonderful opportunity to lead translational research studies, to attract research funding to South Carolina, train the next generation of researchers, and commercialize new drugs." ●



MITZI NAGARKATTI, PH.D.

SmartState Chair in Cancer Drug Discovery
SmartState Center for Cancer Drug Discovery

SMARTSTATE® PROGRAM: Return on Investment

The primary mission of the SmartState® Program is to elevate the state's knowledge economy by generating high-skilled, high-wage jobs in South Carolina.

The SmartState® Program's established research centers help elevate the state's knowledge economy by creating public-private partnerships, supporting start-up firms, and helping to retain highly skilled workers. Each of these efforts results in the creation of jobs that are among the highest paid in South Carolina.

Following the 2008 recession, geographic regions with the highest rates of economic growth have typically had higher shares of their workforce employed in the knowledge economy. The skills associated with these jobs often include more advanced training in the fields of mathematics and science, complex problem solving, and creative and technological innovation. The commercialization of new technologies leads to economic growth and significant knowledge spillover effects.

As of 2017, the SmartState® Program is responsible for helping to create and support approximately 13,923 jobs in South Carolina, which are associated with \$2.8 billion in economic activity and \$755 million in labor income for South Carolinians that would not exist otherwise. Approximately 5,052 of these positions are knowledge economy jobs created directly through the SmartState® Program, with the 8,871 arising from additional spending activity generated through the economic multiplier effect.

The specific employment multiplier associated with these estimates is 2.5—for every ten knowledge economy jobs created through the SmartState® Program, an additional 15 jobs are created elsewhere in South Carolina. This multiplier effect is larger than the state average. Each new job created through the SmartState® Program increased total South Carolina employment by more than it would if that job had been created in another industry of comparable size.

The average annual salary associated with a SmartState job is \$74,815, roughly 82 percent higher than the average annual salary among all jobs in South Carolina. When examining the salaries of all jobs associated with the SmartState® Program, including those created through the economic multiplier effect, the average annual salary is estimated at \$53,610. This dollar amount is approximately 34 percent higher than the average annual salary among all South Carolina jobs. ●

“One of the driving forces behind regions in the United States that have experienced high-wage job creation in the 21st century is the presence of a strong and vibrant knowledge economy. Since 2002, the SmartState® Program has helped facilitate the development of South Carolina's knowledge economy, and in the process, has generated nearly 14,000 jobs with annual salaries that pay significantly above the state average. As of 2017, the SmartState® Program is responsible for helping to create and support approximately 13,923 jobs in South Carolina, which is associated with nearly \$2.8 billion in economic activity and \$755 million in labor income for South Carolinians that would not exist otherwise.”

DR. JOSEPH VON NESSEN

Research Economist
Darla Moore School of Business,
University of South Carolina

3

Research Universities
Clemson, MUSC, USC

6

Industry Clusters¹

51

SmartState® Centers of
Economic Excellence

71

SmartState Endowed
Chairs appointed
(of the 85 created)

\$197.6_M

State Funds Invested²

\$2.8_B

Return on Investment³

13,923

Total Employment (All jobs)³

\$74,815

Average Salary of a Knowledge Economy Job³

79

Start-ups and Corporate Relocations⁴

1 Industry-focused research is conducted in six areas of global importance: Advanced Materials and Nanotechnology, Automotive and Transportation, Biomedical, Energy, Information Science, and Pharmaceutical.

2 Includes \$180 million from the State Education Lottery appropriations and \$17.6 million accrued interest from SmartState® Program endowment.

3 The figures reported are from the November 2017 Economic Impact of the SmartState® Program analysis conducted by the Darla Moore School of Business. Of the total 13,923 jobs, 5,052 are knowledge economy jobs created directly through the SmartState® Program, including 624 SmartState personnel, 1,287 start-up company and corporate relocation personnel, 30 alumni placed with in-state employers, and 3,141 employed through Extramural Research Funding. The remaining 8,871 jobs are indirect employment arising from the economic multiplier effect. For more information about the return on investment, see page 12.

4 See page 14 for a listing of investors, start-ups and corporate relocations.

Investors, Start-ups, and Corporate Relocations in SC

CORPORATE AND ORGANIZATIONAL INVESTORS

More than three dozen companies have invested \$500,000 or more in the SmartState® Program.

- Abney Foundation
- BASF
- Bank of America Foundation
- Biomass Gas & Electric
- BlueCross BlueShield Foundation of SC
- BMW
- Comporium Group
- Daniel Island Company
- Dialysis Clinics, Inc.
- Duke Energy Foundation
- Electric Cooperatives of South Carolina
- Fluor Corporation
- Force Protection Industries
- General Atomics
- George B. Sibert Annuity
- GlaxoSmithKline
- Greenville Hospital System
- Health Sciences South Carolina
- J.E. Serrine Foundation
- Kellogg Foundation
- Kentwool
- Michelin
- Okuma
- Palmetto Health
- PalmettoNet
- Research to Prevent Blindness
- Robert Wood Johnson Foundation
- Samuel Freeman / Donaldson Charitable Trust
- Santee Cooper
- Smith & Nephew
- Spartanburg Regional Healthcare System
- The Duke Endowment
- The Spaulding Paolozzi Foundation
- Timken
- Toyota
- Volvo
- Westinghouse
- ZF

START-UP COMPANIES

Start-up companies founded as a result of research at USC, MUSC, and Clemson University:

- Advanced Photonic Crystals
- Career Care Solutions
- Cephos
- Cicadia
- Clinacuity
- Closing the Gap in Healthcare, Inc.
- Coastal Focus Market
- DF Werke, LLC
- Doxy.me
- eCom
- Fibro Therapeutics, Inc.
- First String Research
- GeoMat, LLC
- Hydrogen Hybrid Mobility, LLC
- ImmoMod, Inc.
- Inquisatex Epitherapeutics, LLC
- IntrusinMyFamily.com
- MagAssemble, LLC
- MicroVide
- MitoChem Therapeutics, LLC
- MitoHealth
- Neuroene Therapeutics
- NextGenEn
- NXT
- Oncology Analytics
- Palmetto Fuel Cell Technologies, LLC
- Parallel Permeation, Inc.
- Patient Guided Health Solutions, LLC
- Perfect Mixing, LLC
- Protara, LLC
- SAGE Energy Solutions
- Schnellgen, Inc.
- SemiAllogen, Inc
- SimTunes, LLC
- Smart Innovations, LLC
- South Carolina Science Solutions, LLC
- Specialty & Custom Fibers, Inc.
- Tetramer Technologies
- Vortex Biotechnology
- Zeriscope, Inc.
- 52 Inc.

CORPORATE RELOCATIONS

Companies that have relocated to South Carolina to benefit from the expertise, resources, and graduates in the SmartState® Program:

- American Titanium Works (ATW) Manufacturing
- American Titanium Works (ATW) Technology Center
- BMW Information Technology Research Center (ITRC)
- CADFEM U.S.*
- Charge2Target
- CleanEnergy
- COE Optics
- Computech*
- Cooliemon Technologies*
- DreamWeaver*
- EHD Tech
- Environment and Health Inc. (EHG)
- Esys Automation
- Fields Group, LLC.*
- Focus Chemicals*
- FSI - Advanced Research
- Greenway Energy, LLC
- In-tech
- Innoventure
- IndySoft
- Intec U.S. Inc.
- International Mold Co.
- JTEKT Technology Center
- Mallet Technology*
- Michelin
- Michelin Incubator
- Mumford Industries*
- OmniSource
- Proterra, Inc.
- Roding*
- Sage Automotive Interiors*
- SCRA
- Senex Biotechnology, Inc.
- Simpack, Inc.
- ThermoPur Technologies*
- Tigges*
- Toho Tenax*
- Trulite

* In May 2012, CU-ICAR (Clemson University International Center for Automotive Research) opened the doors to the Center for Emerging Technologies (CET) facility, its first multi-tenant building. CET provides office, administrative, and laboratory space for transportation, technology, and energy sectors. These companies have positioned themselves on the CU-ICAR campus to be close to the SmartState Endowed Chairs and their research teams.

Ten SC Universities and Colleges Receive Record \$20 Million Grant to Enhance Advanced Materials and Manufacturing Research

The SmartState® Program will be well represented by the three top research universities and SmartState Endowed Chairs.

In September, the National Science Foundation (NSF) made its highest ever sponsored award to South Carolina institutions of higher learning, presenting a \$20 million, five-year grant to a statewide consortium of advanced materials researchers and educators. The grant, from the NSF's Established Program to Stimulate Competitive Research (EPSCoR), will establish a new initiative called Materials Assembly and Design Excellence in South Carolina, or MADE in SC.

This unique collaboration unites 10 South Carolina institutions of higher education to lead the way in advanced materials research and development, build capacity of existing South Carolina industries and attract new companies. Dr. Prakash Nagarkatti, University of South Carolina Vice President for Research, is serving as the principal investigator and project director on the award. MADE in SC partners include:

- Claflin University
- Clemson University
- College of Charleston
- Florence-Darlington Technical College
- Furman University
- Medical University of South Carolina
- South Carolina State University
- University of South Carolina
- USC Beaufort
- Winthrop University

The MADE in SC consortium will engage in advanced materials research and development (R&D), create a pipeline of highly trained workers to enter South Carolina's advanced manufacturing industry and increase the capacity for economic growth and vitality in the state.

The R&D component will focus on materials discovery and optimization with researchers concentrating on three types of high demand materials: optical and magnetic materials, stimuli-responsive polymers and interactive biomaterials. This effort will be bolstered by recruitment of 17 new research faculty members in key roles at Clemson, MUSC, USC, USC Beaufort and SCSU. The grant will enable investment in new research infrastructure at these institutions that will be available to students and faculty researchers from all South Carolina colleges and universities.

The workforce development portion of the award involves development of new undergraduate degree programs at USC Beaufort and the College of Charleston, and expanded curricula at Claflin, Furman, Winthrop, and USC to create a new pipeline of highly skilled workers from colleges and universities to industry. The grant also provides funding for summer programs to train high school teachers to better prepare students for a future in advanced materials and manufacturing. ●

SmartState Endowed Chairs Participating in the MADE in SC Grant

DR. BRIAN BENICEWICZ, USC

SmartState Center for Polymer Nanocomposites

DR. WOLFGANG DAHMEN, USC

SmartState Center for Data Analysis, Simulation, Imaging and Visualization

DR. STEPHEN A. DUNCAN, MUSC

SmartState Center for Regenerative Medicine

DR. BRUCE GAO, CLEMSON

SmartState Center for Advanced Tissue Biofabrication

DR. JOCHEN LAUTERBACH, USC

SmartState Center for Strategic Approach to the Generation of Electricity

DR. MAREK URBAN, CLEMSON

SmartState Center for Advanced Fiber-Based Materials

“Advanced materials are crucial to industry in every corner of South Carolina. Growing our talent pipeline, and ramping up our ability to invent new components that will help companies create faster, lighter, more durable products that consumers want is smart business. By building capacity in a network of ten colleges and universities throughout South Carolina, our communities will become even more attractive to businesses looking for a new location with sustainable growth potential.”

BOBBY HITT

Secretary

South Carolina Department of Commerce

SMARTSTATE PROFILE

Dr. Marvella Ford



Founded in 1896, South Carolina State University (SCSU) has played a key role in the education of African-Americans in the state and nation. With Dr. Marvella Ford's appointment as the SmartState Chair in Cancer Disparities, SCSU's first endowed chair; and the award of a \$6.2 million grant from the National Institutes of Health—the Medical University of South Carolina received \$6.3 million as part of the same grant—SCSU is poised to become a national leader in cancer health disparities research and transformer of health in the black community. The prospect makes Ford very proud.

Dr. Marvella Ford never knew her grandparents; all four had passed before she was born. When she asked about their deaths, her parents had no answers. "The Depression was very difficult for rural African-Americans. If you had a doctor, communications weren't great. African-American families often didn't know why loved ones died," explains Ford.

By her 40th birthday, Ford had lost both parents to heart disease. She was diagnosed with breast cancer twice. Rather than be defeated, Ford took these experiences as a challenge, saying, "I can't change the past, but I can change the future."

Recognized as an expert in health disparities and cancer prevention research, in July 2017 Ford was named the SmartState Endowed Chair in Cancer Disparities at South Carolina State University. She is the first endowed chair in the historically black university's history. Ford retained her faculty appointment at the Medical University of South Carolina (MUSC), where she also serves as associate director of population sciences and cancer disparities at the Hollings Cancer Center.

Ford sees her new role as an honor and opportunity to lead research that addresses prostate cancer disparities in South Carolina, where African-American men are three times more likely to die from this disease compared to their white counterparts. "These disparities likely include social, economic and biological factors. I will be developing and testing interventions, based on these factors, to improve prostate cancer outcomes for African-American men."

Ford began collaborating with SCSU in 2010, when she and Dr.

Judith Salley-Guydon, chair of SCSU's Department of Biological and Physical Sciences, submitted a proposal to create the South Carolina Cancer Disparities and Research Center (SC CaDRe) to facilitate collaboration between SCSU, MUSC and the University of South Carolina. The proposal received funding in 2011. Other federal funding has since been received by MUSC, in collaboration with SCSU and two other South Carolina historically black colleges, Claflin University and Voorhees College.

In late September 2017, the National Institutes of Health/ National Cancer Institute awarded additional funds for SC CaDRe: a \$6.3 million grant to MUSC and a \$6.3 million grant to SCSU. The new grants will support three cores focused on addressing prostate cancer disparities: research and education, planning and evaluation, and community outreach. The SC CaDRe is now recruiting participants from the Hollings Cancer Center and Mabry Cancer Center at the Regional Medical Center in Orangeburg for three research and pilot programs looking at novel prostate cancer interventions that include exercise and drugs.

With her new chair, Ford believes she is well positioned to transform South Carolina. "The SmartState® Program is all about changing the present and the future. Our work will impact generations to come. I want families to enjoy each other longer."

Since her recruitment to MUSC in 2005, Ford has been awarded more than \$27.5 million in grants from the National Cancer Institute, National Institute on Minority Health and Health Disparities, Department of Defense, and Centers for Disease Control and Prevention. ●



MARVELLA FORD, PH.D.
SmartState Chair in Cancer Disparities
SmartState Center for Prostate Cancer Disparities

SMARTSTATE PROFILE

Dr. Laine Mears



Advanced manufacturing is one of the anchors of South Carolina's economy, the source of high-paying careers. Keeping up with the demand for employees with the knowledge required by today's manufacturing environments is one of the issues being addressed by Dr. Laine Mears, the BMW Endowed Chair in Automotive Manufacturing at Clemson University. With more than ten years of experience in the global automotive industry, Mears is an expert in how manufacturers use sensors and the tremendous amount of data generated to optimize operations, including how robots and people interact. He is working closely with BMW and other South Carolina Manufacturers to solve current and future challenges, including educating the workforce of the future.

Since being named the BMW SmartState Chair in Advanced Manufacturing in 2016, Dr. Laine Mears has operated under the mantra to "think big." He points to former Governor Carroll Campbell, BMW, and Clemson University whose big idea led to the creation of CU-ICAR, Clemson's internationally recognized automotive research campus, as his inspiration. Says Mears, "If you're not thinking big, go back to your office. You can spend as much time on a small project as you can on a big idea that can change the world. And that's what we're doing at Clemson, thinking big!"

Mears certainly has the opportunity to change the world thanks to the support of BMW, a global automotive leader known for cutting edge technology. He is in talks with BMW Global on a number of projects and routinely meets with BMW leaders of manufacturing and engineering on collaborative projects, some involving rapid response solutions to issues on BMW's production floor and others involving multi-year, ongoing research. Mears credits his position as an endowed chair for the opportunity to impact the global automotive industry. "The SmartState® Program has opened doors for Clemson, our students and myself."

Among the issues Mears is addressing for BMW is the balance of automation and people. The trend in manufacturing is to replace people with robots to improve efficiency and create foolproof processes. But as robots appear on the factory floor, employees can become unsure about their jobs. Mears says people remain very important in manufacturing. For example, experienced industrial maintenance workers can diagnose problems with a machine based on sounds or vibrations. "This knowledge is not easily replaced with a sensor and artificial intelligence is still far from what an experienced technician can achieve," says Mears.

BMW is now looking at collaborative robotics where humans and robots work side by side. This requires workers with higher cognitive skills such as problem solving and decision-making as well as experience in data analysis. Such skills are needed among workers programming robots as well as those in industrial maintenance.

According to Mears, this shift in workforce requirements has created huge opportunities for people with the right skills and led to a shortage of workers. He says that by 2025 the United States will lack the workforce to fill two million open manufacturing jobs. However, attracting students to manufacturing is challenging, largely because they are not aware of the sophistication of today's plants and the high salary potential. To counter this, Mears is overseeing a new program between Clemson and the Greenville Tech Center for Manufacturing Innovation (CMI).

"What we're doing is setting up a prototype vehicle manufacturing line at Greenville Tech that teams Clemson researchers with technical college students. As we develop new manufacturing processes, we will vet them with the Tech students. Once our innovations are proven, they become part of the curriculum, which prepares students for high-tech careers in manufacturing."

The program is a win for everyone, Mears says. "The CMI Advanced Manufacturing Program will graduate 40 students a year, but each manufacturer like BMW may need ten times that. Growing innovative, collaborative education programs like this will help South Carolina meet companies' demands for workers with the technical knowledge required of advanced manufacturing. I thank the SmartState® Program for driving big ideas like this into success stories." ●



LAINE MEARS, PH.D.

BMW Endowed Chair in Automotive Manufacturing
SmartState Center for Automotive Manufacturing

SMARTSTATE® PROGRAM Centers And Endowed Chairs

The work of South Carolina's SmartState Centers is exciting, groundbreaking, and of critical importance to the state, nation and world. These Centers, which align with industries in South Carolina, help elevate the state's economy and quality of life. What follows is an overview of each Center.

Program totals reported as of November 2017. In cases of joint proposals, Centers awarded by an institution are tallied by the fiscal agent. Endowed chairs are tallied based on the assigned institution. USC's assigned endowed chairs include one joint appointment with MUSC and Clemson. On the pages that follow, information about each SmartState Center includes the date the center was approved, the institution(s) awarded, the state award

amount that must be matched with an equal amount of non-state investment, the appointed endowed chair(s) as of November 2017, reported extramural research funding (federal and private awards) above the match, and a brief description of the research focus. Centers are grouped by industry cluster. For updated information on centers and program totals, contact the S.C. Commission on Higher Education or visit SmartStateSC.org.

- 51** SmartState® Program Centers Awarded
- 85** SmartState Endowed Chairs Created
- 71** SmartState Endowed Chairs Appointed
- 14** SmartState Endowed Chairs Remaining to be Appointed



- 13** Awarded
- 16** Created
- 13** Appointed
- 3** Remaining



- 18** Awarded
- 28** Created
- 25** Appointed
- 3** Remaining



- 20** Awarded
- 41** Created
- 33** Appointed
- 8** Remaining



Advanced Materials & Nanotechnology

ADVANCED FIBER-BASED MATERIALS*

Award Date: 2006

State Award Amount: \$4 million

University: Clemson

Endowed Chair(s):

Dr. Marek Urban
*J.E. Sirrinc Foundation Endowed Chair in
Advanced Fiber-Based Materials*

Corporate Partner(s):

J.E. Sirrinc Textile Foundation

External Funding Above Match:

\$14.7 million

Research Focus: To provide the vehicle for repositioning existing research and manufacturing resources to support new industrial and entrepreneurial opportunities based on advanced polymeric-based materials.

ENVIRONMENTAL NANOSCIENCE AND RISK*

Award Date: 2008

State Award Amount: \$3 million

University: USC

Endowed Chair(s):

Dr. Jamie Lead

External Funding Above Match:

\$4.5 million

Research Focus: Understand the fundamental properties of nanomaterials and nanomaterials-environment interaction and use these principles to understand and help reduce impacts of nanomaterials as used as well as develop and innovate nanotechnological applications.

EXPERIMENTAL NANOSCALE PHYSICS*

Award Date: 2003

State Award Amount: \$4 million

University: USC

Endowed Chair(s):

USC is recruiting one endowed chair.

External Funding Above Match:

\$6 million

Research Focus: Perform basic and applied research of potential spintronic optoelectronic and nanoelectronic devices and/or materials for future applications in information processing, high-speed, high-density electronics, and bio, chemical and radiation sensing.

MULTIFUNCTIONAL MATERIALS & STRUCTURES (MFMS)*

Award Date: 2013

State Award Amount: \$2 million

University: USC

Endowed Chair(s):

Dr. Michel van Tooren

External Funding Above Match:

\$6 million

Research Focus: The development and supply of engineered materials for high technology industries such as aerospace by providing a foundation of research and development that will enable and enhance growth in the engineered materials field. Specific examples of research and development include: Lightning strike and EMF management, structural integrity, energy storage, essential power for commercial aircraft, and multi-physics-based micro/nano mechanics of dielectric materials.

OPTICAL MATERIALS/PHOTONICS*

Award Date: 2004

State Award Amount: \$5 million

University: Clemson

Endowed Chair(s):

Dr. John Ballato
*J. E. Sirrinc Textile Foundation Endowed Chair
in Optical Fiber*

Corporate Partner(s):

J.E. Sirrinc Textile Foundation

External Funding Above Match:

\$24.9 million

Research Focus: Conduct optical and photonic materials research, particularly as relates to advanced optical fibers and fiber-based devices, and recruit and mentor graduate students with a focus on domestic scholars. Identify and foster the latest technologies and initiate partnerships with top national research universities and laboratories, aid South Carolina industry and economic development partners in the transfer of technology from Clemson to the public sector, and participate in the recruitment of optical technology firms to South Carolina.

POLYMER NANOCOMPOSITES*

Award Date: 2004

State Award Amount: \$3.5 million

University: USC

Endowed Chair(s):

Dr. Brian Benicewicz
Materials Science & Engineering

Corporate Partner(s):

Michelin North American, BASF, U.S. Navy, PBI Performance Products

External Funding Above Match:

\$17.3 million

Research Focus: Development of synthetic tools needed to precisely control the environment or interface between nanoparticles and polymer matrix applicable to optics, electronics, biological, medical, and structural material applications.

* Graduated Center

Once a center has reached a point of full operability, the SmartState Review Board has the authority to graduate SmartState centers. A center must meet the requirements in the following key areas to be considered graduated: non-state match; all draw downs; endowed chairs and key personnel; initiatory programmatic activities have been achieved; the most recent annual report cites demonstrable programmatic activity; and match certification. Once a center is graduated, the majority of fiscal and administrative oversight responsibilities are transferred to the center's lead fiscal institution. Certain accountability and reporting obligations are retained by the graduated center.

Automotive & Transportation

AUTOMOTIVE DESIGN AND DEVELOPMENT*

Award Date: 2004

State Award Amount: \$5 million

University: Clemson

Endowed Chair(s):

Dr. Zoran Filipi
Timken Endowed Chair in Automotive Design & Development

Corporate Partner(s):

Hertz Corporation, Duke Energy

External Funding Above Match:

\$10 million

Research Focus: Focuses on the research and design of advanced powertrains for internal combustion engines and hybrid and electric vehicles, along with lightweight design and materials, functional integration and structural dynamics for vehicles.

AUTOMOTIVE MANUFACTURING*

Award Date: 2003

State Award Amount: \$5 million

University: Clemson

Endowed Chair(s):

Dr. Laine Mears
BMW Endowed Chair in Automotive Manufacturing

Corporate Partner(s):

BMW

External Funding Above Match:

\$15.9 million

Research Focus: Seeks to reinvent the vehicle production system through developing processes inspired by car designs (transitioning from Design-for-Manufacturing thinking to Manufacturing-for-Design), and augmenting existing process capital through smarter model-based control and applying energy fields to overcome material limitations. The guiding goals of this research are to improve productivity, reduce downtime, enhance quality, and more effectively integrate the human to the emerging digital information network.

AUTOMOTIVE SYSTEMS INTEGRATION*

Award Date: 2003

State Award Amount: \$5 million

University: Clemson

Endowed Chair(s):

Dr. Christiaan Paredis, Clemson
BMW Endowed Chair in Automotive Systems Integration

Corporate Partner(s): BMW, Mazda,

GM and others

External Funding Above Match:

\$5 million

Research Focus: Automotive diagnostics and prognostics, sustainable mobility, concepts, methods and tools. Deriving a simple, flexible energy management control strategy for plug-in hybrid electric vehicles.

SUPPLY CHAIN OPTIMIZATION AND LOGISTICS*

Award Date: 2006

State Award Amount: \$2 million

University: Clemson

Endowed Chair(s):

Dr. Scott Mason
Fluor Endowed Chair in Supply Chain Optimization & Logistics

Corporate Partner(s): Fluor

External Funding Above Match:

\$11.2 million

Research Focus: Interdisciplinary research addressing the multifaceted problems associated with supply chains. Deliver tangible supply chain optimization and logistics products and services through theoretical and applied research.

VEHICLE ELECTRONIC SYSTEMS INTEGRATION*

Award Date: 2004

State Award Amount: \$3 million

University: Clemson

Endowed Chair(s):

Dr. Venkat Krovi
Michelin Endowed Chair in Vehicle Electronic Systems Integration

Corporate Partner(s):

Michelin

External Funding Above Match:

\$3.9 million

Research Focus: Research to enable intra-vehicle and V2X automation, at subsystem, system, and system-of-systems levels, for automotive and vehicular applications.





Biomedical

ADVANCED TISSUE BIOFABRICATION

Award Date: 2008

State Award Amount: \$5 million

Universities: MUSC, USC, Clemson

Endowed Chair(s):

Dr. Bruce Gao, Clemson

Endowed Chair in Biofabrication Engineering

MUSC and USC are recruiting Endowed Chairs in *Biofabrication Biology*.

Research Focus: Develop innovative technologies and approaches that will enable repair, replacement, or restoration of diseased cells, tissues and organs.

BRAIN IMAGING

Award Date: 2003

State Award Amount: \$5 million

Universities: USC, MUSC

Endowed Chair(s):

Dr. Chris Rorden, USC

Dr. Joseph Helpert, MUSC

MUSC is recruiting one additional endowed chair.

External Funding Above Match:
\$38.9 million

Research Focus: Creating a world-class brain imaging center. Initiated the first study using transcranial magnetic stimulation (TMS). Combined with functional MRI, TMS provides a short strong magnetic field useful for studying how the brain works. Specific studies include stroke-related brain injury and MRI physics techniques for clinical and neuroscience research.

CHILDHOOD NEUROTHERAPEUTICS

Award Date: 2006

State Award Amount: \$5 million

Universities: USC, MUSC

Endowed Chair(s):

Dr. Jeffery Twiss, USC

Child and Adolescent Neurochemistry

Dr. Manuel Casanova, USC

Translational Clinical Research

MUSC is recruiting one endowed chair in *Neurodevelopmental Disorders*.

External Funding Above Match:
\$12 million

Research Focus: Prevention of brain damage in premature infants and curing infant brain diseases through cellular engineering. Also working on cognitive behavioral tasks in transgenic mice to determine if therapeutics can improve functional development outcomes, which may someday help children with ADHD.

CLINICAL EFFECTIVENESS AND PATIENT SAFETY*

Award Date: 2006

State Award Amount: \$5 million

Universities: MUSC, USC

Endowed Chair(s):

Dr. John Schaefer, MUSC

Lewis Blackman Endowed Chair for Patient Simulation & Research for Health Sciences South Carolina

Dr. Jihad Obeid, MUSC

Biomedical Informatics

Dr. Cynthia Corbett, USC

Endowed Chair in Chronic Care Management

External Funding Above Match:
\$12.1 million

Research Focus: Quality and safety of patient care, and improving the medical informatics aspects of data acquisition and the evaluation of health information technology on the quality and safety of clinical care processes and outcomes. The Center also focuses on developing South Carolina as

a training center for physicians and other health professions using human simulators and sophisticated software-based training scenarios.

EFFECTIVENESS RESEARCH IN ORTHOPEDICS (CERoTho)

Award Date: 2007

State Award Amount: \$5 million

University: USC

Endowed Chair(s):

Dr. John Brooks

Corporate Partner(s):

Smith & Nephew

External Funding Above Match:
\$16.2 million

Research Focus: Medical health needs in orthopaedic disorders, exercise and sports-related injury prevention, treatment, and rehabilitation. The Center investigates the biologics of tissue-engineered materials and implantable devices to find solutions to musculoskeletal maladies.



Biomedical

HEALTHCARE QUALITY*

Award Date: 2007

State Award Amount: \$5 million

Universities: USC, MUSC

Endowed Chair(s):

Dr. Les Lenert, MUSC
Medical Bioinformatics

Dr. Xiaoming Li, USC
Translational Clinical Research

Corporate Partner(s):

The Duke Endowment

External Funding Above Match:

\$18.3 million

Research Focus: Creating a unique and comprehensive clinical data store that collects data from providers, enhances data usability, and makes it available in an easily accessible form for participants to use for clinical improvement and research purposes.

HEALTH FACILITIES DESIGN AND TESTING

Award Date: 2007

State Award Amount: \$2 million

University: Clemson, MUSC

Endowed Chair(s):

Dr. Anjali Joseph, Clemson
Architecture & Health Research

Dr. Kenneth Catchpole, MUSC
Clinical Practice and Human Factors

External Funding Above Match:

\$4.1 million

Research Focus: The impact of the built environment on health and healthcare delivery and the creation of architectural settings that promote health, safety, and the wellbeing of all users.

INFLAMMATION AND FIBROSIS RESEARCH*

Award Date: 2010

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. Carol Feghali-Bostwick
Kitty Trask Holt Endowed Chair for Scleroderma Diseases

Dr. Betty Tsao
Inflammation Research

External Funding Above Match:

\$28.8 million

Research Focus: Develop new therapies and education programs for inflammatory and fibrosing rheumatic diseases such as lupus, scleroderma, and rheumatoid arthritis.

MARINE GENOMICS*

Award Date: 2003

State Award Amount: \$4 million

Universities: MUSC, College of Charleston

Endowed Chair(s):

Dr. Gavin Naylor, MUSC
Bioinformatics

MUSC is recruiting one endowed chair.

External Funding Above Match:

\$9.5 million

Research Focus: Monitoring and predicting the impact of environmental changes on marine biosystems, which can, in turn, affect human health. Specific areas of study include environmental causation in wildlife, human disease and susceptibility, and mapping variability in genomes and populations; as well as research of shark and ray species.

MOLECULAR PROTEOMICS IN CARDIOVASCULAR DISEASE AND PREVENTION*

Award Date: 2006

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. Sheldon E. Litwin
Countess Alicia Spaulding Palozzi Chair in Cardiovascular Imaging

Dr. Thomas G. DiSalvo
Volpe SmartState Endowed Chair in Cardiovascular Biomarker Development for Diagnosis & Prevention

External Funding Above Match:

\$7.6 million

Research Focus: Translation advances in basic bench science to clinical bedside care to improve the health care of the citizens of South Carolina. Priorities include diagnostic techniques, therapeutic management strategies, relations of protein signatures to clinical outcomes for risk assessment, and treatment of disease manifestation.

NEUROSCIENCES

Award Date: 2003

State Award Amount: \$3 million

University: MUSC

Endowed Chair(s):

Dr. Christopher Cowan
William E. Murray Endowed Chair in Neuroscience

MUSC is recruiting the *Josephine Tucker Morse Endowed Chair in Parkinson's Disease*.

External Funding Above Match:

\$17.8 million

Research Focus: Brain neuromodulatory systems and their roles in cognitive performance, drug abuse, sleep and affective disorders. Other areas of research are movement disorders such as Ataxia, Choro, Bradykinesia and multiple system atrophy.





Biomedical

PROSTATE CANCER DISPARITIES

Award Date: 2008

State Award Amount: \$3.6 million

University: MUSC, USC, SCSU

Endowed Chair(s):

Dr. Chanita Hughes-Halbert, MUSC
AT&T Distinguished Endowed Chair in Cancer Equity in Cancer Disparities

Dr. Marvella Ford, MUSC/SCSU
Cancer Disparities

USC is recruiting an endowed chair in *Cancer Disparities*.

Corporate Partner(s): AT&T Foundation

External Funding Above Match:
\$44.9 million

Research Focus: Facilitate statewide partnerships in cancer prevention and control research, clinical trials, and training to significantly decrease disparities in prostate cancer incidence and mortality in South Carolina.

PROTEOMICS*

Award Date: 2003

State Award Amount: \$4 million

University: MUSC

Endowed Chair(s):

Dr. Richard Drake

Dr. Anand S. Mehta

External Funding Above Match:
\$22.5 million

Research Focus: Develop and use high-end analytical technologies to understand the biologic profile of protein expression in health and disease. Developing enzyme-based analytical methods to effectively detect biomolecules in tissues and tissue microarray platforms.

REGENERATIVE MEDICINE*

Award Date: 2004

State Award Amount: \$5 million

Universities: MUSC, USC, Clemson

Endowed Chair(s):

Dr. Martin Morad, USC
BlueCross BlueShield of SC Foundation Chair in Cardiovascular Health

Dr. Stephen Duncan, MUSC
Regenerative Medicine and Cell Biology

Dr. Jeremy Gilbert, Clemson
Hansjörg Wyss Endowed Chair in Bioengineering

External Funding Above Match:
\$43.5 million

Research Focus: Regenerative medicine approach for cardiovascular applications and provide expertise in clinical trials, statistics and/or assay development. Application of regenerative medicine and tissue engineering approaches to orthopaedic and neural diseases. Regeneration of tissue and organs for repairing, replacing, and maintaining organ function.

RENAL DISEASE BIOMARKERS

Award Date: 2008

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. Deepak Nihalani
Renal Biomarkers

MUSC is recruiting one endowed chair in *Translational Nephrology Research*.

External Funding Above Match:
\$7.1 million

Research Focus: Identifying biomarkers that identify or predict prognosis for acute kidney injury, diabetic neuropathy, lupus nephritis, and focal segmental glomerulosclerosis.

SENIORSMART®

Award Date: 2007

State Award Amount: \$5 million

Universities: USC, Clemson

Endowed Chair(s):

Dr. Sue Levkoff, USC
SmartHOME®

Dr. Julius Fridriksson, USC
SmartBRAIN™

Clemson is recruiting one endowed chair in *SmartWHEELS™*.

External Funding Above Match:
\$14.6 million

Research Focus: Three areas of research include: *SmartBRAIN™* (maintaining intellectual activity), *SmartWHEELS™* (independent mobility outside the home) and *SmartHOME®* (independent mobility inside the home) to foster independent living among seniors.



Biomedical

STROKE*

Award Date: 2007

State Award Amount: \$5 million

Universities: MUSC, USC

Endowed Chair(s):

Dr. Robert Adams, MUSC
Stroke

Dr. Mark Chimowitz, MUSC
Countess Alicia Paolozzi Endowed Chair in Translational Neurology

Dr. Souvik Sen, USC
Clinical Neurology

External Funding Above Match:

\$29.3 million

Research Focus: Enhancing stroke treatment, prevention, and recovery. This Center is developing new stroke-related therapeutics, drug discovery, and biotechnology, and is a leader in stroke telemedicine.

TECHNOLOGY CENTER TO ENHANCE HEALTHFUL LIFESTYLES*

Award Date: 2009

State Award Amount: \$3 million

Universities: USC, MUSC

Endowed Chair(s):

Dr. Frank Trieber, MUSC
Technology Applications for Disease Prevention, Management, and Risk Reduction

Dr. Delia West, USC
Technology Application for Health Behavior Change

External Funding Above Match:

\$18.5 million

Research Focus: Develop and test lifestyle interventions for improving health, preventing illness and managing chronic health problems caused by physical inactivity, poor diets, and other lifestyle behaviors.

TOBACCO-RELATED MALIGNANCY

Award Date: 2007

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. Nancy DeMore
BMW Chair in Cancer Research

MUSC is recruiting the *Burtschy Family Distinguished Endowed Chair in Lung Cancer Research*.

Corporate Partner(s):

BMW

External Funding Above Match:

\$56.4 million

Research Focus: Devoted to discovering tobacco-related malignancy biomarkers via clinical trials with a specific focus on tobacco-related cancers. Additionally, the Center is evaluating the specificity and sensitivity of novel biomarkers by molecular epidemiologic techniques across the diverse populations of South Carolina.

TRANSLATIONAL BIOMEDICAL INFORMATICS

Award Date: 2013

State Award Amount: \$2 million

University: MUSC

Endowed Chair(s):

Dr. Stephane Meystre

Research Focus: The new Center will provide expertise in translational biomedical informatics essential for cutting-edge, innovative methodologies to link genetic/genomic data with vast amounts of clinical data. The contributions of the center to data sharing/analysis will decrease cost and increase efficiency in research and healthcare delivery and provide a robust IT platform for industry partnerships and new company formation.

VISION SCIENCE

Award Date: 2005

State Award Amount: \$4.5 million

Universities: MUSC

Endowed Chair(s):

Dr. Baerbel Rohrer
Chair in Gene and Pharmaceutical treatment of Retinal Degenerative Diseases

MUSC is recruiting one endowed chair.

Corporate Partner(s):

Alcon Labs, Taligen, Alexion
Pharmaceuticals

External Funding Above Match:

\$26.2 million

Research Focus: New treatments for macular degeneration, development of new anti-glaucoma agents and innovations in cataract surgery. The Center also focuses on using advances in bioengineering and material sciences to improve the diagnosis, treatment, and prevention of eye diseases.





Energy & Alternative Fuels

CATALYSIS FOR RENEWABLE FUELS*

Award Date: 2005

State Award Amount: \$3 million

University: USC

Endowed Chair(s):

Dr. John Regalbuto

External Funding Above Match:

\$13.6 million

Research Focus: Developing catalysts that allow production of alternative fuels from renewable sources, thereby reducing dependence on imported oil and carbon fuel. The Center focuses on synthesizing inorganic catalysts for converting biomass to biofuels and synthesizing electrocatalysts for solar fuels and fuel cells.

GENERAL ATOMICS CENTER FOR THE DEVELOPMENT OF TRANSLATIONAL NUCLEAR TECHNOLOGY

Award Date: 2009

State Award Amount: \$3 million

University: USC

Endowed Chair(s):

Dr. Theodore Besmann
Energy and Nuclear Security

Corporate Partner(s):

General Atomics

External Funding Above Match:

\$22.1 million

Research Focus: The production of biofuels and coal to liquid fuels using nuclear process heat for more efficient production and the reduction of wastes associated with recycling of used fuel, seeking more long term strategies to manage used fuel, recovery of energy value in used fuel, and eliminating concerns over proliferation associated with recycling used fuel.

NUCLEAR SCIENCE AND ENERGY

Award Date: 2008

State Award Amount: \$3 million

University: USC

Endowed Chair(s):

Dr. Dan Gabriel Cacuci
Nuclear Power and Advanced Materials

Corporate Partner(s):

Duke Energy, Progress Energy, SCANA, Westinghouse

External Funding Above Match:

\$7.3 million

Research Focus: Performance, efficiency, and maintenance issues at existing and future nuclear power plants using expertise modeling and simulation related to nuclear fuels and materials.

SMART GRID TECHNOLOGY

Award Date: 2013

State Award Amount: \$5 million

University: Clemson

Endowed Chair(s):

Dr. Johan Enslin
Duke Energy Smart Grid Technology Chair

Corporate Partner(s):

Duke Energy

External Funding Above Match:

\$4.7 million

Research Focus: Develop technology to better plan and operate electric power systems.

SOLID OXIDE FUEL CELLS*

Award Date: 2006

State Award Amount: \$3 million

University: USC

Endowed Chair(s):

Dr. Kevin Huang, USC
Solid Oxide Fuel Cells

External Funding Above Match:

\$60.1 million

Research Focus: Develop solid oxide fuel cells for use in large, high-power systems such as industrial sites and electricity generating stations as well as for mobile power for computers, cell phones, and other electronics.

STRATEGIC APPROACHES TO THE GENERATION OF ELECTRICITY (SAGE)*

Award Date: 2007

State Award Amount: \$5 million

University: USC

Endowed Chair(s):

Dr. Jochen Lauterbach

External Funding Above Match:

\$12.7 million

Research Focus: Developing, improving, and advancing technologies to enhance the environmental performance of electricity production. Other work focuses on converting CO₂ to chemicals, fuel cell and hydrogen storage-related research, and chemical production from coal to biomass.



Information Science

CYBERINSTITUTE

Award Date: 2008

State Award Amount: \$2 million

University: Clemson

Endowed Chair(s):

Clemson is recruiting the *C. Tycho Howle Endowed Chair in Collaborative Computing Environments*.

Corporate Partner(s):

Omnibond Systems, LLC

External Funding Above Match:

\$7.6 million

Research Focus: Connecting research and scholarship, particularly in interdisciplinary aspects of high-performance computing, networking, and data storage; the security of information systems and networks; human-computer interactions; interpretation; and visualization to the commercial sector via strategic industrial partnerships. Conduct research in conjunction with the Clemson University Cyber-Institute.

DATA ANALYSIS, SIMULATION, IMAGING, AND VISUALIZATION

Award Date: 2010

State Award Amount: \$2 million

University: USC

Endowed Chair(s):

Dr. Wolfgang Dahmen
Williams-Hedberg-Hedberg Chair of Mathematics

External Funding Above Match:

\$2.8 million

Research Focus: Develop technology for transforming data into knowledge concentrating on inline data processing, multi-sensor data acquisition, tissue modeling, atomic scale modeling, and bioimaging.

INNOVATION AND COMMERCIALIZATION

Award Date: 2004

State Award Amount: \$5 million

University: USC

Endowed Chair(s):

Dr. Laura B. Cardinal
Discovery and Innovation

Corporate Partner(s):

Fluor Foundation and Savannah River Nuclear Solutions LLC

External Funding Above Match:

\$19.8 million

Research Focus: The innovation, commercialization, and new venture development of research in the SmartState Centers, leading to technology commercialization and transfer activities in collaboration with business organizations and public sector stakeholders.

OPTOELECTRONICS*

Award Date: 2008

State Award Amount: \$2 million

University: Clemson

Endowed Chair(s):

Dr. Eric Johnson
PalmettoNet Endowed Chair in Optoelectronics

Corporate Partner(s):

Advanced Photonic Crystal, Tetramer Technologies

External Funding Above Match:

\$11 million

Research Focus: Improving devices, systems, and protocols used in high-speed optical communications networks.

SUSTAINABLE DEVELOPMENT*

Award Date: 2010

State Award Amount: \$4 million

University: Clemson

Endowed Chair(s):

Clemson is recruiting the *Thomas F. Hash '69 Endowed Chair in Sustainable Development*.

External Funding Above Match:

\$5.8 million

Research Focus: Developing new technologies to support real-time monitoring and management of natural and built environments through the Intelligent River® Project. The Center has created wireless sensor networks that can reliably monitor and transmit environmental data in near real time.

TOURISM AND ECONOMIC DEVELOPMENT*

Award Date: 2005

State Award Amount: \$2 million

University: USC

Endowed Chair(s):

Dr. Simon Hudson

Corporate Partner(s):

Rawle Murdy
US Travel Association (USTA)

External Funding Above Match:

\$500,998

Research Focus: Tourism is a \$17 billion industry in South Carolina. The Center conducts cutting-edge tourism and hospitality research initiatives that will improve South Carolina's competitiveness as a tourism destination.

URBAN ECOLOGY AND RESTORATION*

Award Date: 2006

State Award Amount: \$2 million

University: Clemson

Endowed Chair(s):

Dr. Robert F. Baldwin
Margaret H. Lloyd SmartState Chair in Urban Ecology

External Funding Above Match:

\$6.8 million

Research Focus: Generating scholarship by building collaborations in applied ecology and environmental science, habitat ecology and restoration, wetland and watershed management; conservation biology; private-public networks for conservation; payments for ecosystem services; urban ecology; environmental education; and by developing careers of young scientists and educators.



Pharmaceutical

CANCER DRUG DISCOVERY*

Award Date: 2005

State Award Amount: \$5 million

Universities: MUSC, USC

Endowed Chair(s):

Dr. John LeMasters, MUSC
*GlaxoSmithKline Distinguished
Endowed Chair*

Dr. Patrick Woster, MUSC
Medicinal Chemistry

Dr. Mark Hamann, MUSC
Charles & Carol Cooper Chair in Pharmacy

Dr. Mitzi Nagarkatti, USC
Structural Biology and Pharmacy

Corporate Partner(s):

GlaxoSmithKline

External Funding Above Match:

\$20.1 million

Research Focus: Advanced biomedical screening technologies to identify disease mechanisms and targets, and also screening drug candidates. Structural biology for target analysis, chemical biology for designing drug candidates, and advanced biomedical screening technologies.

CANCER STEM CELL BIOLOGY AND THERAPY*

Award Date: 2008

State Award Amount: \$5 million

Universities: MUSC, Clemson

Endowed Chair(s):

Dr. Zihai Li, MUSC
*Abney Endowed Chair Remembering Sally
Abney Rose*

Dr. Xue Zhong Yu, MUSC
Biomedical Engineering

External Funding Above Match:

\$22 million

Research Focus: Developing new technologies for isolating, growing, and manipulating cancer stem cells. This will enable the Center to find ways to use adult stem cells from bone marrow or organs to treat cancer.

GASTROINTESTINAL CANCER DIAGNOSTICS

Award Date: 2005

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. Carolyn Britten
*Charles Westerfield Coker Distinguished Chair
in Gastrointestinal Malignancy*

Dr. Gustavo Leone, MUSC
*Grace DeWolff Endowed Chair
in Medical Oncology*

Corporate Partner(s):

Roche Carolina, Bank of America

External Funding Above Match:

\$17 million

Research Focus: Clinical and translational gastrointestinal oncology and biomarker development and gastrointestinal (GI) malignancies. Bringing state-of-the-art translational medicine to all GI cancer patients in South Carolina, thereby decreasing the overall impact of cancer mortality and morbidity and closing disparity gaps throughout the state.

LIPIDOMICS, PATHOBIOLOGY AND THERAPY*

Award Date: 2009

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

Dr. J. Alan Diehl
Lipidomics & Pathobiology

Dr. Besim Ogretmen
Lipidomics Drug Discovery

External Funding Above Match:

\$36.3 million

Research Focus: Develop models for translational research and study of lipidomics and their pathobiology with an emphasis on cancer and inflammation.

MEDICATION SAFETY AND EFFICACY

Award Date: 2008

State Award Amount: \$2 million

Universities: MUSC, USC

Endowed Chair(s):

Dr. Charles Bennett, USC
*Frank P. and Josie M. Fletcher Professor
of Pharmacy*

External Funding Above Match:

\$6.1 million

Research Focus: Increasing drug safety and effectiveness, as well as decreasing medication errors by identifying the incidence and significance of adverse drug events.

TRANSLATIONAL CANCER THERAPEUTICS*

Award Date: 2004

State Award Amount: \$5 million

Universities: MUSC, USC

Endowed Chair(s):

Dr. Kenneth Tew, MUSC
*John C. West Endowed Chair
in Cancer Research*

Dr. Igor Roninson, USC
Drug Efficacy

External Funding Above Match:

\$31.8 million

Research Focus: Development of new approaches in cancer treatment, including the discovery and development of new drugs. Research also focuses on utilizing mouse models predisposed to cancer to study the impact of gene misregulation and therapeutic agents on tumor development, and the identification and inhibition of new cancer drug targets.

SMARTSTATE PROFILE

Dr. Jeffery Twiss



The University of South Carolina (USC) SmartState Chair in Childhood Neurotherapeutics, Dr. Jeffery Twiss, helped organize the inaugural South Carolina Autism and Neurodevelopmental Disorders (SCAND) Consortium held October 9, 2017 at the USC Alumni Center. Composed of members from USC, the Medical University of South Carolina, Clemson University, Palmetto Health, the USC School of Medicine Greenville, and Greenwood Genetics Center, the consortium is working to understand neurodevelopmental and autism disorders and support South Carolina families affected by these conditions. Twiss' research in neural development could bring a better understanding of autism and possibly restore neural function.

Much like a finely tuned automobile or airliner, the human body is governed by sophisticated circuitry that keeps it running smoothly. Connections between neurons within the brain and central nervous system are needed for every thought, movement and sensation. These connections form as the brain and spinal cord develop, establishing neural circuits. In infants, this circuitry is fairly simple, gaining in complexity with age and experiences.

When these circuits are disrupted by disease or trauma, brain and spinal cord functions are lost. Neurodevelopmental disorders similarly disrupt neural circuits. Autism is one of the conditions where disrupted neural circuits cause difficulty communicating, forming relationships with other people, and a tendency toward restricted interests and repetitive behaviors. With the number of diagnosed autism cases on the rise, the question arises: can these circuits be reestablished and normal brain function returned?

Twiss has invested 20 years in researching neural development and the brain's ability to regenerate and neurons to reconnect in cases of spinal cord or traumatic brain injury. "What we've found is that children's nervous systems are more "plastic"—able to change—than adults' and thus are better able repair and regenerate," he says.

Part of his research focuses on neural repair mechanisms, specifically on how to use these mechanisms to improve recovery after an injury of the nervous system. Long-range communication in the nervous system is provided through

axon processes that connect neurons with their targets. Disruption of this communication pathway, either through injury or disease, often results in permanent loss of function unless neural connections can be restored. Twiss' work seeks to restore neural function by finding the means to improve regeneration of axons. These general mechanisms also impact neural function, synaptic plasticity affecting memory and learning, and development.

"At one time we thought that neural regeneration was hopeless, but we kept at it. We now have identified a peptide that can accelerate regeneration and are working on a drug that can mimic how this works," he explains. "It's possible such a drug could help children with issues such as autism, as well as adults."

The other portion of his research focuses on how neural connections are formed during development of the brain. Of particular interest are interactions between gene products that help establish neural circuits and how changes in gene expression can be impacted by developmental disorders like autism. Twiss hopes to accelerate his lab's findings and to support that, has added two new faculty researchers.

"Parents of children with autism, the healthcare community, and educators are all very interested in our research as our findings could lead to a very different life for these children. That is what inspires us," Twiss says. The National Institutes of Health and the Dr. Miriam and Sheldon G. Adelson Medical Research Foundation are the major funders of Twiss' research. ●



JEFFERY TWISS, M.D., PH.D.

SmartState Chair in Childhood Neurotherapeutics
SmartState Center for Childhood Neurotherapeutics

SMARTSTATE® PROGRAM Endowed Chairs

The role of SmartState® Program Endowed Chairs is to serve as catalysts for the state's knowledge economy. Seventy-one chairs of 85 approved chairs have been filled at Clemson University, the Medical University of South Carolina, and the University of South Carolina across 51 SmartState Centers. The SmartState® Program welcomed six new endowed chairs this year: Dr. Cynthia Corbett, Dr. Marvella Ford, Dr. Bruce Gao, Dr. Gustavo Leone, Dr. Christiaan Paredis, and Dr. Kevin Huang.



ROBERT ADAMS
Stroke
MUSC



ROBERT F. BALDWIN
Urban Ecology and Restoration
Clemson



JOHN BALLATO
Optical Materials/Photonics
Clemson



BRIAN BENICEWICZ
Polymer Nanocomposites
USC



CHARLES BENNETT
Medication Safety and Efficacy
USC



THEODORE BESMANN
General Atomics
USC



CAROLYN BRITTEN
*Gastrointestinal Cancer
Diagnostics*
MUSC



JOHN BROOKS
*Effectiveness Research
in Orthopedics*
USC



DAN GABRIEL CACUCI
Nuclear Science and Energy
USC



LAURA B. CARDINAL
*Innovation and
Commercialization*
USC



MANUEL CASANOVA
Childhood Neurotherapeutics
USC



KENNETH CATCHPOLE
Health Facilities Design and Testing
MUSC



MARK CHIMOWITZ
Stroke
MUSC



CHRISTOPHER COWAN
Neurosciences
MUSC



WOLFGANG DAHMEN
*Data Analysis Simulation Imaging
and Visualization*
USC



NANCY DEMORE
Tobacco-related Malignancies
MUSC



J. ALAN DIEHL
*Lipidomics Pathobiology and
Therapy*
MUSC



THOMAS DISALVO
*Molecular Proteomics in
Cardiovascular Disease and
Prevention*
MUSC



RICHARD DRAKE
Proteomics
MUSC



STEPHEN A. DUNCAN
Regenerative Medicine
MUSC



JOHAN ENSLIN
Smart Grid Technology
Clemson



**CAROL FEGHALI-
BOSTWICK**
Inflammation & Fibrosis Research
MUSC



ZORAN FILIPI
*Automotive Design and
Development*
Clemson



MARVELLA FORD
Prostate Cancer Disparities
MUSC/SCTU



JULIUS FRIDRIKSSON
SeniorSMART®
USC



BRUCE GAO
Advanced Tissue Biofabrication
Clemson



JEREMY GILBERT
Regenerative Medicine
Clemson



MARK HAMANN
Cancer Drug Discovery
MUSC



JOSEPH HELPERT
Brain Imaging
MUSC



SIMON HUDSON
*Tourism and Economic
Development*
USC



CHANITA HUGHES-HALPERT
Prostate Cancer Disparities
MUSC



ERIC JOHNSON
Optoelectronics
Clemson



ANJALI JOSEPH
Health Facilities Design and Testing
Clemson



VENKAT KROVI
Vehicle Electronic Systems
Integration
Clemson



JOCHEN LAUTERBACH
Strategic Approaches to the
Generation of Electricity (SAGE)
USC



JAMIE LEAD
Environmental Nanoscience and
Risk
USC



JOHN LEMASTERS
Cancer Drug Discovery
MUSC



GUSTAVO LEONE
Gastrointestinal Diagnostics
MUSC



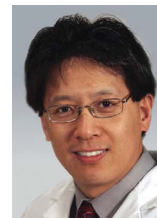
LES LENERT
Healthcare Quality
MUSC



SUE LEVKOFF
SeniorSMART®
USC



XIAOMING LI
Healthcare Quality
USC



ZIHAI LI
Cancer Stem Cell Biology and
Therapy
MUSC



SHELDON E. LITWIN
Molecular Proteomics in
Cardiovascular Disease and
Prevention
MUSC



SCOTT MASON
Supply Chain Optimization and
Logistics
Clemson



LAIN MEARNS
Automotive Manufacturing
Clemson



ANAND S. MEHTA
Proteomics
MUSC



STEPHANE MEYSTRE
Translational Biomedical
Informatics
MUSC



MARTIN MORAD
Regenerative Medicine
USC



MITZI NAGARKATTI
Cancer Drug Discovery
USC



GAVIN NAYLOR
Marine Genomics
MUSC



DEEPAK NIHALANI
Renal Disease Biomarkers
MUSC



JIHAD OBEID
Clinical Effectiveness and Patient Safety
 MUSC



BESIM OGRETMEN
Lipidomics Pathobiology and Therapy
 MUSC



CHRISTIAAN PAREDIS
Automotive Systems Integration
 Clemson



JOHN REGALBUTO
Catalysis for Renewable Fuels
 USC



BAERBEL ROHRER
Vision Science
 MUSC



IGOR RONINSON
Translational Cancer Therapeutics
 USC



CHRIS RORDEN
Brain Imaging
 USC



JOHN SCHAEFER
Clinical Effectiveness and Patient Safety
 MUSC



SOUVIK SEN
Stroke
 USC



KENNETH TEW
Translational Cancer Therapeutics
 MUSC



FRANK TRIEBER
Technology Center to Enhance Healthful Lifestyles
 MUSC



BETTY TSAO
Inflammation and Fibrosis Research
 MUSC



JEFFERY TWISS
Childhood Neurotherapeutics
 USC



MAREK URBAN
Advanced Fiber Materials
 Clemson



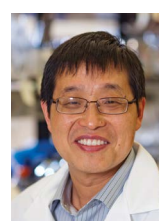
MICHEL VAN TOOREN
Multifunctional Materials & Structures
 USC



DELIA WEST
Technology Center to Enhance Healthful Lifestyles
 USC



PATRICK WOSTER
Cancer Drug Discovery
 MUSC



XUE ZHONG YU
Cancer Stem Cell Biology and Therapy
 MUSC

NOT PICTURED: Cynthia Corbett, Clinical Effectiveness & Patient Safety, USC and Dr. Kevin Huang, Solid Oxide Fuel Cells, USC.

SMARTSTATE PROFILE

Dr. Stephane Meystre



Buried within patients' electronic health records is a wealth of information that can be used to improve patient care and outcomes, fuel research, reduce health disparities, improve efficiency and the quality of care. Currently, the data exists as blocks of text, making the extraction of meaningful information tedious. Dr. Stephane Meystre is employing Natural Language Processing, a form of artificial intelligence, to transform this data dump into a treasure trove. He has founded a startup company, Clinacuity, to bring this important technology to market.

In the early 1960s, the Mayo Clinic was among the first health systems to adopt the use of electronic health records (EHR). By 2016, 96 percent of U.S. hospitals had adopted EHRs, replacing paper-based files of demographic and clinical data on patients with digital files. Biomedical informatics experts like Medical University of South Carolina's (MUSC) Dr. Stephane Meystre were pleased and overwhelmed by the near-perfect adoption rate: it didn't take long to realize difficulties with the quantity and format of data in EHRs.

"It truly was a data dump," says Meystre. "Information like patient demographics was easy to extract; however, most clinical information is in the form of unstructured text. This includes clinical notes, operative reports, pathology reports, orders, and discharge summaries. This data is extremely valuable, and health systems are mandated by the government to use the data in meaningful ways, but manually sifting through text to find important patient clinical information is highly inefficient."

Meystre's research as the SmartState Chair for the Translational Biomedical Informatics Center is focused on solving the global healthcare dilemma of unstructured data reuse. His area of expertise is Natural Language Processing (NLP), which combines the disciplines of computer science, artificial intelligence, and computational linguistics to enable computers to derive meaning from human or natural language input such as the data found in EHRs.

Meystre is developing NLP systems that make it easy to extract structured and coded information from clinical text for better patient care, improved healthcare management and effective clinical research.

"NLP can be used to extract pertinent data from the EHR in real time which gives a physician the information he needs without having to read through a patient's entire record. This is particularly useful for complex cases such as cancer patients and others who have multiple health issues," Meystre says. "It's also useful when a physician sees a patient for the first time. NLP gives the physician a summarized view of the patient's condition and treatments."

MUSC is using NLP at the Hollings Cancer Center in a pilot program that screens patients for eligibility for clinical trials at MUSC for their specific type of cancer. The oncologist is notified if there is a match. If successful, the program could lead to a large-scale pilot with the National Cancer Institute to identify trials anywhere in the world. MUSC researchers are also taking advantage of Meystre's work with pilot programs on treatment performance and quality measures assessment.

In 2012, Meystre founded a startup company, Clinacuity, to provide hospitals and physicians with the benefits of NLP technology. The company is developing an automated system for de-identifying clinical notes in EHRs and improve the availability of this text for secondary uses while protecting the confidentiality of patient data. Clinacuity, already a MedTech Innovator Top 100 company, was selected in October 2017 to participate in the National Institutes of Health's Commercialization Accelerator Program for 2017-2018.

Meystre is pleased with the progress being made through his SmartState Endowed Chair and Clinacuity. "We must have systems that make it easy for physicians and health systems to use data. We are scratching the surface of the potential of EHRs." ●



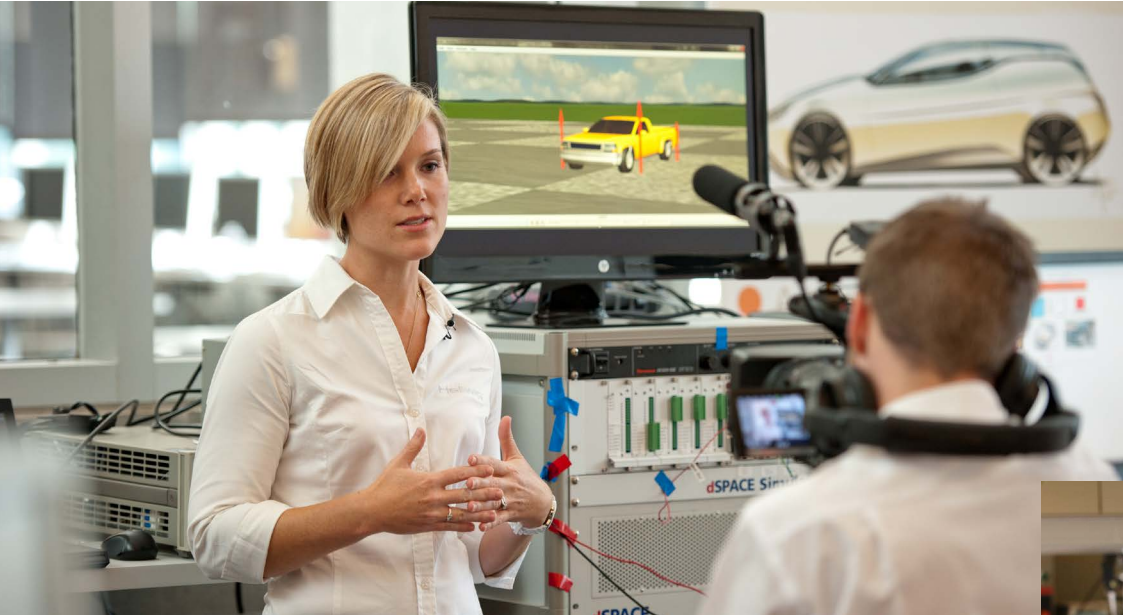
STEPHANE MEYSTRE, M.D., PH.D., FACMI

SmartState Chair

SmartState Center in Translational Biomedical Informatics

IN CLOSING

South Carolina Transformation



“First comes thought; then organization of that thought into ideas and plans; then transformation of those plans into reality. The beginning, as you will observe, is in your imagination.”

NAPOLEON HILL

The SmartState Endowed Chairs' ideas have the power to transform South Carolina's fortunes through research and education, partnerships and investment from corporations, and the attraction of federal research dollars. The endowed chairs have seized the SmartState® Program's vision and run with it. And in creating this report, they have invited us into their labs and lives to experience a little of their world.

The endowed chairs agree that the SmartState® Program has opened doors for them. Their counsel is valued by corporations, energy companies, healthcare institutions, and policymakers. Students seek out their labs, hoping to become part of something greater that only can be found in South Carolina.

Clemson University's Dr. Laine Mears, the BMW Endowed Chair in Automotive Manufacturing, commented that the SmartState® Program inspires him to “think big.” He marveled at how he is now a trusted advisor to South Carolina manufacturers and is tasked with helping to solve a variety of issues. Such great expectations have led Mears to think big in his research, but equally important, to lead

an effort to transform technical education. What began as an idea is now a unique collaboration between Clemson and University of South Carolina Greenville Technical College that promises to elevate the knowledge base of South Carolina workers and keep the state's manufacturing businesses powered by qualified people.

The SmartState® Program has a legacy rich in big thinkers, from early advocates like Sam Tenenbaum (featured in this report) who worked tirelessly to bring supporters to the table, to university presidents: Jim Barker and James Clements of Clemson University; Ray Greenberg and David Cole of the Medical University of South Carolina; and John Palms, Andrew Sorensen and Harris Pastides of the University of South Carolina. These individuals and many too numerous to list here believed in the big idea of the SmartState® Program and used it to transform South Carolina for our citizens, our businesses community and our students.

The SmartState® Program would like to thank everyone who has dared to dream big and worked tirelessly to make those dreams reality. Let us continue to transform South Carolina for the better. ●

SMARTSTATE Program Contacts

South Carolina Commission on Higher Education

Jeff Schilz

Interim Executive Director
803.737.2155
jschilz@che.sc.gov

Dr. Argentini Anderson

Assistant Director of Academic Affairs
803.737.2276
aanderson@che.sc.gov

Dr. John Lane

Director of Academic Affairs
803.737.0141
jlane@che.sc.gov

Tanya Rogers

*Program Coordinator
Academic Affairs*
803.737.2224
trogers@che.sc.gov

University Research

Clemson University

Dr. Tanju Karanfil

Vice President for Research
tkaranf@clemson.edu

Chris Gesswein

*Interim Executive Director
Clemson University Research Foundation*
agesswe@clemson.edu

Medical University of South Carolina (MUSC)

Dr. Kathleen T. Brady

Vice President for Research
bradyk@musc.edu

Michael Rusnak

Executive Director, Foundation for University Research
rusnak@musc.edu

University of South Carolina

Dr. Prakash Nagarkatti

*Vice President for Research
Carolina Distinguished Professor*
prakash@mailbox.sc.edu

William Kirkland

*Director
Office of Economic Development*
kirkla@mailbox.sc.edu

University Media Relations

Mark David Land

Vice President for University Relations
864.656.4233
mdland@clemson.edu

Heather M. Woolwine, MA

Media Relations Director
843.792.7669
woolwinh@musc.edu

Wes Hickman

*University of South Carolina
Director, News & Internal Communications*
803.777.3478
whickman@mailbox.sc.edu

The SmartState® Program annual report is prepared annually for the South Carolina General Assembly and the South Carolina Budget and Control Board by the SmartState Review Board and the South Carolina Commission on Higher Education in accordance with S.C. Code of Laws §2-75-10.

In accordance with S.C. Code of Laws §1-11-425, the following information is provided: Number of reports printed: 400. Cost per report: \$5.967. Total printing cost: \$2,386.80



SMARTSTATESC.ORG
South Carolina Commission on Higher Education
1122 Lady Street, Suite 300
Columbia, South Carolina 29201

**SOUTH CAROLINA CENTERS
OF ECONOMIC EXCELLENCE**

**FINANCIAL AND
COMPLIANCE REPORT**

JUNE 30, 2017

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
INDEX
YEAR ENDED JUNE 30, 2017**

	Page
REVIEW BOARD	1
MANAGEMENT'S DISCUSSION AND ANALYSIS	2 - 9
SECTION I - FINANCIAL STATEMENTS	
INDEPENDENT AUDITOR'S REPORT ON THE FINANCIAL STATEMENTS	10 - 11
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - CONSOLIDATED SUMMARY	12 - 13
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - CLEMSON UNIVERSITY	14 - 20
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - MEDICAL UNIVERSITY OF SOUTH CAROLINA	21 - 31
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - UNIVERSITY OF SOUTH CAROLINA	32 - 41
NOTES TO FINANCIAL STATEMENTS	42 - 45
SECTION II - COMPLIANCE	
INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE AND ON INTERNAL CONTROL OVER FINANCIAL REPORTING BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH <i>GOVERNMENT AUDITING STANDARDS</i>	46 - 47
SCHEDULE OF FINDINGS AND RESPONSES	48

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
REVIEW BOARD
JUNE 30, 2017**

<u>NAME</u>	<u>POSITION</u>	<u>APPOINTMENT</u>
Jason Premo	Chair	Governor
Karoly Kerekes	Vice-Chair	Governor
Regan Voit	Member	Chair, Senate Finance Committee
Melvin C. Williams	Member	President Pro Tempore of the Senate
Lisa Main	Secretary	Speaker of the House
Robert W. Pearce, Jr.	Member	Speaker of the House
Roberta Bankhead Wood	Member	Chair, House Ways and Means Committee
James P. Clements	Ex-officio	President, Clemson Univ.
David J. Cole	Ex-officio	President, Medical Univ. of S.C.
Harris Pastides	Ex-officio	President, Univ. of S. C.



SmartState Program
Management's Discussion and Analysis
Period: Fiscal Year 2016-2017

Management's Discussion and Analysis provides an overview of the SmartState program and data covering the fiscal year ended June 30, 2017. This discussion and analysis should be read in conjunction with the financial statement and accompanying notes. The financial statements have been prepared by an independent auditor (Derrick, Stubbs & Stith, LLP) in accordance with S.C. Code of Laws, as amended, Section 2-75-10.

Overview of the SmartState Program

In 2002, the South Carolina General Assembly passed the Research Centers of Economic Excellence (RCEE) Act. The legislation originally required appropriation of \$200 million through 2010¹ from the South Carolina Education Lottery to establish unique Centers of Economic Excellence at South Carolina's three senior research institutions: Clemson University, University of South Carolina (USC), and Medical University of South Carolina (MUSC). Each Center of Economic Excellence (Center) specializes in unique, knowledge-based economy research (in fields such as engineering, nanotechnology, biomedical science, and energy science) that promotes and creates enhanced economic opportunities for the state. In 2008, the General Assembly amended the RCEE Act to replace the \$200 million funding cap and the 2010 sunset date with a statutory guarantee of \$30 million in annual funding so long as (a) Lottery-supported scholarships have been fully funded, and (b) the SmartState Review Board has, by the end of the most previous fiscal year, awarded a minimum of 80% of overall appropriations since 2003.

The RCEE Act also created the SmartState Review Board, which provides program oversight. The Review Board is composed of 11 members: three appointed by the

¹ The General Assembly appropriated \$30 million per year in the state budget for fiscal years 2003 through 2008. The General Assembly has appropriated no new funds for fiscal years 2009 through 2017.

Governor; three by the President Pro Tempore of the Senate; three by the Speaker of the House of Representatives; one by the Chair of the Senate Finance Committee; and one by the Chair of the House Ways & Means Committee. Membership terms are three years, and individuals may serve three total terms. Presidents of South Carolina's three research universities serve as *ex-officio*, non-voting members of the Review Board. Staff and operational support for the SmartState Program are provided by CHE.

The SmartState Review Board held its first meeting on October 17, 2002, at which it approved formal *Bylaws*. On December 5, 2002, the Review Board approved Program *Guidelines* and *Requests for Proposals Guidelines for 2002-2003*, which established a competitive, annual process whereby Centers of Economic Excellence are proposed by the research institutions and approved by the Review Board. The three-tier review process includes two rigorous scientific evaluations (a technical review and an onsite panel review), followed by the Review Board's analysis of the review findings and a formal vote on individual proposals. In 2008, the General Assembly amended the RCEE Act by encoding the technical and scientific review process for proposals.

Once a new Center is approved, an institution has 18 months in which to solicit non-state (private, federal, or municipal) investors to pledge dollar-for-dollar matching of a Center's total state award (between \$2 million to \$5 million). In February 2007, the SmartState Review Board approved a policy whereby an institution may apply for up to two six-month extensions beyond the 18-month pledge verification deadline. All matching pledges must be realized within 78 months of a Center's approval date. In February 2009, the SmartState Review Board approved a policy whereby an institution may apply for as many as two six-month extensions beyond the 78-month drawdown deadline.

State funds may only be drawn against perfected (eligible and received) non-state pledges. The majority of funds (all of the state funds plus no less than 30% of the non-state match) is placed in endowment, which may be used to pay the salaries or salary supplements of the world-class scientists (endowed chairs) specially recruited to lead each Center, as well as to pay for the purchase of specialized equipment, laboratory construction, other faculty, and research assistants. In 2008, the General Assembly amended the RCEE Act by codifying the use of a certain portion (determined by the

SmartState Review Board) of non-state matching funds “to pay for initial operating costs” of Centers (S.C. 2-75-100).

On December 12, 2006, the SmartState Review Board convened a Cost Share Work Group. Representatives from all three research institutions, the Office of the State Treasurer, and CHE gathered to discuss accounting standards related to the RCEE Act. On February 26, 2007, the Review Board approved a Cost Share Accounting Policy which contains specific guidelines for claiming and valuing in-kind matches. In 2008, the General Assembly amended the RCEE Act to encode the use of cash equivalent and in-kind donations as valid non-state matches for the SmartState Program.

In 2010, the General Assembly amended the RCEE act to create a new type of SmartState award to be made in concert with the South Carolina Department of Commerce. One-quarter of the unallocated Centers of Excellence Matching Endowment funds were dedicated for funding such “SmartState Commerce Awards.” SmartState Commerce Awards may not individually exceed \$2 million and do not require the dollar-for-dollar, non-state match of standard SmartState awards. In place of the matching requirement, the Secretary of Commerce is required to certify that a “significant capital investment” has been made in the related research field of the proposed SmartState Commerce Award professorial endowment. These revisions became effective January 1, 2011. The SmartState Review Board issued an RFP for awards in FY 2011. At the request of the Department of Commerce, the awards for this component of the SmartState Program have not been made. However, during the 2015-2016 legislative session, the SC General Assembly approved Proviso 117.139², which states that the SmartState Endowed Chairs Program funds earmarked for Commerce Awards shall be transferred by the Commission on Higher Education to the Department of Commerce’s Applied Research Centers by August 1, 2016. The program fund amount of \$2.8 million was transferred to the Department of Commerce on July 25, 2016.

Over time, each research institution has developed concentrated SmartState focus areas. Clemson University’s core strengths lie in the area of automotive and transportation technology, advanced materials and biotechnology/biomedical sciences. USC’s Centers

² Part 1B Proviso 117.139, FY 2015-16, states: The Endowed Chairs Program funds that have been set aside for “Commerce Awards” shall be transferred by the Commission on Higher Education to the Department of Commerce’s Applied Research Centers by August 1, 2016.

generally fall within three clusters: future fuels, biomedical sciences, and nanotechnology. MUSC's strengths lie in the areas of neuroscience, cancer research, vascular disease, and health care quality and finance.

One hallmark of the SmartState Program is an almost unprecedented scientific collaboration at the academic level. More than one-third of the Centers are partnerships between and among state public institutions, including three four-year comprehensive teaching universities. Dr. John Schaefer, SmartState Endowed Chair at MUSC's Clinical Effectiveness and Patient Safety Center has noted that such academic collaboration rarely exists—not even at Harvard or Yale. The lure of bonded research partnerships serves as an enticing recruiting tool to the renowned scientists required to lead each Center.

2016-17 SmartState Summary Information

At the end of FY 2016-17, the program consists of 51 Centers with 85 approved SmartState Endowed Chairs of which 71 have been appointed. As envisioned by the General Assembly, the SmartState Program has become a successful boost to the state's knowledge-based economy. Of the \$197.6 million³ in SmartState awards granted by the Board through the end of FY 2016-17, \$197.6 million in matching pledges have been committed by non-state sources. Of the committed pledges through FY 2016-17, \$197.6 million have been perfected and drawn down.

The table found on the following pages provides summary information on the Centers from FY 2002-03 through FY 2016-17.

³ To date, the SmartState Review Board has obligated \$17.6 million in accrued program interest for the awarding of additional proposals, as is permitted by statute. To date, the Review Board has used all of the \$17.6 million in accrued interest to fund proposals in the 2008-2009, 2009-2010 and 2012-2013 award cycles.



**Summary of Approved SmartState Program
Centers of Economic Excellence by Fiscal (Funding) Year (2002-03 – 2016-17)**

Funding Year 2002-2003			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Automotive Systems Integration	1	\$5 million
Clemson	Automotive Manufacturing	1	\$5 million
USC	Nanostructures	1	\$4 million
USC/MUSC	Brain Imaging	3 ¹	\$5 million
MUSC	Proteomics	2	\$4 million
MUSC	Neuroscience	2 ²	\$3 million
MUSC/USC/CoC	Marine Genomics	2 ⁴	\$4 million
Total Awarded in 2002-2003		12	\$30 million
Funding Year 2003-2004			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Automotive Design & Development	1	\$5 million
Clemson	Electronic Systems Integration	1	\$3 million
Clemson	Photonic Materials	1	\$5 million
USC	Polymer Nanocomposites	1	\$3.5 million
USC	Innovation and Commercialization	1 ⁴	\$2.5 million
MUSC/Clemson/USC	Regenerative Medicine	3	\$5 million
MUSC/USC	Translational Cancer Therapeutics	2	\$5 million
Total Awarded in 2003-2004		10	\$29 million
Funding Year 2004-2005			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Restoration [WITHDRAWN]	—	[\$3 million]
Clemson	Electron Imaging [WITHDRAWN]	—	[\$5 million]
USC	Catalysis for Renewable Fuels	1	\$3 million
USC	Innovation and Commercialization	[See 03-04]	\$2.5 million
USC/Coastal Carolina	Tourism & Economic Development	1	\$2 million
MUSC	Gastrointestinal Cancer Diagnostics	2 ⁵	\$5 million
MUSC/USC	Cancer Drug Discovery	4	\$5 million
MUSC	Vision Science	2 ⁶	\$4.5 million
Total Awarded in 2004-2005		10	\$22 million

¹Revised to three chairs by act of the SmartState Review Board on January 12, 2009.

²Revised to two chairs by act of the SmartState Review Board on February 9, 2015.

³Revised to two chairs by act of the SmartState Review Board on February 23, 2010.

⁴The The Hydrogen Economy Center was approved during 2003-2004. Funding for one half of this Center was provided in 2003-04, the other half in 2004-2005. In 2014, the name changed to the SmartState Center for Innovation and Commercialization and revised to one chair.

⁵ Increased from one to two endowed chairs by act of the SmartState Review Board on September 8, 2008.

⁶Revised to two chairs and relinquished USC as a collaborative partner by act of the SmartState Review Board on February 11, 2014.

Funding Year 2005-2006			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Supply Chain Optimization & Logistics	1	\$2 million
Clemson	Urban Ecology and Restoration	1	\$2 million
Clemson	Advanced Fiber-Based Materials	1	\$4 million
Clemson	Molecular Nutrition [WITHDRAWN]	—	[\$2 million]
USC	Solid Oxide Fuel Cells	1	\$3 million
USC/MUSC	Childhood Neurotherapeutics	3	\$5 million
MUSC	Molecular Proteomics in Cardiovascular Disease & Prevention	2	\$5 million
MUSC/USC	Clinical Effectiveness & Patient Safety ⁷	3	\$5 million
Total Awarded in 2005-2006		12	\$26 million
Funding Year 2006-2007			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson/MUSC	Health Facilities Design & Testing ⁸	2	\$2 million
USC	Rehabilitation and Reconstruction Science	1	\$5 million
USC	Strategic Approaches to the Generation of Electricity	1	\$5 million
USC/MUSC/Clemson	Healthcare Quality	2	\$5 million
USC/Clemson	Senior SMART TM Center ⁹	3	\$5 million
MUSC	Tobacco-Related Malignancy	2	\$5 million
MUSC/USC	Stroke	3	\$5 million
Total Awarded in 2006-2007		14	\$32 million

5

⁷On September 9, 2008, the SmartState Review Board approved a revision to this proposal which relinquished Clemson University as a collaborative partner and transferred the Chair at Clemson to MUSC.

⁸The state award total for this Center was revised from \$5 million to \$2 million by the SmartState Review Board on June 11, 2012.

⁹The SeniorSMART Center of Economic Excellence was approved in 2007-2008. Funding was provided from 2006-2007 dollars.

SC Centers of Economic Excellence Funded Proposals (continued)

Funding Year 2007-2008			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Optoelectronics	1	\$2 million
Clemson	CyberInstitute	1	\$2 million
USC	Environmental Nanoscience and Risk	1	\$3 million
USC	Nuclear Science and Energy	1	\$3 million
MUSC	Renal Disease Biomarker	2	\$5 million
MUSC/Clemson	Cancer Stem Cell Biology	2	\$5 million
MUSC/USC/Clemson	Advanced Tissue Biofabrication	3	\$5 million
MUSC/USC/SCSU	Cancer Disparities ¹⁰	3	\$3.6 million
MUSC/USC	Medication Safety & Efficacy ¹¹	1	\$2 million
Total Awarded in 2007-2008		15	\$30.6 million
Funding Year 2008-2009			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Tissue Systems Characterization [WITHDRAWN]	—	[\$3 million]
USC	General Atomics Center for Development of Transformational Nuclear Technologies	1	\$3 million
USC/MUSC	Healthful Lifestyles ¹²	2	\$3 million
MUSC	Lipidomics, Pathobiology and Therapy	2	\$5 million
Total Awarded in 2008-2009		5	\$11 million
Funding Year 2009-2010			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Sustainable Development	1	\$4 million
USC	Data Analysis	1	\$2 million
MUSC	Inflammation and Fibrosis Research	2	\$5 million
Total Awarded in 2009-2010		4	\$11 million

¹⁰The Cancer Disparities Center of Economic Excellence was approved in 2008-2009. Funding was provided from 2007-2008 dollars.

¹¹The Medication Safety & Efficacy Center was approved in 2008-2009. Funding was provided from 2007-2008 dollars.

¹²The Healthful Lifestyles Center of Economic Excellence was approved in 2009-2010 with funding from 2008-2009 dollars.

SC Centers of Economic Excellence Funded Proposals (continued)

Funding Year 2012-2013			
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Smart Grid Technology	1	\$2 million
USC	Multifunctional Materials and Structures	1	\$2 million
MUSC	Translational Biomedical Informatics	1	\$2 million
Total Awarded in 2012-2013		3	\$6 million

Program Totals¹	
TOTAL LOTTERY APPROPRIATIONS (2003-2008)	\$180 million
ACCRUED PROGRAM INTEREST USED FOR ADDITIONAL AWARDS * * As permitted by S.C. 2-75-30(A).	\$17.6 million
TOTAL FUNDS AWARDED (2003-2013)	\$197.6 million

Research Institution Totals				
Institution	Centers Awarded	Chairs Created	Chairs Appointed (Remaining to be Appointed)	State Funds Drawn
Clemson University	13	16	13 (3)	\$43,000,000
University of South Carolina	18	28	24 (4)	\$66,500,00
Medical University of South Carolina	20	41	34 (7)	\$88,100,000
TOTALS	51	85	71 (14)	\$197.6 million

¹Program totals are as of fiscal year end June 30, 2017. For Research Institution Totals, Centers Awarded and State Funds Drawn for each institution are tallied on the fiscal agent in cases of joint proposals. Chairs are tallied based on the assigned institution as of November 2017. For updated information on Centers and program totals, contact CHE or see www.smartstaesc.org.

INDEPENDENT AUDITOR'S REPORT

To the Review Board
South Carolina Centers of Economic Excellence
Columbia, South Carolina

We have audited the Statements of Program Revenues, Expenditures and Changes in Fund Balances of the South Carolina Centers of Economic Excellence (the Program) for the year ended June 30, 2017, as listed in the index. These financial statements are the responsibility of the Program's management. Our responsibility is to express an opinion on these financial statements based on our audit.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial presentation. We believe that our audit provides a reasonable basis for our opinion.

Opinion

In our opinion, the financial statements and changes in fund balances referred to above present fairly, in all material respects, the program revenues and expenditures of the South Carolina Centers of Economic Excellence for the year ended June 30, 2017, in conformity with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As described in Note 5 to the financial statements, the Program restated beginning balances resulting from errors that occurred in the prior period financial statements. Our opinion is not modified with respect to this matter.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued a report dated October 13, 2017, on our consideration of the Program's internal control over financial reporting and our tests of its compliance with certain provisions of laws, regulations, contracts and grants. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be read in conjunction with this report in considering the results of our audit.

To the Review Board
South Carolina Centers of Economic Excellence
Page 2

Other Matter

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 2 through 9 be presented to supplement the basic financial statements. Such information, although not a required part of the basic financial statements, is required by the Governmental Accounting Standards Board, which considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Derrick, Stubbs & Stith, LLP

Columbia, South Carolina
October 13, 2017

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - CONSOLIDATED SUMMARY
YEAR ENDING JUNE 30, 2017**

	Clemson University				Medical University of South Carolina				Total
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	20	-	3,350	255,251	322,870	581,471
Other Contributions/Revenue	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	20	-	3,350	255,251	322,870	581,471
Investment Income									
Realized gain (loss)	-	-	-	785,744	-	-	-	3,741,560	3,741,560
Unrealized gain (loss)	-	-	-	11,121,191	-	-	-	9,771,692	9,771,692
Endowment income	-	-	-	486	-	-	-	615,162	615,162
Total investment income (loss)	-	-	-	11,907,421	-	-	-	14,128,414	14,128,414
Total revenue	-	-	-	11,907,441	-	3,350	255,251	14,451,284	14,709,885
Expenditures									
Personal services	-	-	-	982,465	-	-	539,558	2,043,965	2,583,523
Fringe	-	-	585	279,694	-	-	129,544	850,267	979,811
Travel	-	-	-	170,079	-	-	55,385	72,815	128,200
Subrecipients	-	-	-	-	-	-	110,092	684,063	794,155
Supplies	-	-	-	136,302	-	-	311,736	464,771	776,507
Contractual	-	-	7,125	10,833	-	-	758	1,318,877	1,319,635
Tuition assistance	-	-	-	112,471	-	-	-	-	-
Fixed charges	-	-	-	334,710	-	-	5,126	75,010	80,136
Administrative fees	-	-	12,516	-	-	-	-	-	-
Other	-	-	-	-	-	-	50,609	48,176	98,785
Facilities	-	-	-	-	-	-	-	-	-
Professional & Other Fees	-	-	10,696	-	-	-	-	92,650	92,650
Equipment	-	-	-	302,335	-	-	141,498	412,670	554,168
Total expenditures	-	-	30,922	2,328,889	-	-	1,344,306	6,063,264	7,407,570
Excess (deficiency) of revenues over (under) expenditures	-	-	(30,922)	9,578,552	-	3,350	(1,089,055)	8,388,020	7,302,315
Transfers	-	-	-	-	-	-	1,164,879	(1,164,879)	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	43,000,000	35,487,523	187,903	23,522,741	88,099,999	34,993,629	12,145,464	20,212,425	155,451,517
Prior Period Adjustment	-	-	-	-	-	-	-	(2,379,676)	(2,379,676)
Beginning Fund Balances as Restated	43,000,000	35,487,523	187,903	23,522,741	88,099,999	34,993,629	12,145,464	17,832,749	153,071,841
Ending Fund Balances	\$ 43,000,000	\$ 35,487,523	\$ 156,981	\$ 33,101,293	\$ 88,099,999	\$ 34,996,979	\$ 12,221,288	\$ 25,055,890	\$ 160,374,156

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES - CONSOLIDATED SUMMARY
YEAR ENDING JUNE 30, 2017**

	University of South Carolina				Total - Consolidated Summary				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	755,840	18,550	121,530	-	759,190	273,801	444,420	1,477,411
Other Contributions/Revenue	-	-	253,335	506,829	-	-	253,335	506,829	760,164
Total contribution revenue	-	755,840	271,885	628,359	-	759,190	527,136	951,249	2,237,575
Investment Income									
Realized gain (loss)	-	-	-	1,227,612	-	-	-	5,754,916	5,754,916
Unrealized gain (loss)	-	-	-	5,205,535	-	-	-	26,098,418	26,098,418
Endowment income	-	-	11,390	536,518	-	-	11,390	1,152,166	1,163,556
Total investment income (loss)	-	-	11,390	6,969,665	-	-	11,390	33,005,500	33,016,890
Total revenue	-	755,840	283,275	7,598,024	-	759,190	538,526	33,956,749	35,254,465
Expenditures									
Personal services	-	-	21,807	2,632,864	-	-	561,365	5,659,294	6,220,659
Fringe	-	-	3,847	455,412	-	-	133,976	1,585,373	1,719,349
Travel	-	-	5,893	264,437	-	-	61,278	507,331	568,609
Subrecipients	-	-	-	-	-	-	210,002	1,055,400	1,265,402
Supplies	-	-	99,910	371,337	-	-	311,736	601,073	912,809
Contractual	-	-	-	-	-	-	7,883	1,529,276	1,537,159
Tuition assistance	-	-	-	199,566	-	-	-	112,471	112,471
Fixed charges	-	-	-	-	-	-	5,126	75,010	80,136
Administrative fees	-	-	-	461,053	-	-	12,516	795,763	808,279
Other	-	845,319	371,350	1,983,471	-	845,319	421,959	2,031,647	3,298,925
Facilities	-	-	-	-	-	-	-	-	-
Professional & Other Fees	-	-	-	-	-	-	10,696	92,650	103,346
Equipment	-	-	1,506	718,600	-	-	143,004	1,433,605	1,576,609
Total expenditures	-	845,319	504,313	7,086,740	-	845,319	1,879,541	15,478,893	18,203,753
Excess (deficiency) of revenues over (under) expenditures	-	(89,479)	(221,038)	511,284	-	(86,129)	(1,341,015)	18,477,856	17,050,712
Transfers	-	-	5,000	(5,000)	-	-	1,169,879	(1,169,879)	-
Cumulative Program Fund Balances Beginning Fund Balances as Previously Reported	66,500,000	30,945,463	1,950,031	13,668,420	197,599,999	101,426,615	14,283,398	57,403,586	370,713,598
Prior Period Adjustment	-	(1,047,326)	(94,598)	(128,301)	-	(1,047,326)	(94,598)	(2,507,977)	(3,649,901)
Beginning Fund Balances as Restated	66,500,000	29,898,137	1,855,433	13,540,119	197,599,999	100,379,289	14,188,800	54,895,609	367,063,697
Ending Fund Balances	\$ 66,500,000	\$ 29,808,658	\$ 1,639,395	\$ 14,046,403	\$ 197,599,999	\$ 100,293,160	\$ 14,017,664	\$ 72,203,586	\$ 384,114,409

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Automotive Design and Development				Automotive Manufacturing Integration				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-
Investment Income									
Realized gain (loss)	-	-	-	76,885	-	-	-	101,523	101,523
Unrealized gain (loss)	-	-	-	1,104,592	-	-	-	1,396,182	1,396,182
Endowment income	-	-	-	(2,471)	-	-	-	(5,821)	(5,821)
Total investment income (loss)	-	-	-	1,179,006	-	-	-	1,491,884	1,491,884
Total revenue	-	-	-	1,179,006	-	-	-	1,491,884	1,491,884
Expenditures									
Personal services	-	-	-	22,116	-	-	-	88,625	88,625
Fringe	-	-	-	7,380	-	-	-	19,104	19,104
Travel	-	-	-	12,323	-	-	-	981	981
Supplies	-	-	-	29,628	-	-	-	-	-
Contractual	-	-	-	-	-	-	-	-	-
Tuition assistance	-	-	-	-	-	-	-	19,754	19,754
Administrative fees	-	-	-	-	-	-	-	-	-
Other	-	-	-	31,573	-	-	-	14,066	14,066
Facilities	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	86,375	-	-	-	50,000	50,000
Total expenses	-	-	-	189,395	-	-	-	192,530	192,530
Excess (deficiency) of revenues over (under) expenditures	-	-	-	989,611	-	-	-	1,299,354	1,299,354
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	5,000,000	2,845,991	-	2,197,836	5,000,000	5,000,000	-	2,811,491	12,811,491
Ending Fund Balances	\$ 5,000,000	\$ 2,845,991	\$ -	\$ 3,187,447	\$ 5,000,000	\$ 5,000,000	\$ -	\$ 4,110,845	\$ 14,110,845

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Automotive Systems Integration				Optical Materials					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	109,207	109,207	-	-	-	76,145	76,145
Unrealized gain (loss)	-	-	-	1,499,027	1,499,027	-	-	-	1,114,395	1,114,395
Endowment income	-	-	-	(6,440)	(6,440)	-	-	-	(1,321)	(1,321)
Total investment income (loss)	-	-	-	1,601,794	1,601,794	-	-	-	1,189,219	1,189,219
Total revenue	-	-	-	1,601,794	1,601,794	-	-	-	1,189,219	1,189,219
Expenditures										
Personal services	-	-	-	3,333	3,333	-	-	-	175,471	175,471
Fringe	-	-	-	273	273	-	-	-	52,597	52,597
Travel	-	-	-	956	956	-	-	-	36,239	36,239
Supplies	-	-	-	-	-	-	-	-	42,261	42,261
Contractual	-	-	-	-	-	-	-	-	-	-
Tuition assistance	-	-	-	1,314	1,314	-	-	-	3,432	3,432
Administrative fees	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	7,275	7,275	-	-	2,500	51,472	53,972
Facilities	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	29,949	29,949
Total expenses	-	-	-	13,151	13,151	-	-	2,500	391,421	393,921
Excess (deficiency) of revenues over (under) expenditures	-	-	-	1,588,643	1,588,643	-	-	(2,500)	797,798	795,298
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances	5,000,000	5,000,000	114,921	3,561,754	13,676,675	5,000,000	3,050,852	14,384	2,737,147	10,802,383
Ending Fund Balances	<u>\$ 5,000,000</u>	<u>\$ 5,000,000</u>	<u>\$ 114,921</u>	<u>\$ 5,150,397</u>	<u>\$ 15,265,318</u>	<u>\$ 5,000,000</u>	<u>\$ 3,050,852</u>	<u>\$ 11,884</u>	<u>\$ 3,534,945</u>	<u>\$ 11,597,681</u>

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Vehicle Electronic Systems				Supply Chain Optimization and Logistics				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-
Investment Income									
Realized gain (loss)	-	-	-	49,386	-	-	-	40,745	40,745
Unrealized gain (loss)	-	-	-	706,080	-	-	-	558,987	558,987
Endowment income	-	-	-	(1,565)	-	-	-	(1,315)	(1,315)
Total investment income (loss)	-	-	-	753,901	-	-	-	598,417	598,417
Total revenue	-	-	-	753,901	-	-	-	598,417	598,417
Expenditures									
Personal services	-	-	-	120,937	-	-	-	113,273	113,273
Fringe	-	-	-	36,402	-	-	-	29,040	29,040
Travel	-	-	-	15,589	-	-	-	15,002	15,002
Supplies	-	-	-	4,236	-	-	-	747	747
Contractual	-	-	-	-	-	-	-	-	-
Tuition assistance	-	-	-	-	-	-	-	8,112	8,112
Administrative fees	-	-	-	-	-	-	-	-	-
Other	-	-	-	8,120	-	-	-	3,357	3,357
Facilities	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	29,851	-	-	-	11,500	11,500
Total expenses	-	-	-	215,136	-	-	-	181,031	181,031
Excess (deficiency) of revenues over (under) expenditures	-	-	-	538,765	-	-	-	417,386	417,386
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	3,000,000	2,000,000	-	1,463,901	2,000,000	2,000,000	-	919,261	4,919,261
Ending Fund Balances	<u>\$ 3,000,000</u>	<u>\$ 2,000,000</u>	<u>\$ -</u>	<u>\$ 2,002,666</u>	<u>\$ 2,000,000</u>	<u>\$ 2,000,000</u>	<u>\$ -</u>	<u>\$ 1,336,647</u>	<u>\$ 5,336,647</u>

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Urban Ecology and Restoration				Advanced Fiber-Based Materials				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	20	20
Total contribution revenue	-	-	-	-	-	-	-	20	20
Investment Income									
Realized gain (loss)	-	-	-	41,538	-	-	-	74,683	74,683
Unrealized gain (loss)	-	-	-	566,937	-	-	-	1,040,424	1,040,424
Endowment income	-	-	-	(622)	-	-	-	(2,306)	(2,306)
Total investment income (loss)	-	-	-	607,853	-	-	-	1,112,801	1,112,801
Total revenue	-	-	-	607,853	-	-	-	1,112,821	1,112,821
Expenditures									
Personal services	-	-	-	101,925	-	-	-	151,023	151,023
Fringe	-	-	-	24,049	-	-	585	46,690	47,275
Travel	-	-	-	8,048	-	-	-	20,430	20,430
Supplies	-	-	-	3,667	-	-	-	4,509	4,509
Contractual	-	-	-	-	-	-	7,125	10,833	17,958
Tuition assistance	-	-	-	3,867	-	-	-	5,565	5,565
Administrative fees	-	-	-	-	-	-	-	-	-
Other	-	-	-	15,070	-	-	10,016	17,831	27,847
Facilities	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	10,696	-	10,696
Total expenses	-	-	-	156,626	-	-	28,422	256,881	285,303
Excess (deficiency) of revenues over (under) expenditures	-	-	-	451,227	-	-	(28,422)	855,940	827,518
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	2,000,000	2,000,000	-	1,196,450	4,000,000	3,482,500	58,598	2,487,050	10,028,148
Ending Fund Balances	\$ 2,000,000	\$ 2,000,000	\$ -	\$ 1,647,677	\$ 4,000,000	\$ 3,482,500	\$ 30,176	\$ 3,342,990	\$ 10,855,666

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Health Facilities Design and Testing				Optoelectronics					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	36,602	36,602	-	-	-	41,695	41,695
Unrealized gain (loss)	-	-	-	626,411	626,411	-	-	-	568,282	568,282
Endowment income	-	-	-	3,023	3,023	-	-	-	(1,820)	(1,820)
Total investment income (loss)	-	-	-	666,036	666,036	-	-	-	608,157	608,157
Total revenue	-	-	-	666,036	666,036	-	-	-	608,157	608,157
Expenditures										
Personal services	-	-	-	15,967	15,967	-	-	-	42,797	42,797
Fringe	-	-	-	6,681	6,681	-	-	-	11,988	11,988
Travel	-	-	-	22,246	22,246	-	-	-	24,681	24,681
Supplies	-	-	-	-	-	-	-	-	48,066	48,066
Contractual	-	-	-	-	-	-	-	-	-	-
Tuition assistance	-	-	-	12,008	12,008	-	-	-	58,419	58,419
Administrative fees	-	-	-	-	-	-	-	-	55,191	55,191
Other	-	-	-	124,805	124,805	-	-	-	-	-
Facilities	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	85,081	85,081
Total expenses	-	-	-	181,707	181,707	-	-	-	326,223	326,223
Excess (deficiency) of revenues over (under) expenditures	-	-	-	484,329	484,329	-	-	-	281,934	281,934
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	2,000,000	2,000,000	-	1,565,984	5,565,984	2,000,000	2,006,799	-	1,261,090	5,267,899
Ending Fund Balances	\$ 2,000,000	\$ 2,000,000	\$ -	\$ 2,050,313	\$ 6,050,313	\$ 2,000,000	\$ 2,006,799	\$ -	\$ 1,543,024	\$ 5,549,823

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Cyber-Institute			Sustainable Development			Total
	State Endowment	Non-State Endowment	Non-State Expendable	State Endowment	Non-State Endowment	Non-State Expendable	
Contribution Revenue							
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-
Total contribution revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Investment Income							
Realized gain (loss)	-	-	-	30,694	-	-	70,509
Unrealized gain (loss)	-	-	-	442,688	-	-	997,471
Endowment income	-	-	-	1,666	-	-	(485)
Total investment income (loss)	-	-	-	475,048	-	-	1,067,495
Total revenue	-	-	-	475,048	-	-	1,067,495
Expenditures							
Personal services	-	-	-	-	-	-	146,998
Fringe	-	-	-	-	-	-	45,489
Travel	-	-	-	-	-	-	13,585
Supplies	-	-	-	-	-	-	3,187
Contractual	-	-	-	-	-	-	-
Tuition assistance	-	-	-	-	-	-	-
Administrative fees	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	5,950
Facilities	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	9,578
Total expenses	-	-	-	-	-	-	224,787
Excess (deficiency) of revenues over (under) expenditures	-	-	-	475,048	-	-	842,708
Transfers	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	2,000,000	1,089,923	-	911,057	3,011,458	-	2,223,923
Ending Fund Balances	\$ 2,000,000	\$ 1,089,923	\$ -	\$ 1,386,105	\$ 3,011,458	\$ -	\$ 3,066,631
							\$ 10,078,089

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Duke Energy Smart Grid				Total - Clemson University				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	20	20
Total contribution revenue	-	-	-	-	-	-	-	20	20
Investment Income									
Realized gain (loss)	-	-	-	36,132	-	-	-	785,744	785,744
Unrealized gain (loss)	-	-	-	499,714	-	-	-	11,121,191	11,121,191
Endowment income	-	-	-	19,963	-	-	-	486	486
Total investment income (loss)	-	-	-	555,809	-	-	-	11,907,421	11,907,421
Total revenue	-	-	-	555,809	-	-	-	11,907,441	11,907,441
Expenditures									
Personal services	-	-	-	-	-	-	-	982,465	982,465
Fringe	-	-	-	-	-	-	585	279,694	280,279
Travel	-	-	-	-	-	-	-	170,079	170,079
Supplies	-	-	-	-	-	-	-	136,302	136,302
Contractual	-	-	-	-	-	7,125	-	10,833	17,958
Tuition assistance	-	-	-	-	-	-	-	112,471	112,471
Administrative fees	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	334,710	347,226
Facilities	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	302,335	313,031
Total expenses	-	-	-	-	-	30,922	-	2,328,889	2,359,811
Excess (deficiency) of revenues over (under) expenditures	-	-	-	555,809	-	-	(30,922)	9,578,552	9,547,630
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances Beginning Fund Balances	2,000,000	2,000,000	-	185,797	43,000,000	35,487,523	187,903	23,522,741	102,198,167
Ending Fund Balances	\$ 2,000,000	\$ 2,000,000	\$ -	\$ 741,606	\$ 43,000,000	\$ 35,487,523	\$ 156,981	\$ 33,101,293	\$ 111,745,797

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Proteomics				Neurosciences					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	162,960	162,960	-	-	-	127,482	127,482
Unrealized gain (loss)	-	-	-	405,538	405,538	-	-	-	317,948	317,948
Endowment income	-	-	-	27,124	27,124	-	-	-	21,264	21,264
Total investment income (loss)	-	-	-	595,622	595,622	-	-	-	466,694	466,694
Total revenue	-	-	-	595,622	595,622	-	-	-	466,694	466,694
Expenditures										
Personal services	-	-	-	141,462	141,462	-	-	-	170,739	170,739
Fringe	-	-	-	51,286	51,286	-	-	-	57,208	57,208
Travel	-	-	-	11,745	11,745	-	-	-	3,986	3,986
Subrecipients	-	-	-	-	-	-	-	-	-	-
Supplies	-	-	-	76,503	76,503	-	-	-	25,740	25,740
Contractual	-	-	-	59,420	59,420	-	-	-	4,487	4,487
Other	-	-	-	23,584	23,584	-	-	-	-	-
Fixed Charges	-	-	-	14,320	14,320	-	-	-	-	-
Professional & Other Fees	-	-	-	22,287	22,287	-	-	-	-	-
Equipment	-	-	-	248,917	248,917	-	-	-	50,113	50,113
Total expenditures	-	-	-	649,524	649,524	-	-	-	312,273	312,273
Excess (deficiency) of revenues over (under) expenditures	-	-	-	(53,902)	(53,902)	-	-	-	154,421	154,421
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	4,000,000	1,254,266	660,098	1,372,002	7,286,366	3,000,000	900,350	770,829	1,030,240	5,701,419
Prior Period Adjustment	-	-	-	(237,302)	(237,302)	-	-	-	(115,748)	(115,748)
Beginning Fund Balances as Restated	4,000,000	1,254,266	660,098	1,134,700	7,049,064	3,000,000	900,350	770,829	914,492	5,585,671
Ending Fund Balances	\$ 4,000,000	\$ 1,254,266	\$ 660,098	\$ 1,080,798	\$ 6,995,162	\$ 3,000,000	\$ 900,350	\$ 770,829	\$ 1,068,913	\$ 5,740,092

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Marine Genomics				Regenerative Medicine				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	172,319	-	172,319
Total contribution revenue	-	-	-	-	-	-	172,319	-	172,319
Investment Income									
Realized gain (loss)	-	-	-	116,262	-	-	-	186,584	186,584
Unrealized gain (loss)	-	-	-	559,366	-	-	-	684,557	684,557
Endowment income	-	-	-	19,338	-	-	-	23,594	23,594
Total investment income (loss)	-	-	-	694,966	-	-	-	894,735	894,735
Total revenue	-	-	-	694,966	-	-	172,319	894,735	1,067,054
Expenditures									
Personal services	-	-	65,015	171,586	-	-	262,419	-	262,419
Fringe	-	-	23,340	-	-	-	30,051	-	30,051
Travel	-	-	-	-	-	-	47,484	-	47,484
Subrecipients	-	-	-	-	-	-	110,079	-	110,079
Supplies	-	-	1,920	-	-	-	296,892	-	296,892
Contractual	-	-	-	71,641	-	-	19	59,042	59,061
Other	-	-	120	-	-	-	49,193	-	49,193
Fixed Charges	-	-	4,057	-	-	-	1,069	-	1,069
Professional & Other Fees	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	137,421	-	137,421
Total expenditures	-	-	94,452	243,227	-	-	934,627	59,042	993,669
Excess (deficiency) of revenues over (under) expenditures	-	-	(94,452)	451,739	-	-	(762,308)	835,693	73,385
Transfers	-	-	184,422	(184,422)	-	-	363,316	(363,316)	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	4,000,000	1,500,000	-	1,156,226	5,000,000	2,000,000	159,108	1,857,434	9,016,542
Prior Period Adjustment	-	-	-	(157,916)	-	-	-	227,387	227,387
Beginning Fund Balances as Restated	4,000,000	1,500,000	-	998,310	5,000,000	2,000,000	159,108	2,084,821	9,243,929
Ending Fund Balances	\$ 4,000,000	\$ 1,500,000	\$ 89,970	\$ 1,265,627	\$ 5,000,000	\$ 2,000,000	\$ (239,884)	\$ 2,557,198	\$ 9,317,314

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Translational Cancer Therapeutics				Drug Discovery in Cancer					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	128,124	128,124	-	-	-	-	-
Total contribution revenue	-	-	-	128,124	128,124	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	222,186	222,186	-	-	-	204,753	204,753
Unrealized gain (loss)	-	-	-	550,299	550,299	-	-	-	505,178	505,178
Endowment income	-	-	-	36,933	36,933	-	-	-	34,050	34,050
Total investment income (loss)	-	-	-	809,418	809,418	-	-	-	743,981	743,981
Total revenue	-	-	-	937,542	937,542	-	-	-	743,981	743,981
Expenditures										
Personal services	-	-	-	166,492	166,492	-	-	-	85,469	85,469
Fringe	-	-	-	123,632	123,632	-	-	-	28,676	28,676
Travel	-	-	-	6,871	6,871	-	-	-	6,599	6,599
Subrecipients	-	-	-	139,014	139,014	-	-	-	65,751	65,751
Supplies	-	-	-	23,520	23,520	-	-	-	19,336	19,336
Contractual	-	-	-	57,440	57,440	-	-	-	74,567	74,567
Other	-	-	-	-	-	-	-	-	207	207
Fixed Charges	-	-	-	-	-	-	-	-	1,800	1,800
Professional & Other Fees	-	-	-	149	149	-	-	-	5,603	5,603
Equipment	-	-	-	25,921	25,921	-	-	-	1,532	1,532
Total expenditures	-	-	-	543,039	543,039	-	-	-	289,540	289,540
Excess (deficiency) of revenues over (under) expenditures	-	-	-	394,503	394,503	-	-	-	454,441	454,441
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	5,000,000	1,998,095	-	310,607	7,308,702	5,000,000	1,604,510	-	1,521,526	8,126,036
Prior Period Adjustment	-	-	-	907,916	907,916	-	-	-	(400,000)	(400,000)
Beginning Fund Balances as Restated	5,000,000	1,998,095	-	1,218,523	8,216,618	5,000,000	1,604,510	-	1,121,526	7,726,036
Ending Fund Balances	\$ 5,000,000	\$ 1,998,095	\$ -	\$ 1,613,026	\$ 8,611,121	\$ 5,000,000	\$ 1,604,510	\$ -	\$ 1,575,967	\$ 8,180,477

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Gastrointestinal Cancer Diagnostics				Vision Science					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	217,664	217,664	-	-	-	194,037	194,037
Unrealized gain (loss)	-	-	-	540,387	540,387	-	-	-	482,890	482,890
Endowment income	-	-	-	36,258	36,258	-	-	-	32,315	32,315
Total investment income (loss)	-	-	-	794,309	794,309	-	-	-	709,242	709,242
Total revenue	-	-	-	794,309	794,309	-	-	-	709,242	709,242
Expenditures										
Personal services	-	-	156,735	-	156,735	-	-	55,389	-	55,389
Fringe	-	-	56,268	-	56,268	-	-	19,885	-	19,885
Travel	-	-	-	-	-	-	-	7,901	-	7,901
Subrecipients	-	-	-	-	-	-	-	-	-	-
Supplies	-	-	74	-	74	-	-	12,850	-	12,850
Contractual	-	-	-	79,309	79,309	-	-	739	70,697	71,436
Other	-	-	-	-	-	-	-	1,296	-	1,296
Fixed Charges	-	-	-	-	-	-	-	-	-	-
Professional & Other Fees	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	4,077	-	4,077
Total expenditures	-	-	213,077	79,309	292,386	-	-	102,137	70,697	172,834
Excess (deficiency) of revenues over (under) expenditures	-	-	(213,077)	715,000	501,923	-	-	(102,137)	638,545	536,408
Transfers	-	-	299,209	(299,209)	-	-	-	317,932	(317,932)	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	5,000,000	2,000,000	533,234	1,439,148	8,972,382	4,500,000	1,883,774	787,737	1,274,040	8,445,551
Prior Period Adjustment	-	-	-	-	-	-	-	-	(32,311)	(32,311)
Beginning Fund Balances as Restated	5,000,000	2,000,000	533,234	1,439,148	8,972,382	4,500,000	1,883,774	787,737	1,241,729	8,413,240
Ending Fund Balances	\$ 5,000,000	\$ 2,000,000	\$ 619,366	\$ 1,854,939	\$ 9,474,305	\$ 4,500,000	\$ 1,883,774	\$ 1,003,532	\$ 1,562,342	\$ 8,949,648

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Clinical Effectiveness and Patient Safety				Molecular Proteomics in Cardiovascular Disease and Prevention					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	76,021	76,021	-	1,000	-	-	1,000
Total contribution revenue	-	-	-	76,021	76,021	-	1,000	-	-	1,000
Investment Income										
Realized gain (loss)	-	-	-	218,136	218,136	-	-	-	249,468	249,468
Unrealized gain (loss)	-	-	-	541,101	541,101	-	-	-	621,098	621,098
Endowment income	-	-	-	36,294	36,294	-	-	-	41,549	41,549
Total investment income (loss)	-	-	-	795,531	795,531	-	-	-	912,115	912,115
Total revenue	-	-	-	871,552	871,552	-	1,000	-	912,115	913,115
Expenditures										
Personal services	-	-	-	184,967	184,967	-	-	-	324,693	324,693
Fringe	-	-	-	66,067	66,067	-	-	-	116,633	116,633
Travel	-	-	-	11,107	11,107	-	-	-	2,471	2,471
Subrecipients	-	-	-	88,407	88,407	-	-	-	-	-
Supplies	-	-	-	837	837	-	-	-	1,460	1,460
Contractual	-	-	-	79,531	79,531	-	-	-	91,005	91,005
Other	-	-	-	-	-	-	-	-	-	-
Fixed Charges	-	-	-	-	-	-	-	-	-	-
Professional & Other Fees	-	-	-	90	90	-	-	-	29,875	29,875
Equipment	-	-	-	2,000	2,000	-	-	-	22,560	22,560
Total expenditures	-	-	-	433,006	433,006	-	-	-	6,027	6,027
Excess (deficiency) of revenues over (under) expenditures	-	-	-	438,546	438,546	-	1,000	-	317,391	318,391
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	5,000,000	2,000,000	-	933,103	7,933,103	5,000,000	3,517,805	1,197,319	1,429,691	11,144,815
Prior Period Adjustment	-	-	-	77,624	77,624	-	-	-	(671,421)	(671,421)
Beginning Fund Balances as Restated	5,000,000	2,000,000	-	1,010,727	8,010,727	5,000,000	3,517,805	1,197,319	758,270	10,473,394
Ending Fund Balances	\$ 5,000,000	\$ 2,000,000	\$ -	\$ 1,449,273	\$ 8,449,273	\$ 5,000,000	\$ 3,518,805	\$ 1,197,319	\$ 1,075,661	\$ 10,791,785

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Tobacco-Related Malignancy				Stroke				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	13,709	-	-	-	-	116,350	116,350
Total contribution revenue	<u>-</u>	<u>-</u>	<u>13,709</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>116,350</u>	<u>116,350</u>
Investment Income									
Realized gain (loss)	-	-	-	227,235	-	-	-	240,085	240,085
Unrealized gain (loss)	-	-	-	561,948	-	-	-	593,831	593,831
Endowment income	-	-	-	37,789	-	-	-	39,932	39,932
Total investment income (loss)	<u>-</u>	<u>-</u>	<u>-</u>	<u>826,972</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>873,848</u>	<u>873,848</u>
Total revenue	<u>-</u>	<u>-</u>	<u>13,709</u>	<u>826,972</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>990,198</u>	<u>990,198</u>
Expenditures									
Personal services	-	-	-	170,102	-	-	-	199,055	199,055
Fringe	-	-	-	87,276	-	-	-	61,085	61,085
Travel	-	-	-	70	-	-	-	1,918	1,918
Subrecipients	-	-	-	-	-	-	-	116,350	116,350
Supplies	-	-	-	31,894	-	-	-	4,250	4,250
Contractual	-	-	-	83,377	-	-	-	87,296	87,296
Other	-	-	-	3,351	-	-	-	-	-
Fixed Charges	-	-	-	3,226	-	-	-	-	-
Professional & Other Fees	-	-	-	-	-	-	-	5,810	5,810
Equipment	-	-	-	1,563	-	-	-	-	-
Total expenditures	<u>-</u>	<u>-</u>	<u>-</u>	<u>380,859</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>475,764</u>	<u>475,764</u>
Excess (deficiency) of revenues over (under) expenditures	-	-	13,709	446,113	-	-	-	514,434	514,434
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	5,000,000	1,671,812	1,623,904	1,081,175	5,000,000	2,500,000	654,251	1,080,989	9,235,240
Prior Period Adjustment	-	-	-	389,559	-	-	-	(8,564)	(8,564)
Beginning Fund Balances as Restated	5,000,000	1,671,812	1,623,904	1,470,734	5,000,000	2,500,000	654,251	1,072,425	9,226,676
Ending Fund Balances	<u>\$ 5,000,000</u>	<u>\$ 1,671,812</u>	<u>\$ 1,637,613</u>	<u>\$ 1,916,847</u>	<u>\$ 5,000,000</u>	<u>\$ 2,500,000</u>	<u>\$ 654,251</u>	<u>\$ 1,586,859</u>	<u>\$ 9,741,110</u>

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Renal Disease Biomarker				Cancer Stem Cell Biology and Therapy				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	250	-	-	-	2,100	-	-	2,100
Total contribution revenue	-	250	-	-	-	2,100	-	-	2,100
Investment Income									
Realized gain (loss)	-	-	-	193,980	-	-	-	206,621	206,621
Unrealized gain (loss)	-	-	-	481,623	-	-	-	509,851	509,851
Endowment income	-	-	-	32,298	-	-	-	34,331	34,331
Total investment income (loss)	-	-	-	707,901	-	-	-	750,803	750,803
Total revenue	-	250	-	707,901	-	2,100	-	750,803	752,903
Expenditures									
Personal services	-	-	-	126,667	-	-	-	12,445	12,445
Fringe	-	-	-	72,654	-	-	-	21,301	21,301
Travel	-	-	-	4,034	-	-	-	-	-
Subrecipients	-	-	13	-	-	-	-	-	-
Supplies	-	-	-	33,900	-	-	-	208,416	208,416
Contractual	-	-	-	70,720	-	-	-	75,326	75,326
Other	-	-	-	1,115	-	-	-	8,892	8,892
Fixed Charges	-	-	-	1,522	-	-	-	7,113	7,113
Professional & Other Fees	-	-	-	2,138	-	-	-	-	-
Equipment	-	-	-	28,610	-	-	-	40,153	40,153
Total expenditures	-	-	13	341,360	-	-	-	373,646	373,646
Excess (deficiency) of revenues over (under) expenditures	-	250	(13)	366,541	-	2,100	-	377,157	379,257
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	5,000,000	1,413,457	967,530	851,368	5,000,000	1,539,436	1,576,255	626,301	8,741,992
Prior Period Adjustment	-	-	-	204,415	-	-	-	(5,326)	(5,326)
Beginning Fund Balances as Restated	5,000,000	1,413,457	967,530	1,055,783	5,000,000	1,539,436	1,576,255	620,975	8,736,666
Ending Fund Balances	\$ 5,000,000	\$ 1,413,707	\$ 967,517	\$ 1,422,324	\$ 5,000,000	\$ 1,541,536	\$ 1,576,255	\$ 998,132	\$ 9,115,923

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Advanced Tissue Biofabrication				Medication Safety and Efficacy				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	65,888	-	65,888
Total contribution revenue	-	-	-	-	-	-	65,888	-	65,888
Investment Income									
Realized gain (loss)	-	-	-	203,085	-	-	-	80,373	80,373
Unrealized gain (loss)	-	-	-	502,116	-	-	-	198,243	198,243
Endowment income	-	-	-	33,748	-	-	-	13,353	13,353
Total investment income (loss)	-	-	-	738,949	-	-	-	291,969	291,969
Total revenue	-	-	-	738,949	-	-	65,888	291,969	357,857
Expenditures									
Personal services	-	-	-	65,381	-	-	-	3,850	3,850
Fringe	-	-	-	23,472	-	-	-	959	959
Travel	-	-	-	582	-	-	-	10,762	10,762
Subrecipients	-	-	-	126,568	-	-	-	71,489	71,489
Supplies	-	-	-	6,264	-	-	-	1,101	1,101
Contractual	-	-	-	74,002	-	-	-	29,252	29,252
Other	-	-	-	168	-	-	-	2,658	2,658
Fixed Charges	-	-	-	522	-	-	-	-	-
Professional & Other Fees	-	-	-	725	-	-	-	1,439	1,439
Equipment	-	-	-	-	-	-	-	217	217
Total expenditures	-	-	-	297,684	-	-	-	121,727	121,727
Excess (deficiency) of revenues over (under) expenditures	-	-	-	441,265	-	-	65,888	170,242	236,130
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	5,000,000	1,200,000	75,000	1,781,510	2,000,000	600,000	137,344	255,299	2,992,643
Prior Period Adjustment	-	-	-	(588,605)	-	-	-	2,686	2,686
Beginning Fund Balances as Restated	5,000,000	1,200,000	75,000	1,192,905	2,000,000	600,000	137,344	257,985	2,995,329
Ending Fund Balances	\$ 5,000,000	\$ 1,200,000	\$ 75,000	\$ 1,634,170	\$ 2,000,000	\$ 600,000	\$ 203,232	\$ 428,227	\$ 3,231,459

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Prostate Cancer Disparities				Lipidomics, Pathobiology and Therapy					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	146,255	146,255	-	-	-	248,148	248,148
Unrealized gain (loss)	-	-	-	360,046	360,046	-	-	-	618,148	618,148
Endowment income	-	-	-	24,276	24,276	-	-	-	41,351	41,351
Total investment income (loss)	-	-	-	530,577	530,577	-	-	-	907,647	907,647
Total revenue	-	-	-	530,577	530,577	-	-	-	907,647	907,647
Expenditures										
Personal services	-	-	-	20,293	20,293	-	-	-	138,202	138,202
Fringe	-	-	-	13,015	13,015	-	-	-	49,614	49,614
Travel	-	-	-	2,512	2,512	-	-	-	1,108	1,108
Subrecipients	-	-	-	76,484	76,484	-	-	-	-	-
Supplies	-	-	-	-	-	-	-	-	28,790	28,790
Contractual	-	-	-	53,232	53,232	-	-	-	90,439	90,439
Other	-	-	-	-	-	-	-	-	2,250	2,250
Fixed Charges	-	-	-	-	-	-	-	-	15,972	15,972
Professional & Other Fees	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	1,376	1,376	-	-	-	-	-
Total expenditures	-	-	-	166,912	166,912	-	-	-	326,375	326,375
Excess (deficiency) of revenues over (under) expenditures	-	-	-	363,665	363,665	-	-	-	581,272	581,272
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	3,600,000	1,080,000	9,769	773,545	5,463,314	5,000,000	3,451,075	(118,779)	492,836	8,825,132
Prior Period Adjustment	-	-	-	109,331	109,331	-	-	-	142,529	142,529
Beginning Fund Balances as Restated	3,600,000	1,080,000	9,769	882,876	5,572,645	5,000,000	3,451,075	(118,779)	635,365	8,967,661
Ending Fund Balances	\$ 3,600,000	\$ 1,080,000	\$ 9,769	\$ 1,246,541	\$ 5,936,310	\$ 5,000,000	\$ 3,451,075	\$ (118,779)	\$ 1,216,637	\$ 9,548,933

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Inflammation and Fibrosis				Translational Biomedical Informatics				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	3,335	2,375	-	-	-	-	-
Total contribution revenue	-	-	3,335	2,375	-	-	-	-	-
Investment Income									
Realized gain (loss)	-	-	-	220,704	-	-	-	75,542	75,542
Unrealized gain (loss)	-	-	-	549,428	-	-	-	188,096	188,096
Endowment income	-	-	-	36,779	-	-	-	12,586	12,586
Total investment income (loss)	-	-	-	806,911	-	-	-	276,224	276,224
Total revenue	-	-	3,335	809,286	-	-	-	276,224	276,224
Expenditures									
Personal services	-	-	-	62,562	-	-	-	-	-
Fringe	-	-	-	46,013	-	-	-	31,376	31,376
Travel	-	-	-	490	-	-	-	8,560	8,560
Subrecipients	-	-	-	-	-	-	-	-	-
Supplies	-	-	-	705	-	-	-	2,055	2,055
Contractual	-	-	-	80,576	-	-	-	27,518	27,518
Other	-	-	-	5,465	-	-	-	486	486
Fixed Charges	-	-	-	660	-	-	-	-	-
Professional & Other Fees	-	-	-	31,374	-	-	-	475	475
Equipment	-	-	-	-	-	-	-	6,241	6,241
Total expenditures	-	-	-	227,845	-	-	-	76,711	76,711
Excess (deficiency) of revenues over (under) expenditures	-	-	3,335	581,441	-	-	-	199,513	199,513
Transfers	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	4,999,999	2,279,049	2,369,981	830,831	2,000,000	600,000	741,884	114,554	3,456,438
Prior Period Adjustment	-	-	-	(2,223,930)	-	-	-	-	-
Beginning Fund Balances as Restated	4,999,999	2,279,049	2,369,981	(1,393,099)	2,000,000	600,000	741,884	114,554	3,456,438
Ending Fund Balances	\$ 4,999,999	\$ 2,279,049	\$ 2,373,316	\$ (811,658)	\$ 2,000,000	\$ 600,000	\$ 741,884	\$ 314,067	\$ 3,655,951

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 MEDICAL UNIVERSITY OF SOUTH CAROLINA
 STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
 YEAR ENDING JUNE 30, 2017**

	Total - Medical University of South Carolina				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue					
State funds	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	3,350	255,251	322,870	581,471
Total contribution revenue	<u>-</u>	<u>3,350</u>	<u>255,251</u>	<u>322,870</u>	<u>581,471</u>
Investment Income					
Realized gain (loss)	-	-	-	3,741,560	3,741,560
Unrealized gain (loss)	-	-	-	9,771,692	9,771,692
Endowment income	-	-	-	615,162	615,162
Total investment income (loss)	<u>-</u>	<u>-</u>	<u>-</u>	<u>14,128,414</u>	<u>14,128,414</u>
Total revenue	<u>-</u>	<u>3,350</u>	<u>255,251</u>	<u>14,451,284</u>	<u>14,709,885</u>
Expenditures					
Personal services	-	-	539,558	2,043,965	2,583,523
Fringe	-	-	129,544	850,267	979,811
Travel	-	-	55,385	72,815	128,200
Subrecipients	-	-	110,092	684,063	794,155
Supplies	-	-	311,736	464,771	776,507
Contractual	-	-	758	1,318,877	1,319,635
Other	-	-	50,609	48,176	98,785
Fixed Charges	-	-	5,126	75,010	80,136
Professional & Other Fees	-	-	-	92,650	92,650
Equipment	-	-	141,498	412,670	554,168
Total expenditures	<u>-</u>	<u>-</u>	<u>1,344,306</u>	<u>6,063,264</u>	<u>7,407,570</u>
Excess (deficiency) of revenues over (under) expenditures	-	3,350	(1,089,055)	8,388,020	7,302,315
Transfers	-	-	1,164,879	(1,164,879)	-
Cumulative Program Fund Balances					
Beginning Fund Balances as Previously Reported	88,099,999	34,993,629	12,145,464	20,212,425	155,451,517
Prior Period Adjustment	-	-	-	(2,379,676)	(2,379,676)
Beginning Fund Balances as Restated	88,099,999	34,993,629	12,145,464	17,832,749	153,071,841
Ending Fund Balances	<u>\$ 88,099,999</u>	<u>\$ 34,996,979</u>	<u>\$ 12,221,288</u>	<u>\$ 25,055,890</u>	<u>\$ 160,374,156</u>

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Nanostructures			Brain Imaging			Total
	State Endowment	Non-State Endowment	Non-State Expendable	State Endowment	Non-State Endowment	Non-State Expendable	
Contribution Revenue							
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-
Other Contributions/Revenue	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-
Investment Income							
Realized gain (loss)	-	-	-	61,971	-	-	61,971
Unrealized gain (loss)	-	-	-	285,861	-	-	285,861
Endowment income	-	-	-	35,433	-	-	35,433
Total investment income (loss)	-	-	-	383,265	-	-	383,265
Total revenue	-	-	-	383,265	-	-	383,265
Expenditures							
Personal services	-	-	-	119,281	-	-	119,281
Fringe	-	-	-	17,539	-	-	17,539
Travel	-	-	-	5,354	-	-	5,354
Supplies	-	-	-	57,961	-	-	57,961
Tuition assistance	-	-	-	26,676	-	-	26,676
Administrative fees	-	-	-	23,528	-	-	23,528
Other	-	-	-	48,722	-	-	48,722
Equipment	-	-	-	87,205	-	-	87,205
Total expenditures	-	-	-	386,266	-	-	386,266
Excess (deficiency) of revenues over (under) expenditures	-	-	-	(3,001)	-	-	(3,001)
Transfers	-	-	-	-	-	-	-
Cumulative Program Fund Balances							
Beginning Fund Balances as Previously Reported	4,000,000	1,631,274	-	1,148,627	2,089,589	-	7,609,095
Prior Period Adjustment	-	-	-	-	13,179	-	(13,179)
Beginning Fund Balances as Restated	4,000,000	1,631,274	-	1,148,627	2,102,768	-	7,609,095
Ending Fund Balances	\$ 4,000,000	\$ 1,631,274	\$ -	\$ 1,148,626	\$ 2,102,768	\$ -	\$ 7,427,383

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Polymer Nanocomposites				Hydrogen Fuel Cell Economy				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue									
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	2,800	14,500	250	-	-	-	-	-
Other Contributions/Revenue	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	2,800	14,500	250	-	-	-	-	-
Investment Income									
Realized gain (loss)	-	-	-	62,996	-	-	-	63,811	63,811
Unrealized gain (loss)	-	-	-	268,952	-	-	-	328,094	328,094
Endowment income	-	-	-	23,162	-	-	-	41,730	41,730
Total investment income (loss)	-	-	-	355,110	-	-	-	433,635	433,635
Total revenue	-	2,800	14,500	355,360	-	-	-	433,635	433,635
Expenditures									
Personal services	-	-	-	162,923	-	-	-	205,129	205,129
Fringe	-	-	-	8,784	-	-	-	49,371	49,371
Travel	-	-	2,821	3,516	-	-	-	1,757	1,757
Supplies	-	-	-	27,563	-	-	-	2,492	2,492
Tuition assistance	-	-	-	11,786	-	-	-	-	-
Administrative fees	-	-	-	23,919	-	-	-	24,226	24,226
Other	-	-	-	30,810	-	350,000	-	20,000	370,000
Equipment	-	-	1,506	9,349	-	-	-	-	-
Total expenditures	-	-	4,327	278,650	-	350,000	-	302,975	652,975
Excess (deficiency) of revenues over (under) expenditures	-	2,800	10,173	76,710	-	(350,000)	-	130,660	(219,340)
Transfers	-	-	-	8,551	-	-	-	-	-
Cumulative Program Fund Balances									
Beginning Fund Balances as Previously Reported	3,500,000	1,430,325	14,817	378,089	5,000,000	1,800,000	98,726	1,510,926	8,409,652
Prior Period Adjustment	-	9,287	(10,208)	(85,373)	-	50,000	(98,726)	76,963	28,237
Beginning Fund Balances as Restated	3,500,000	1,439,612	4,609	292,716	5,000,000	1,850,000	-	1,587,889	8,437,889
Ending Fund Balances	\$ 3,500,000	\$ 1,442,412	\$ 14,782	\$ 377,977	\$ 5,000,000	\$ 1,500,000	\$ -	\$ 1,718,549	\$ 8,218,549

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Tourism and Economic Development				Renewable Fuel Cells					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	-	-
Other Contributions/Revenue	-	-	-	277,382	277,382	-	-	-	-	-
Total contribution revenue	-	-	-	277,382	277,382	-	-	-	-	-
Investment Income										
Realized gain (loss)	-	-	-	50,179	50,179	-	-	-	58,328	58,328
Unrealized gain (loss)	-	-	-	184,028	184,028	-	-	-	239,768	239,768
Endowment income	-	-	-	18,416	18,416	-	-	-	24,127	24,127
Total investment income (loss)	-	-	-	252,623	252,623	-	-	-	322,223	322,223
Total revenue	-	-	-	530,005	530,005	-	-	-	322,223	322,223
Expenditures										
Personal services	-	-	-	343,089	343,089	-	-	-	184,053	184,053
Fringe	-	-	-	47,584	47,584	-	-	-	15,909	15,909
Travel	-	-	-	27,680	27,680	-	-	-	41,597	41,597
Supplies	-	-	-	4,753	4,753	-	-	-	48,424	48,424
Tuition assistance	-	-	-	74,306	74,306	-	-	-	18,917	18,917
Administrative fees	-	-	-	19,051	19,051	-	-	-	22,144	22,144
Other	-	-	-	21,907	21,907	-	-	-	31,498	31,498
Equipment	-	-	-	224	224	-	-	-	76	76
Total expenditures	-	-	-	538,594	538,594	-	-	-	362,618	362,618
Excess (deficiency) of revenues over (under) expenditures	-	-	-	(8,589)	(8,589)	-	-	-	(40,395)	(40,395)
Transfers	-	-	-	-	-	-	-	-	(8,551)	(8,551)
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	2,000,000	1,363,600	87	375,412	3,739,099	3,000,000	1,200,000	-	578,563	4,778,563
Prior Period Adjustment	-	46,400	-	(46,400)	-	-	-	-	-	-
Beginning Fund Balances as Restated	2,000,000	1,410,000	87	329,012	3,739,099	3,000,000	1,200,000	-	578,563	4,778,563
Ending Fund Balances	\$ 2,000,000	\$ 1,410,000	\$ 87	\$ 320,423	\$ 3,739,510	\$ 3,000,000	\$ 1,200,000	\$ -	\$ 529,617	\$ 4,729,617

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Solid Oxide Fuel Cells				Childhood Neurotherapeutics					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-	80,000	80,000
Other Contributions/Revenue	-	-	-	-	-	-	-	-	-	-
Total contribution revenue	-	-	-	-	-	-	-	-	80,000	80,000
Investment Income										
Realized gain (loss)	-	-	-	4,701	4,701	-	-	-	114,082	114,082
Unrealized gain (loss)	-	-	-	155,577	155,577	-	-	-	435,733	435,733
Endowment income	-	-	-	7,353	7,353	-	-	-	42,527	42,527
Total investment income (loss)	-	-	-	167,631	167,631	-	-	-	592,342	592,342
Total revenue	-	-	-	167,631	167,631	-	-	-	672,342	672,342
Expenditures										
Personal services	-	-	-	88,355	88,355	-	-	-	160,339	160,339
Fringe	-	-	-	18,865	18,865	-	-	-	46,122	46,122
Travel	-	-	-	-	-	-	-	-	16,786	16,786
Supplies	-	-	-	8,262	8,262	-	-	-	53,466	53,466
Tuition assistance	-	-	-	-	-	-	-	-	3,199	3,199
Administrative fees	-	-	-	1,785	1,785	-	-	-	43,312	43,312
Other	-	-	-	2,051	2,051	-	-	-	80,723	80,723
Equipment	-	-	-	-	-	-	-	-	479,024	479,024
Total expenditures	-	-	-	119,318	119,318	-	-	-	882,971	882,971
Excess (deficiency) of revenues over (under) expenditures	-	-	-	48,313	48,313	-	-	-	(210,629)	(210,629)
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	3,000,000	900,000	-	329,995	4,229,995	5,000,000	2,500,000	-	1,210,336	8,710,336
Prior Period Adjustment	-	-	-	-	-	-	2,066	-	(2,066)	-
Beginning Fund Balances as Restated	3,000,000	900,000	-	329,995	4,229,995	5,000,000	2,502,066	-	1,208,270	8,710,336
Ending Fund Balances	\$ 3,000,000	\$ 900,000	\$ -	\$ 378,308	\$ 4,278,308	\$ 5,000,000	\$ 2,502,066	\$ -	\$ 997,641	\$ 8,499,707

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Rehabilitation and Reconstruction Science			Strategic Approaches to Electricity Production from Coal				
	State Endowment	Non-State Endowment	Non-State Expendable	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue								
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-	-
Other Contributions/Revenue	-	-	-	-	-	248,755	-	248,755
Total contribution revenue	-	-	-	-	-	248,755	-	248,755
Investment Income								
Realized gain (loss)	-	-	-	-	-	-	105,021	105,021
Unrealized gain (loss)	-	-	-	-	-	-	416,331	416,331
Endowment income	-	-	11,390	-	-	-	47,350	47,350
Total investment income (loss)	-	-	11,390	-	-	-	568,702	568,702
Total revenue	-	-	11,390	-	-	248,755	568,702	817,457
Expenditures								
Personal services	-	-	-	-	-	21,807	218,937	240,744
Fringe	-	-	-	-	-	3,847	37,839	41,686
Travel	-	-	-	-	-	1,367	52,002	53,369
Supplies	-	-	-	-	-	87,292	7,802	95,094
Tuition assistance	-	-	-	-	-	-	15,469	15,469
Administrative fees	-	-	-	-	-	-	39,871	39,871
Other	-	-	-	-	-	241,204	10,396	251,600
Equipment	-	-	-	-	-	-	121,927	121,927
Total expenditures	-	-	-	-	-	355,517	504,243	859,760
Excess (deficiency) of revenues over (under) expenditures	-	-	11,390	-	-	(106,762)	64,459	(42,303)
Transfers	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances								
Beginning Fund Balances as Previously Reported	5,000,000	2,798,027	1,500,000	5,000,000	2,503,500	175,607	1,243,736	8,922,843
Prior Period Adjustment	-	(1,298,027)	14,336	-	11,500	-	(11,500)	-
Beginning Fund Balances as Restated	5,000,000	1,500,000	1,514,336	5,000,000	2,515,000	175,607	1,232,236	8,922,843
Ending Fund Balances	\$ 5,000,000	\$ 1,500,000	\$ 1,525,726	\$ 5,000,000	\$ 2,515,000	\$ 68,845	\$ 1,296,695	\$ 8,880,540

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Healthcare Quality			Senior SMART™ Center				
	State Endowment	Non-State Endowment	Non-State Expendable	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue								
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	4,050	41,280	45,330
Other Contributions/Revenue	-	-	-	-	-	4,580	-	4,580
Total contribution revenue	-	-	-	-	-	8,630	41,280	49,910
Investment Income								
Realized gain (loss)	-	-	-	-	-	-	80,507	80,507
Unrealized gain (loss)	-	-	-	-	-	-	363,844	363,844
Endowment income	-	-	-	-	-	-	31,654	31,654
Total investment income (loss)	-	-	-	-	-	-	476,005	476,005
Total revenue	-	-	-	-	-	8,630	517,285	525,915
Expenditures								
Personal services	-	-	-	-	-	-	51,136	51,136
Fringe	-	-	-	-	-	-	3,179	3,179
Travel	-	-	-	-	-	1,705	16,383	18,088
Supplies	-	-	-	-	-	12,618	49,643	62,261
Tuition assistance	-	-	-	-	-	-	30,565	30,565
Administrative fees	-	-	-	-	-	-	347,226	351,190
Other	-	-	-	-	-	3,964	-	-
Equipment	-	-	-	-	-	-	-	-
Total expenditures	-	-	-	-	-	18,287	498,132	516,419
Excess (deficiency) of revenues over (under) expenditures	-	-	-	-	-	(9,657)	19,153	9,496
Transfers	-	-	-	-	-	5,000	(5,000)	-
Cumulative Program Fund Balances								
Beginning Fund Balances as Previously Reported	5,000,000	2,000,000	-	5,000,000	2,000,000	34,612	816,881	7,851,493
Prior Period Adjustment	-	-	-	-	-	-	(81,029)	(81,029)
Beginning Fund Balances as Restated	5,000,000	2,000,000	-	5,000,000	2,000,000	34,612	735,852	7,770,464
Ending Fund Balances	\$ 5,000,000	\$ 2,000,000	\$ -	\$ 5,000,000	\$ 2,000,000	\$ 29,955	\$ 750,005	\$ 7,779,960

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Nanoevironmental Research and Risk Assessment			Nuclear Science and Energy			Total
	State Endowment	Non-State Endowment	Non-State Expendable	State Endowment	Non-State Endowment	Non-State Expendable	
Contribution Revenue							
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	-
Other Contributions/Revenue	-	-	46,875	-	-	-	-
Total contribution revenue	-	-	46,875	-	-	-	-
Investment Income							
Realized gain (loss)	-	-	-	-	-	-	45,392
Unrealized gain (loss)	-	-	-	-	-	-	212,067
Endowment income	-	-	19,507	-	-	-	21,499
Total investment income (loss)	-	-	289,150	-	-	-	278,958
Total revenue	-	-	336,025	-	-	-	278,958
Expenditures							
Personal services	-	-	-	-	-	-	96,750
Fringe	-	-	164,354	-	-	-	11,187
Travel	-	-	29,750	-	-	-	16,344
Supplies	-	-	29,166	-	-	-	18,370
Tuition assistance	-	-	5,684	-	-	-	-
Administrative fees	-	-	-	-	-	-	17,232
Other	-	-	18,705	-	-	-	-
Equipment	-	-	9,224	-	105,050	124,062	-
Total expenditures	-	-	256,883	-	105,050	124,062	159,883
Excess (deficiency) of revenues over (under) expenditures	-	-	77,022	-	(105,050)	(124,062)	119,075
Transfers	-	-	-	-	-	-	-
Cumulative Program Fund Balances							
Beginning Fund Balances as Previously Reported	3,000,000	1,000,000	4,468,847	3,000,000	1,010,050	124,062	545,375
Prior Period Adjustment	-	-	-	-	-	-	(70,000)
Beginning Fund Balances as Restated	3,000,000	1,000,000	4,468,847	3,000,000	1,010,050	124,062	475,375
Ending Fund Balances	\$ 3,000,000	\$ 1,000,000	\$ 4,545,869	\$ 3,000,000	\$ 905,000	\$ -	\$ 594,450

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	General Atomics Center for the Development of Translational Nuclear Technology				Healthful Lifestyles					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	3,040	-	-	-	3,040
Other Contributions/Revenue	-	-	-	-	-	-	3,040	-	-	-
Total contribution revenue	-	-	-	-	-	3,040	3,040	-	-	3,040
Investment Income										
Realized gain (loss)	-	-	-	56,937	56,937	-	-	-	20,772	20,772
Unrealized gain (loss)	-	-	-	236,791	236,791	-	-	-	159,432	159,432
Endowment income	-	-	-	27,168	27,168	-	-	-	12,849	12,849
Total investment income (loss)	-	-	-	320,896	320,896	-	-	-	193,053	193,053
Total revenue	-	-	-	320,896	320,896	3,040	3,040	-	193,053	196,093
Expenditures										
Personal services	-	-	-	21,326	21,326	-	-	-	20,000	20,000
Fringe	-	-	-	3,911	3,911	-	-	-	3,741	3,741
Travel	-	-	-	20,187	20,187	-	-	-	-	-
Supplies	-	-	-	18,440	18,440	-	-	-	1,527	1,527
Tuition assistance	-	-	-	-	-	-	-	-	-	-
Administrative fees	-	-	-	21,616	21,616	-	-	-	7,890	7,890
Other	-	-	-	2,366	2,366	-	390,269	-	222,978	613,247
Equipment	-	-	-	-	-	-	-	-	-	-
Total expenditures	-	-	-	87,846	87,846	-	390,269	-	256,136	646,405
Excess (deficiency) of revenues over (under) expenditures	-	-	-	233,050	233,050	-	(387,229)	-	(63,083)	(450,312)
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	3,000,000	1,230,000	-	584,215	4,814,215	3,000,000	907,000	-	517,419	4,424,419
Prior Period Adjustment	-	180,000	-	(180,000)	-	-	(61,731)	-	57,731	(4,000)
Beginning Fund Balances as Restated	3,000,000	1,410,000	-	404,215	4,814,215	3,000,000	845,269	-	575,150	4,420,419
Ending Fund Balances	\$ 3,000,000	\$ 1,410,000	\$ -	\$ 637,265	\$ 5,047,265	\$ 3,000,000	\$ 458,040	\$ -	\$ 512,067	\$ 3,970,107

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Data Analysis, Simulation, Imaging, and Visualization				Multiphysics Heterogeneous Engineered Materials Center					
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue										
State funds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	-	-	-	-	-	750,000	-	-	750,000
Other Contributions/Revenue	-	-	-	-	-	-	750,000	-	-	750,000
Total contribution revenue	-	-	-	-	-	-	750,000	-	-	750,000
Investment Income										
Realized gain (loss)	-	-	-	67,361	67,361	-	-	-	148,083	148,083
Unrealized gain (loss)	-	-	-	220,822	220,822	-	-	-	393,449	393,449
Endowment income	-	-	-	33,561	33,561	-	-	-	52,834	52,834
Total investment income (loss)	-	-	-	321,744	321,744	-	-	-	594,366	594,366
Total revenue	-	-	-	321,744	321,744	-	750,000	-	594,366	1,344,366
Expenditures										
Personal services	-	-	-	-	-	-	-	-	46,984	46,984
Fringe	-	-	-	-	-	-	-	-	5,900	5,900
Travel	-	-	-	-	-	-	-	-	4,971	4,971
Supplies	-	-	-	-	-	-	-	-	47,838	47,838
Tuition assistance	-	-	-	-	-	-	-	-	10,963	10,963
Administrative fees	-	-	-	25,575	25,575	-	-	-	51,201	51,201
Other	-	-	-	-	-	-	-	-	1,200	1,200
Equipment	-	-	-	-	-	-	-	-	-	-
Total expenditures	-	-	-	25,575	25,575	-	-	-	169,057	169,057
Excess (deficiency) of revenues over (under) expenditures	-	-	-	296,169	296,169	-	750,000	-	425,309	1,175,309
Transfers	-	-	-	-	-	-	-	-	-	-
Cumulative Program Fund Balances										
Beginning Fund Balances as Previously Reported	2,000,000	1,582,098	-	947,475	4,529,573	2,000,000	3,000,000	-	1,084,860	6,084,860
Prior Period Adjustment	-	-	-	-	-	-	-	-	(1,000,000)	(1,000,000)
Beginning Fund Balances as Restated	2,000,000	1,582,098	-	947,475	4,529,573	2,000,000	3,000,000	-	84,860	5,084,860
Ending Fund Balances	\$ 2,000,000	\$ 1,582,098	\$ -	\$ 1,243,644	\$ 4,825,742	\$ 2,000,000	\$ 3,750,000	\$ -	\$ 510,169	\$ 6,260,169

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
STATEMENT OF PROGRAM REVENUES, EXPENDITURES AND CHANGES IN FUND BALANCES
YEAR ENDING JUNE 30, 2017**

	Total - University of South Carolina				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue					
State funds	\$ -	\$ -	\$ -	\$ -	\$ -
Non-state matching funds	-	755,840	18,550	121,530	895,920
Other Contributions/Revenue	-	-	253,335	506,829	760,164
Total contribution revenue	-	755,840	271,885	628,359	1,656,084
Investment Income					
Realized gain (loss)	-	-	-	1,227,612	1,227,612
Unrealized gain (loss)	-	-	-	5,205,535	5,205,535
Endowment income	-	-	11,390	536,518	547,908
Total investment income (loss)	-	-	11,390	6,969,665	6,981,055
Total revenue	-	755,840	283,275	7,598,024	8,637,139
Expenditures					
Personal services	-	-	21,807	2,632,864	2,654,671
Fringe	-	-	3,847	455,412	459,259
Travel	-	-	5,893	264,437	270,330
Supplies	-	-	99,910	371,337	471,247
Tuition assistance	-	-	-	199,566	199,566
Administrative fees	-	-	-	461,053	461,053
Other	-	845,319	371,350	1,983,471	3,200,140
Equipment	-	-	1,506	718,600	720,106
Total expenditures	-	845,319	504,313	7,086,740	8,436,372
Excess (deficiency) of revenues over (under) expenditures	-	(89,479)	(221,038)	511,284	200,767
Transfers	-	-	5,000	(5,000)	-
Cumulative Program Fund Balances					
Beginning Fund Balances as Previously Reported	66,500,000	30,945,463	1,950,031	13,668,420	113,063,914
Prior Period Adjustment	-	(1,047,326)	(94,598)	(128,301)	(1,270,225)
Beginning Fund Balances as Restated	66,500,000	29,898,137	1,855,433	13,540,119	111,793,689
Ending Fund Balances	\$ 66,500,000	\$ 29,808,658	\$ 1,639,395	\$ 14,046,403	\$ 111,994,456

See notes to financial statements.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
YEAR ENDED JUNE 30, 2017**

Notes to Financial Statements

Note 1. Description of Program

The South Carolina Research Centers of Economic Excellence Act (the Act) was introduced by Chapter 75 of Act No. A356 and passed by the South Carolina General Assembly during the 2002 legislative session. The Act was established to create the South Carolina Centers of Economic Excellence (the Program or SmartState) and the Centers of Excellence Matching Endowment, which originally was to be funded annually by appropriations from the South Carolina Education Lottery in an aggregate amount not to exceed \$ 200 million by 2010. During the year ended June 30, 2009, the South Carolina General Assembly revised the Act to provide for \$ 30 million in guaranteed funding each year if (a) the lottery scholarships have been funded, and (b) at least 80% of all appropriations have been awarded by the Review Board through the most recent previous fiscal year. In addition, the Act created the Research Centers of Excellence Review Board (the Review Board), which is responsible for awarding state matching funds, for oversight and operation of the fund, and for various accountability requirements established in the statute for the Program. The Review Board consists of eleven members. Of these eleven members, three must be appointed by the Governor of South Carolina, three must be appointed by the President Pro Tempore of the South Carolina Senate, three must be appointed by the Speaker of the South Carolina House of Representatives, one member each must be appointed by the Chair of the Senate Finance Committee and the Chair of the House Ways and Means Committee. The Presidents of the senior research universities of the State of South Carolina (Clemson University, the Medical University of South Carolina, and the University of South Carolina) serve as ex-officio non-voting members.

The purpose of the Act is to create incentives for the senior research universities of South Carolina to raise capital from the private sector to fund endowments for professorships in research areas targeted to create well-paying jobs and enhanced economic opportunities for the people of South Carolina. Non-state funds are used to match dollar-for-dollar funds appropriated by the General Assembly from the South Carolina Education Lottery. The program's intent is to provide \$ 30 million annually in South Carolina Education Lottery appropriations if (a) the lottery scholarships have been funded, and (b) at least 80% of all appropriations have been awarded by the Review Board through the most recent previous fiscal year. These state appropriations are to be matched by the institutions.

The endowed professorships are awarded to the senior research universities through a competitive application process, which encourages collaboration among the three research universities as well as with other South Carolina institutions of higher education. Awards from the Centers of Excellence Matching Endowment are to be not less than \$ 2 million and not more than \$ 5 million. Non-state matching funds are to be raised exclusively from sources other than South Carolina tax dollars, and committed and raised subsequent to January 1, 2002. The Research Centers of Economic Excellence Act was amended March 17, 2004, adding Section 90, which allows the research institutions to use federal funds received after July 1, 2003, as non-state matching funds. The Research Centers of Economic Excellence Act was further amended on June 25, 2008, adding Section 100, which allows the Review Board to use a portion (as determined by the Review Board) of the non-state match to pay for Center operating costs and which requires that the full state award of any dissolved or withdrawn Center be returned to the Centers of Excellence Matching Endowment. Section 110 was also added on June 25, 2008, which provided the eligibility of in-kind contributions as non-state matches.

In 2010, the General Assembly amended the Research Centers of Economic Excellence Act to create a new type of SmartState Award to be made in concert with the South Carolina Department of Commerce. One-quarter of the unallocated Centers of Excellence Matching Endowment funds is dedicated for funding such "SmartState Commerce Awards." SmartState Commerce Awards may not individually exceed \$ 2 million and do not require the dollar-for-dollar non-state match of Standard SmartState awards. In place of a matching requirement, the Secretary of Commerce is required to certify that a "significant capital investment" has been made in the related research field of a proposed SmartState Commerce Award professorial endowment; the intent of SmartState Commerce Award endowment is to "directly support the industry." These revisions became effective January 1, 2011.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
YEAR ENDED JUNE 30, 2017**

Notes to Financial Statements

Note 2. Summary of Significant Accounting Policies

Basis of presentation and method of accounting: The Program’s financial statements are presented on the accrual basis of accounting. Revenues are recorded in the period earned, and expenses are recorded at the time liabilities are incurred. In as much as state funds are not disbursed until cash gifts are in hand, a pledge received in support of a Center is not recognized as revenue until the pledge has been satisfied.

Property and equipment: Property and equipment purchased with program funds is deemed to be the property of the respective research institution.

Assets available for program use: State funds committed for Program use are permanently restricted, as well as 30% of the non-state matching funds of each Center of Economic Excellence, as endowment funds. Earnings from the endowments funds may be expended for direct program purposes, as well as any non-state matching funds that exceed the 30% endowment requirement. In-kind contributions of real property, equipment, supplies and other expendable property, and the value of goods and services directly benefiting and specifically identifiable to a project or program may be used to satisfy non-state matching requirements, but may not account for more than 70% of the non-state match total for each proposal.

Use of estimates: The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Federal grants used as non-state matching funds: Federal grants used as non-state matching funds by the research institutions are not reflected in the statements of program revenues and expenditures. Such funds are maintained separately from the Program by the research institutions. See Note 4 for additional information.

Note 3. Assets Maintained by Research Institutions

The assets resulting from program activities are maintained by the research institutions, and are held by the universities, their respective foundations, or by the State Treasurer. At June 30, 2017, cash and investments maintained by the research institutions for program purposes was as follows:

Clemson University	\$ 111,745,797
Medical University of South Carolina	160,374,156
University of South Carolina	111,994,456
Total	\$ 384,114,409

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
YEAR ENDED JUNE 30, 2017**

Notes to Financial Statements

Note 4. Proposals Using Federal Grants for Non-State Matching Funds

As described in Note 2, federal grants are eligible for use as non-state matching funds, but are not included in the statements of program revenues and expenses. The following table displays the total federal awards that have qualified as non-state matching funds and those that have been used toward the non-state match for each proposal as of June 30, 2017:

<u>Institution</u>	<u>Proposal</u>	<u>Federal Grants used as Non-State Matching Funds</u>	
		<u>Total Qualifying As Non-State Match</u>	<u>Amount Used As Non-State Match</u>
Clemson	Optical Materials	\$ 772,961	\$ 772,961
Clemson	Sustainable Development	1,313,439	1,000,000
Clemson	Advanced Fiber-Based Materials	310,000	310,000
MUSC	Proteomics	1,375,919	1,265,030
MUSC	Marine Genomics	2,927,730	2,208,577
MUSC	Translational Cancer Therapeutics	6,174,089	3,001,905
MUSC	Cancer Drug Discovery	6,292,518	3,395,490
MUSC	Gastrointestinal Cancer	3,221,264	2,438,472
MUSC	Vision Science	1,956,478	1,476,419
MUSC	Tobacco-Related Malignancies	3,221,264	2,402,853
MUSC	Renal Disease Biomarkers	268,520	254,406
MUSC	Cancer Stem Cell	2,457,288	1,851,876
MUSC	Advanced Tissue Biofabrication	2,578,100	2,502,146
MUSC	Lipidomics	1,624,983	1,523,925
USC	Nanostructures	1,444,820	1,444,820
USC	Brain Imaging	1,336,000	1,336,000
USC	Polymer Nanocomposites	2,020,110	2,020,110
USC	Hydrogen Fuel Cell Economy	661,451	661,451
USC	Renewable Fuel Cells	970,516	970,516
USC	Solid Oxide Fuel Cells	1,106,179	1,106,179
USC	Childhood Neurotherapeutics	1,243,106	1,243,106
USC	Data Analysis	533,444	533,444
USC	Nanoenvironmental Research and Assessment	731,822	731,822
USC	Nuclear Science and Energy	848,512	842,408
USC	General Atomics Center for the Development of Translational Nuclear Technology	1,105,531	1,105,531
		<u>\$ 46,496,044</u>	<u>\$ 36,399,447</u>

Note 5. Restatement of Fund Balances

Management became aware in 2017 that, at June 30, 2016, the consolidated fund balances were overstated by \$ 3,649,901. As a result, the consolidated cumulative program fund balances for the year ended June 30, 2016, were restated.

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
YEAR ENDED JUNE 30, 2017**

Notes to Financial Statements

Note 5. Restatement of Fund Balances (Continued)

A summary of the restatement is shown below:

<u>Fund Balances</u>	<u>As Reported</u>	<u>Adjustment</u>	<u>As Restated</u>
MUSC	\$ 155,451,517	\$ (2,379,676)	\$ 153,071,841
USC	<u>113,063,914</u>	<u>(1,270,225)</u>	<u>111,793,689</u>
	<u>\$ 268,515,431</u>	<u>\$ (3,649,901)</u>	<u>\$ 264,865,530</u>

Note 6. Reclassifications

Certain reclassifications of fiscal year 2016 amounts were made on the Statement of Program Revenues and Expenditures. These reclassifications have no effect on the change in net assets.

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Review Board
South Carolina Centers of Economic Excellence
Columbia, South Carolina

We have audited the Statements of Program Revenues, Expenditures and Changes in Fund Balances of the South Carolina Centers of Economic Excellence for the year ended June 30, 2017, and have issued our report thereon dated October 13, 2017. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Internal Control Over Financial Reporting

In planning and performing our audit, we considered South Carolina Centers of Economic Excellence's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Program's internal control. Accordingly, we do not express an opinion on the effectiveness of the Program's internal control.

A *control deficiency* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A *significant deficiency* is a control deficiency, or combination of control deficiencies, that adversely affects the entity's ability to initiate, authorize, record, process or report financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the entity's financial statements that is more than inconsequential will not be prevented or detected by the entity's internal control.

A *material weakness* is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the financial statements will not be prevented or detected by the entity's internal control.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and would not necessarily identify all deficiencies in internal control that might be significant deficiencies or material weaknesses. We identified one deficiency in internal control over financial reporting that is described in the accompanying schedule of findings and responses as 2017-001. We consider this deficiency to be a significant deficiency, as defined above.

The Programs' Response to Findings

The Programs' response to the finding identified in our audit are described in the accompanying schedule of findings and responses. The Programs' response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on the response.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether South Carolina Centers of Economic Excellence's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

This report is intended solely for the information of management, the Review Board, and the General Assembly and is not intended to be and should not be used by anyone other than those specified parties.

Derrick, Stubbs & Stith, LLP

Columbia, South Carolina
October 13, 2017

**SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
 SCHEDULE OF FINDINGS AND RESPONSES
 YEAR ENDED JUNE 30, 2017**

I. SUMMARY OF AUDITOR'S RESULTS

Financial Statements

Type of auditor's report issued:	Unmodified
Internal control over financial reporting:	
Material weakness(es) identified?	None Identified
Significant deficiency(ies) identified?	One Identified
Noncompliance material to the financial statements noted?	None Reported

II. FINANCIAL STATEMENT FINDINGS

One Reported

2017-001 – Monitoring Controls

Significant deficiency

Condition and criteria: Internal controls over financial monitoring should be in place to provide reasonable assurance to the completeness and accuracy of the financial activity.

Effect: Controls over financial monitoring are not designed effectively. A material misstatement to the Program's financial statements could occur and not be prevented or detected by the Program's internal controls over financial reporting.

Cause: Currently, the controls over financial monitoring are not designed effectively. Multiple errors were discovered in the financial statement support schedules prepared by the Medical University of South Carolina SmartState. These errors were primarily data omissions, and formula errors in the financial statement supporting schedules. We also noted that the supplemental schedules to the financial statements were not reconciled to the total summary to assure completeness of the information.

Auditors' recommendation: We recommend that management implement procedures to assure the accuracy and the completeness of the annual financial statement supporting schedules.

Auditees' response: We agree with the comments above. We will make certain that internal controls are in place and reports are reviewed before audit in the future.

**South Carolina Centers
of Economic Excellence**

**Report to the
Review Board**

June 30, 2017

To the Review Board
South Carolina Centers of Economic Excellence
Columbia, South Carolina

We are pleased to present this report related to our audit of the financial statements of South Carolina Centers of Economic Excellence for the year ended June 30, 2017. This report summarizes certain matters required by professional standards to be communicated to you in your oversight responsibility for South Carolina Centers of Economic Excellence's financial reporting process.

This report is intended solely for the information and use of management, the Review Board and General Assembly and is not intended to be and should not be used by anyone other than these specified parties. It will be our pleasure to respond to any questions you have regarding this report. We appreciate the opportunity to continue to be of service to South Carolina Centers of Economic Excellence.

Derrick, Stubbs & Stith, LLP

Columbia, South Carolina
October 13, 2017

Contents

Required Communications	1 - 2
Certain Written Communications Between Management and Our Firm	
Arrangement Letter	3 - 6
Representation Letter – S.C. Centers of Economic Excellence	7 - 10
Representation Letter – Clemson University	11 - 16
Representation Letter – Medical University of South Carolina	17 - 20
Representation Letter – University of South Carolina	21 - 25

Required Communications

Generally accepted auditing standards (AU-C 260, *The Auditor's Communication With Those Charged With Governance*) require the auditor to promote effective two-way communication between the auditor and those charged with governance. Consistent with this requirement, the following summarizes our responsibilities regarding the financial statement audit as well as observations arising from our audit that are significant and relevant to your responsibility to oversee the financial reporting process.

Area	Comments
Auditor's Responsibility Under Professional Standards	Our audit of the financial statements of South Carolina Centers of Economic Excellence (Program) was conducted in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable rather than absolute assurance about whether the financial statements are free of material misstatement whether caused by error or fraud. An audit of financial statements includes obtaining an understanding of internal control sufficient to plan the audit and to determine the nature, timing and extent of audit procedures to be performed.
Accounting Practices	Adoption of, or Change in, Accounting Policies Management has the ultimate responsibility for the appropriateness of the accounting policies used by the Program. The Program did not adopt any significant new accounting policies nor have there been any changes in existing significant accounting policies during the current period. Significant or Unusual Transactions We did not identify any significant or unusual transactions or significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus. Alternative Treatments Discussed with Management We did not discuss with management any alternative treatments within generally accepted accounting principles for accounting policies and practices related to material items during the current audit period.
Management's Judgments and Accounting Estimates	The financial statements do not contain any significant estimates.
Financial Statement Disclosures	In various conversations during our audit, we discussed various financial statement disclosures. No disclosures are known that are not consistent with previous years' disclosures.
Audit Adjustments	There were no recorded audit adjustments.
Uncorrected Misstatements	There were no significant unrecorded misstatements noted during the audit.
Disagreements with Management	We encountered no disagreements with management over the application of significant accounting principles, the basis for management's judgments on any significant matters, the scope of the audit or significant disclosures to be included in the financial statements.
Consultations with Other Accountants	We are not aware of any consultations management had with other accountants about accounting or auditing matters.

Area	Comments
Significant Issues Discussed with Management	No significant issues arising from the audit were discussed or were the subject of correspondence with management.
Difficulties Encountered Performing the Audit	We did not encounter any difficulties in dealing with management during the audit.
Communication of Significant Deficiencies and Material Weaknesses	We have separately communicated the significant deficiency identified during the audit of the financial statements and this communication is part of the Compliance section in the June 30, 2017, Compliance report.
Certain Written Communications Between Management and Our Firm	Copies of certain written communications between our Firm and the management of the Program are on Pages 3 - 25.

April 6, 2017

South Carolina Centers of Economic Excellence Review Board
c/o Mr. Jason Premo
South Carolina Commission on Higher Education
1122 Lady Street, Suite 300
Columbia, South Carolina 29201

Attention: Mr. Premo

The Objective and Scope of the Audit of the Financial Statements

You have requested that audit South Carolina Centers of Economic Excellence Program's governmental activities, business-type activities, aggregate discretely presented component units, each major fund, and aggregate remaining fund information as of and for the year ended June 30, 2017, which collectively comprise the basic financial statements. We are pleased to confirm our acceptance and our understanding of this audit engagement by means of this letter.

Our audit will be conducted with the objective of our expressing an opinion on the financial statements.

The Responsibilities of the Auditor

We will conduct our audit in accordance with auditing standards generally accepted in the United States of America (GAAS). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

Because of the inherent limitations of an audit, together with the inherent limitations of internal control, an unavoidable risk that some material misstatements may not be detected exists, even though the audit is properly planned and performed in accordance with GAAS. Also, an audit is not designed to detect errors or fraud that are immaterial to the financial statements.

In making our risk assessments, we consider internal control relevant to the Program's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. However, we will communicate to you in writing concerning any significant deficiencies or material weaknesses in internal control relevant to the audit of the financial statements that we have identified during the audit.

We will also communicate to the Audit Committee (a) any fraud involving senior management and fraud (whether caused by senior management or other employees) that causes a material misstatement of the financial statements that becomes known to us during the audit, and (b) any instances of noncompliance with laws and regulations that we become aware of during the audit (unless they are clearly inconsequential).

The funds that you have told us are maintained by the Program and that are to be included as part of our audit are listed here:

- A report on compliance with laws, regulations, the provision of contracts or grant agreements, and program guidelines. We will report on any noncompliance which could have a material effect on the financial statements, and we also report, in a separate letter, on all noncompliance found during the conduct of the audit whether or not it has a material effect on the financial statements.
- A schedule of findings and responses.

The Responsibilities of Management and Identification of the Applicable Financial Reporting Framework

Our audit will be conducted on the basis that management and those charged with governance, acknowledge and understand that they have responsibility:

- a. For the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America;
- b. To evaluate subsequent events through the date the financial statements are issued or available to be issued, and to disclose the date through which subsequent events were evaluated in the financial statements. Management also agrees that it will not evaluate subsequent events earlier than the date of the management representation letter referred to below;
- b. For the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; and
- c. To provide us with:
 - (1) Access to all information of which management is aware that is relevant to the preparation and fair presentation of the financial statements such as records, documentation, and other matters;
 - (2) Additional information that we may request from management for the purpose of the audit; and
 - (3) Unrestricted access to persons within the entity from whom we determine it necessary to obtain audit evidence.

As part of our audit process, we will request from management and those charged with governance written confirmation concerning representations made to us in connection with the audit including among other items:

- a. That management has fulfilled its responsibilities as set out in the terms of this letter; and
- b. That it believes the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.

Management is responsible for identifying and ensuring that the Program complies with the laws and regulations applicable to its activities, and for informing us about all known material violations of such laws or regulations. In addition, management is responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the entity involving management, employees who have significant roles in internal control, and others where the fraud could have a material effect on the financial statements. Management is also responsible for informing us of its knowledge of any allegations of fraud or suspected fraud affecting the entity received in communications from employees, former employees, analysts, regulators, short sellers, or others.

The Audit Committee is responsible for informing us of its views about the risks of fraud within the entity, and its knowledge of any fraud or suspected fraud affecting the entity.

South Carolina Centers of Economic Excellence Program agrees that it will not associate us with any public or private securities offering without first obtaining our consent. Therefore, South Carolina Centers of Economic Excellence Program agrees to contact us before it includes our reports or otherwise makes reference to us, in any public or private securities offering.

Our association with an official statement is a matter for which separate arrangements will be necessary. South Carolina Centers of Economic Excellence Program agrees to provide us with printer's proofs or masters of such offering documents for our review and approval before printing and with a copy of the final reproduced material for our approval before it is distributed. In the event our auditor/client relationship has been terminated when South Carolina Centers of Economic Excellence Program seeks such consent, we will be under no obligation to grant such consent or approval.

We agree that our association with any proposed offering is not necessary, providing South Carolina Centers of Economic Excellence Program agrees to clearly indicate that we are not associated with the contents of any such official statement or memorandum. South Carolina Centers of Economic Excellence Program agrees that the following disclosure will be prominently displayed in any such official statement or memorandum:

Derrick, Stubbs & Stith, LLP our independent auditor, has not been engaged to perform, and has not performed, since the date of its report included herein, any procedures on the financial statements addressed in that report. Derrick, Stubbs & Stith, LLP, also has not performed any procedures relating to this official statement.

Because Derrick, Stubbs & Stith, LLP will rely on South Carolina Centers of Economic Excellence Program and its management and Audit Committee to discharge the foregoing responsibilities, South Carolina Centers of Economic Excellence Program holds harmless and releases Derrick, Stubbs & Stith, LLP, its partners, and employees from all claims, liabilities, losses, and costs arising in circumstances where there has been a knowing misrepresentation by a member of Derrick, Stubbs & Stith, LLP's management which has caused, in any respect, Derrick, Stubbs & Stith, LLP's breach of contract or negligence. This provision shall survive the termination of this arrangement for services.

South Carolina Centers of Economic Excellence Review Board's Records and Assistance

If circumstances arise relating to the condition of the Program's records, the availability of appropriate audit evidence, or indications of a significant risk of material misstatement of the financial statements because of error, fraudulent financial reporting, or misappropriation of assets, which in our professional judgment, prevent us from completing the audit or forming an opinion, we retain the unilateral right to take any course of action permitted by professional standards, including declining to express an opinion, issue a report, or withdraw from the engagement.

During the course of our engagement, we may accumulate records containing data that should be reflected in the Program's books and records. The Program will determine that all such data, if necessary, will be so reflected. Accordingly, the Program will not expect us to maintain copies of such records in our possession.

The assistance to be supplied by the Program's personnel, including the preparation of schedules and analyses of accounts, has been discussed and coordinated with Mr. Gary Glenn (Commission on Higher Education), Ms. Sarah Balas (Clemson University), Mr. Bart Yancey (Medical University of South Carolina), and Ms. Kelly Epting (University of South Carolina). The timely and accurate completion of this work is an essential condition to our completion of the audit and issuance of our audit report.

If, in connection with our audit, you request us to perform accounting services necessary for the preparation of the financial statements (such as maintaining depreciation schedules, drafting the financial statements, etc.), you agree to designate an appropriate individual to oversee the services, make all management decisions involved in those services, evaluate the adequacy and results of the services, and accept responsibility for the results of the services.

Fees, Costs, and Access to Workpapers

Our fees for the audit and accounting services described in this letter will not exceed \$ 28,800, unless the scope of the engagement is changed, the assistance which the Program has agreed to furnish is not provided, or unexpected conditions are encountered, in which case we will discuss the situation with you before proceeding. All other provisions of this letter will survive any fee adjustment. Interim billings for up to one-half of the above fee will be submitted as work progresses and as expenses are incurred. Billings are due upon submission. An invoice for the balance of the fee will be submitted upon delivery of the final audited financial statements.

Our professional standards require that we perform certain additional procedures, on current and previous years' engagements, whenever a partner or professional employee leaves the firm and is subsequently employed by or associated with a client in a key position. Accordingly, the Program agrees it will compensate Derrick, Stubbs & Stith, LLP for any additional costs incurred as a result of the Program's, etc. employment of a partner or professional employee of Derrick, Stubbs & Stith, LLP.

In the event we are requested or authorized by South Carolina Centers of Economic Excellence Program or are required by government regulation, subpoena, or other legal process to produce our documents or our personnel as witnesses with respect to our engagement for Derrick, Stubbs & Stith, LLP, South Carolina Centers of Economic Excellence Program will, so long as we are not a party to the proceeding in which the information is sought, reimburse us for our professional time and expenses, as well as the fees and expenses of our counsel, incurred in responding to such requests.

You have requested we assist you with the preparation of the financial statements. The two overarching principles of the independence standards of the *Government Auditing Standards*, issued by the Comptroller General of the United States provide that management is responsible for the substantive outcome of the work, and therefore, has a responsibility and is able to make any informed judgment on the results of the services described above. Accordingly, the South Carolina Centers of Economic Excellence Program agrees to the following:

- Dr. Argentini Anderson and Gary Glenn will be accountable and responsible for overseeing the financial statement preparation.
- The Program will establish and monitor the performance of the financial statement preparation to ensure that management's objectives are met.
- The Program will make any decisions that involve management functions related to the financial statement preparation and accepts full responsibility for such decisions.
- The Program will evaluate the adequacy of services performed and any findings that result.

Claim Resolution

South Carolina Centers of Economic Excellence Program and Derrick, Stubbs & Stith, LLP agree that no claim arising out of services rendered pursuant to this agreement shall be filed more than two years after the date of the audit report issued by South Carolina Centers of Economic Excellence Program or the date of this arrangement letter if no report has been issued. South Carolina Centers of Economic Excellence Program waives any claim for punitive damages. Derrick, Stubbs & Stith, LLP's liability for all claims, damages and costs of South Carolina Centers of Economic Excellence Program arising from this engagement is limited to the amount of fees paid by South Carolina Centers of Economic Excellence Program to Derrick, Stubbs & Stith, LLP for the services rendered under this arrangement letter.

If any term or provision of this Agreement is determined to be invalid or unenforceable, such term or provision will be deemed stricken, and all other terms and provisions will remain in full force and effect.

Reporting

We will issue a written report upon completion of our audit of South Carolina Centers of Economic Excellence Program's financial statements. Our report will be addressed to the Audit Committee of South Carolina Centers of Economic Excellence Program. We cannot provide assurance that an unmodified opinion will be expressed. Circumstances may arise in which it is necessary for us to modify our opinion, add an emphasis-of-matter or other-matter paragraph(s), or withdraw from the engagement.

This letter constitutes the complete and exclusive statement of agreement between Derrick, Stubbs & Stith, LLP and South Carolina Centers of Economic Excellence Program's superseding all proposals, oral or written, and all other communications, with respect to the terms of the engagement between the parties.

Please sign and return the attached copy of this letter to indicate your acknowledgment of, and agreement with, the arrangements for our audit of the financial statements including our respective responsibilities.

Very cordially yours,

DERRICK, STUBBS & STITH, LLP
Certified Public Accountants and Consultants



Timothy M. Monahan, CPA
Partner

Confirmed on behalf of the addressee:

Jason P. Premo
April 30, 2017



South Carolina Commission on Higher Education

Mr. Tim M. Hofferth, Chair
Ms. Dianne C. Kuhl, Vice Chair
Mr. Paul O. Batson, III
Mr. Devron H. Edwards
Dr. Bettie Rose Horne
Mr. Richard A. Jones, Jr.
Mr. Kenneth W. Kirkland
Ms. Allison Dean Love
Dr. Louis B. Lynn
Vice Admiral Charles Munns, USN (ret.)
Mr. Kim F. Phillips
Ms. Terrye C. Seckinger

Mr. Jeffrey M. Schitz
Interim President and Executive Director

October 13, 2017

Derrick, Stubbs & Stith, LLC
Post Office Box 36
Columbia, South Carolina 29202

In connection with your audit of the financial statements of the South Carolina Centers of Economic Excellence (the Program) for the year ended June 30, 2017, we confirm that we are responsible for the fair presentation of the statements of program revenues and expenditures in conformity with accounting principles generally accepted in the United States of America.

We confirm to the best of our knowledge and belief, as of October 13, 2017, the following representations made to you during your audit:

1. The financial statements referred to above are fairly presented in conformity with accounting principles generally accepted in the United States of America.
2. We have identified for you all organizations that are a part of this reporting entity or with which we have a relationship, as these organizations are defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Government Accounting and Financial Reporting Standards, that are:
 - a. Component Units.
 - b. Other organizations for which the nature and significance of their relationship with the Program are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.
 - c. Jointly governed organizations in which we participated.
3. We have identified for you all funds and governmental functions related to the Program.
4. We have properly classified all funds and activities related to the Program.
5. We are responsible for compliance with laws and regulations applicable to the Program including adopting, approving, and amending budgets.
6. We have identified and disclosed to you all laws and regulations that have a direct and material effect on the determination of financial statement amounts including legal and contractual provisions for reporting specific activities.
7. We have made available to you:
 - a. All financial records and related data of all funds and account groups related to the Program, including those of all special funds, programs, departments, projects, activities, etc., in existence at any time during the period covered by your audit.
 - b. All minutes of the meetings of the Review Board and committees of Board members or summaries of actions of recent meetings for which minutes have not yet been prepared.
 - c. All communications from grantors, lenders, other funding sources or regulatory agencies concerning noncompliance with:
 - (1) Statutory, regulatory or contractual provisions or requirements.
 - (2) Financial reporting practices that could have a material effect on the financial statements.

8. We have no knowledge of fraud or suspected fraud affecting the Program involving:
 - a. Management,
 - b. Employees who have significant roles in the internal control, or
 - c. Others where the fraud could have a material effect on the financial statements.
9. We acknowledge our responsibility for the design and implementation of programs and controls to provide reasonable assurance that fraud is prevented and detected.
10. We have no knowledge of any allegations of fraud or suspected fraud affecting the Program received in communications from employees, former employees, analysts, regulators, short sellers or others.
11. We are aware of no significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Program's ability to record process, summarize, and report financial data.
12. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices related to the Program.
13. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities created by the Program.
14. The following, if applicable, have been properly reflected and/or disclosed in the financial statements:
 - a. Related party transactions and joint ventures in which the Program participates, as defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Governmental Accounting and Financial Reporting Standards, and interfund transactions, including interfund accounts and advances receivable and payable, sale and purchase transactions, interfund transfers, long-term loans, leasing arrangements and guarantees, all of which have been recorded in accordance with the economic substance of the transaction and appropriately classified and reported.
 - b. Guarantees, whether written or oral, under which the Program is contingently liable.
 - c. Arrangements with financial institutions involving compensating balances or other arrangements involving restrictions on cash balances and line of credit or similar arrangements.
 - d. Line of credit or similar arrangements
 - e. Agreements to repurchase assets previously sold.
 - f. Security agreements in effect under the Uniform Commercial Code.
 - g. Any other liens or encumbrances on assets or revenues or any assets or revenues which were pledged as collateral for any liability or which were subordinated in any way.
 - h. The fair value of investments.
 - i. Amounts of contractual obligations for plant construction and purchase of real property or equipment not included in the liabilities or encumbrances recorded on the books.
 - j. Any liabilities which are subordinated in any way to any other actual or possible liabilities.
 - k. All leases and material amounts of rental obligations under long-term leases.
 - l. All significant estimates and material concentrations known to management which are required to be disclosed in accordance with the Risks and Uncertainties Topic of the FASB Accounting Standards Codification. Significant estimates are estimates at the balance sheet date which could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets for which events could occur which would significantly disrupt normal finances within the next year.
 - m. Deposits and investment securities category of custodial credit risk.
15. We are responsible for making the accounting estimates included in the financial statements. Those estimates reflect our judgment based on our knowledge and experience about past and current events and our assumptions about conditions we expect to exist and courses of action we expect to take. In that regard, adequate provisions have been made:
 - a. To reduce receivables to their estimated net collectible amounts.

- b. To reduce investments, intangibles, and other assets which have permanently declined in value to their realizable values.
- c. For risk retention, including uninsured losses or loss retentions (deductibles) attributable to events occurring through June 30, 2017, and/or for expected retroactive insurance premium adjustments applicable to periods through June 30, 2017.
- d. For any material loss to be sustained in the fulfillment of, or from the inability to fulfill, any service commitments.
- e. For any material loss to be sustained as a result of purchase commitments.
- f. For environmental clean up obligations.

16. There are no:

- a. Material transactions that have not been properly recorded in the accounting records underlying the financial statements.
- b. Violations or possible violations of laws or regulations whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency. In that regard, we specifically represent that we have not been designated as, or alleged to be, a "potentially responsible party" by the Federal Environmental Protection Agency or any equivalent state agencies in connection with any environmental contamination related to activities of the Program.
- c. Other material liabilities or gain or loss contingencies that are required to be accrued or disclosed by the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.

17. We are not aware of any pending or threatened litigation, claims, or assessments, or unasserted claims or assessments that are required to be accrued or disclosed in the financial statements in accordance with the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.

18. We have no direct or indirect, legal or moral, obligation for any debt of any organization, public or private that is not disclosed in the financial statements.

19. We have satisfactory title to all owned assets.

20. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.

21. We are not aware of any significant deficiencies or material weaknesses in internal control that should be reported. We are responsible for establishing and maintaining effective internal control over financial reporting.

In connection with your audit, conducted in accordance with *Government Auditing Standards*, we confirm:

1. We are responsible for:

- a. Compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to the Program.
- b. Establishing and maintaining effective internal control over financial reporting.

2. We have identified and disclosed to you:

- a. All laws, regulations, and provisions of the Program *Guidelines* that have a direct and material effect on the determinations of financial statement amounts or other financial data significant to audit objectives.
- b. Violations (and possible violations) of laws, regulations, and provisions of the Program *Guidelines* whose effects should be considered for disclosure in the auditor's report on noncompliance.

3. We have taken timely and appropriate steps to remedy violations of provisions of the Program *Guidelines* that have been reported.
4. We have a process to track the status of audit findings and recommendations.
5. We have identified for you previous financial audits, attestation engagements, performance audits, or other studies related to the objectives of the audit being undertaken and the corrective action taken to address significant findings and recommendations.
6. We have provided you with our views on your reported findings, conclusions, and recommendations, as well as our planned corrective actions for the report.
7. We have reviewed, approved, and take full responsibility for the financial statements and related notes and acknowledge the auditor's role in the preparation of this information.

We are responsible for determining that significant events or transactions that have occurred since the balance sheet date and through October 13, 2017, have been recognized or disclosed in the financial statements. No events or transactions other than those disclosed in the financial statements have occurred subsequent to the balance sheet date and through October 13, 2017, that would require recognition or disclosure in the financial statements. We further represent that as of October 13, 2017, the financial statements were complete in a form and format that complied with accounting principles generally accepted in the United States of America, and all approvals necessary for issuance of the financial statements had been obtained.

During the course of your audits, you may have accumulated records containing data which should be reflected in our books and records. All such data have been so reflected. Accordingly, copies of such records in your possession are no longer needed by us.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE



Morgan O'Donnell
Assistant Director, Fiscal Affairs
SC Commission on Higher Education

Date Signed 11/21/2017

October 13, 2017

Derrick, Stubbs & Stith, LLC
Post Office Box 36
Columbia, South Carolina 29202

In connection with your audit of the financial statements of the South Carolina Centers of Economic Excellence (the Program) as it relates to Clemson University (the University) for the year ended June 30, 2017, we confirm that we are responsible for the fair presentation of the statements of program revenues and expenditures in conformity with accounting principles generally accepted in the United States of America.

Finance and Operations

Clemson University
G06 Sikes Hall
Box 345302
Clemson, SC
29634-5302

We confirm to the best of our knowledge and belief, as of October 13, 2017, the following representations made to you during your audit:

1. The financial statements referred to above are fairly presented in conformity with accounting principles generally accepted in the United States of America.
2. We have identified for you all organizations that are a part of this reporting entity or with which we have a relationship, as these organizations are defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Government Accounting and Financial Reporting Standards, that are:
 - a. Component Units.
 - b. Other organizations for which the nature and significance of their relationship with the Program are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.
 - c. Jointly governed organizations in which we participated.
3. We have identified for you all funds and governmental functions related to the Program.
4. All transactions and balances of funds that have been generated by the Program have been accurately reported to you by both the University and the Clemson University Foundation.
5. We have properly classified all funds and activities related to the Program.
6. We are responsible for compliance with laws and regulations applicable to the Program including adopting, approving, and amending budgets.
7. We have identified and disclosed to you all laws and regulations that have a direct and material effect on the determination of financial statement amounts including legal and contractual provisions for reporting specific activities.

8. We have made available to you:
 - a. All financial records and related data of all funds and account groups related to the Program, including those of all special funds, programs, departments, projects, activities, etc., in existence at any time during the period covered by your audit.
 - b. All communications from grantors, lenders, other funding sources or regulatory agencies concerning noncompliance with:
 - (1) Statutory, regulatory or contractual provisions or requirements.
 - (2) Financial reporting practices that could have a material effect on the financial statements.
9. We have no knowledge of fraud or suspected fraud affecting the Program involving:
 - a. Management,
 - b. Employees who have significant roles in the internal control, or
 - c. Others where the fraud could have a material effect on the financial statements.
10. We acknowledge or responsibility for the design and implementation of programs and controls to provide reasonable assurance that fraud is prevented and detected.
11. We have no knowledge of any allegations of fraud or suspected fraud affecting the Program received in communications from employees, former employees, analysts, regulators, short sellers or others.
12. We are aware of no significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Program's ability to record process, summarize, and report financial data.
13. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices related to the Program.
14. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities created by the Program.
15. The following, if applicable, have been properly reflected and/or disclosed in the financial statements:
 - a. Related party transactions and joint ventures in which the Program participates, as defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Governmental Accounting and Financial Reporting Standards, and interfund transactions, including interfund accounts and advances receivable and payable, sale and purchase transactions, interfund transfers, long-term loans, leasing arrangements and guarantees, all of which

- have been recorded in accordance with the economic substance of the transaction and appropriately classified and reported.
 - b. Guarantees, whether written or oral, under which the Program is contingently liable.
 - c. Arrangements with financial institutions involving compensating balances or other arrangements involving restrictions on cash balances and line of credit or similar arrangements.
 - d. Line of credit or similar arrangements
 - e. Agreements to repurchase assets previously sold.
 - f. Security agreements in effect under the Uniform Commercial Code.
 - g. Any other liens or encumbrances on assets or revenues or any assets or revenues which were pledged as collateral for any liability or which were subordinated in any way.
 - h. The fair value of investments.
 - i. Amounts of contractual obligations for plant construction and purchase of real property or equipment not included in the liabilities or encumbrances recorded on the books.
 - j. Any liabilities which are subordinated in any way to any other actual or possible liabilities.
 - k. All leases and material amounts of rental obligations under long-term leases.
 - l. All significant estimates and material concentrations known to management which are required to be disclosed in accordance with the Risks and Uncertainties Topic of the FASB Accounting Standards Codification. Significant estimates are estimates at the balance sheet date which could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets for which events could occur which would significantly disrupt normal finances within the next year.
 - m. Deposits and investment securities category of custodial credit risk.
16. We are responsible for making the accounting estimates included in the financial statements. Those estimates reflect our judgment based on our knowledge and experience about past and current events and our assumptions about conditions we expect to exist and courses of action we expect to take. In that regard, adequate provisions have been made:
- a. To reduce receivables to their estimated net collectible amounts.
 - b. To reduce investments, intangibles, and other assets which have permanently declined in value to their realizable values.
 - c. For risk retention, including uninsured losses or loss retentions (deductibles) attributable to events occurring through June 30, 2017, and/or for expected retroactive insurance premium adjustments applicable to periods through June 30, 2017.
 - d. For any material loss to be sustained in the fulfillment of, or from the inability to fulfill, any service commitments.
 - e. For any material loss to be sustained as a result of purchase commitments.
 - f. For environmental clean up obligations.

17. There are no:
 - a. Material transactions that have not been properly recorded in the accounting records underlying the financial statements.
 - b. Violations or possible violations of laws or regulations whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency. In that regard, we specifically represent that we have not been designated as, or alleged to be, a "potentially responsible party" by the Federal Environmental Protection Agency or any equivalent state agencies in connection with any environmental contamination related to activities of the Program.
 - c. Other material liabilities or gain or loss contingencies that are required to be accrued or disclosed by the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.
18. We are not aware of any pending or threatened litigation, claims, or assessments, or unasserted claims or assessments that are required to be accrued or disclosed in the financial statements in accordance with the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.
19. We have no direct or indirect, legal or moral, obligation for any debt of any organization, public or private that is not disclosed in the financial statements.
20. We have satisfactory title to all owned assets.
21. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
22. We are not aware of any significant deficiencies or material weaknesses in internal control that should be reported. We are responsible for establishing and maintaining effective internal control over financial reporting.

In connection with your audit, conducted in accordance with *Government Auditing Standards*, we confirm:

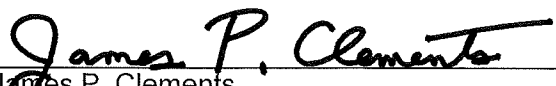
1. We are responsible for:
 - a. Compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to the Program.
 - b. Establishing and maintaining effective internal control over financial reporting.

2. We have identified and disclosed to you:
 - a. All laws, regulations, and provisions of the Program *Guidelines* that have a direct and material effect on the determinations of financial statement amounts or other financial data significant to audit objectives.
 - b. Violations (and possible violations) of laws, regulations, and provisions of the Program *Guidelines* whose effects should be considered for disclosure in the auditor's report on noncompliance.
3. We have taken timely and appropriate steps to remedy violations of provisions of the Program *Guidelines* that have been reported, if any.
4. We have a process to track the status of audit findings and recommendations.
5. We have identified for you previous financial audits, attestation engagements, performance audits, or other studies related to the objectives of the audit being undertaken and the corrective action taken to address significant findings and recommendations.
6. We have reviewed, approved, and take full responsibility for the financial statements and related notes and acknowledge the auditor's role in the preparation of this information.

We are responsible for determining that significant events or transactions that have occurred since the balance sheet date and through October 13, 2017, have been recognized or disclosed in the financial statements. No events or transactions other than those disclosed in the financial statements have occurred subsequent to the balance sheet date and through October 13, 2017, that would require recognition or disclosure in the financial statements. We further represent that as of October 13, 2017, the financial statements were complete in a form and format that complied with accounting principles generally accepted in the United States of America, and all approvals necessary for issuance of the financial statements had been obtained.

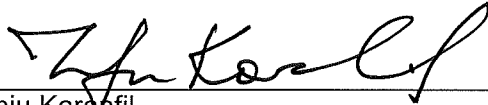
During the course of your audits, you may have accumulated records containing data which should be reflected in our books and records. All such data have been so reflected. Accordingly, copies of such records in your possession are no longer needed by us.

CLEMSON UNIVERSITY



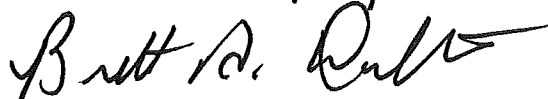
James P. Clements
President
Date Signed 11.17.17

Derrick, Stubbs & Stith, LLC
October 13, 2017
Page 6



Tanju Karafil
Vice President for Research
Date Signed _____

11/16/17



Brett A. Dalton
Vice President
Finance and Operations
Date Signed _____

11/16/17



Kathleen T. Brady, MD, PhD
Distinguished University Professor

Vice President for Research

Director and Principal Investigator

South Carolina Clinical & Translational Research (SCTR) Institute

Colcock Hall

179 Ashley Avenue

MSC 002

Charleston, SC 29425-0002

Tel 843 792-5205

Fax 843 792-4817

bradyk@musc.edu

November 16, 2017

Derrick, Stubbs & Stith, LLC
Post Office Box 36
Columbia, South Carolina 29202

In connection with your audit of the financial statements of the South Carolina Centers of Economic Excellence (the Program) as it relates to the Medical University of South Carolina (the University) for the year ended June 30, 2017, we confirm that we are responsible for the fair presentation of the statements of program revenues and expenditures in conformity with accounting principles generally accepted in the United States of America.

We confirm to the best of our knowledge and belief, as of October 13, 2017, the following representations made to you during your audit:

1. The financial statements referred to above are fairly presented in conformity with accounting principles generally accepted in the United States of America.
2. We have identified for you all organizations that are a part of this reporting entity or with which we have a relationship, as these organizations are defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Government Accounting and Financial Reporting Standards, that are:
 - a. Component Units.
 - b. Other organizations for which the nature and significance of their relationship with the Program are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.
 - c. Jointly governed organizations in which we participated.
3. We have identified for you all funds and governmental functions related to the Program.
4. All transactions and balances of funds that have been generated by the Program have been accurately reported to you by both the University and the Medical University of South Carolina Foundation.
5. We have properly classified all funds and activities related to the Program.
6. We are responsible for compliance with laws and regulations applicable to the Program including adopting, approving, and amending budgets.
7. We have identified and disclosed to you all laws and regulations that have a direct and material effect on the determination of financial statement amounts including legal and contractual provisions for reporting specific activities.
8. We have made available to you:
 - a. All financial records and related data of all funds and account groups related to the Program, including those of all special funds, programs, departments, projects, activities, etc., in existence at any time during the period covered by your audit.
 - b. All communications from grantors, lenders, other funding sources or regulatory agencies concerning noncompliance with:
 - (1) Statutory, regulatory or contractual provisions or requirements.
 - (2) Financial reporting practices that could have a material effect on the financial statements.

9. We have no knowledge of fraud or suspected fraud affecting the Program involving:
 - a. Management,
 - b. Employees who have significant roles in the internal control, or
 - c. Others where the fraud could have a material effect on the financial statements.
10. We acknowledge our responsibility for the design and implementation of programs and controls to provide reasonable assurance that fraud is prevented and detected.
11. We have no knowledge of any allegations of fraud or suspected fraud affecting the Program received in communications from employees, former employees, analysts, regulators, short sellers or others.
12. We are aware of no significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Program's ability to record process, summarize, and report financial data.
13. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices related to the Program.
14. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities created by the Program.
15. The following, if applicable, have been properly reflected and/or disclosed in the financial statements:
 - a. Related party transactions and joint ventures in which the Program participates, as defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Governmental Accounting and Financial Reporting Standards, and interfund transactions, including interfund accounts and advances receivable and payable, sale and purchase transactions, interfund transfers, long-term loans, leasing arrangements and guarantees, all of which have been recorded in accordance with the economic substance of the transaction and appropriately classified and reported.
 - b. Guarantees, whether written or oral, under which the Program is contingently liable.
 - c. Arrangements with financial institutions involving compensating balances or other arrangements involving restrictions on cash balances and line of credit or similar arrangements.
 - d. Line of credit or similar arrangements
 - e. Agreements to repurchase assets previously sold.
 - f. Security agreements in effect under the Uniform Commercial Code.
 - g. Any other liens or encumbrances on assets or revenues or any assets or revenues which were pledged as collateral for any liability or which were subordinated in any way.
 - h. The fair value of investments.
 - i. Amounts of contractual obligations for plant construction and purchase of real property or equipment not included in the liabilities or encumbrances recorded on the books.
 - j. Any liabilities which are subordinated in any way to any other actual or possible liabilities.
 - k. All leases and material amounts of rental obligations under long-term leases.
 - l. All significant estimates and material concentrations known to management which are required to be disclosed in accordance with the Risks and Uncertainties Topic of the FASB Accounting Standards Codification. Significant estimates are estimates at the balance sheet date which could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets for which events could occur which would significantly disrupt normal finances within the next year.
 - m. Deposits and investment securities category of custodial credit risk.

16. We are responsible for making the accounting estimates included in the financial statements. Those estimates reflect our judgment based on our knowledge and experience about past and current events and our assumptions about conditions we expect to exist and courses of action we expect to take. In that regard, adequate provisions have been made:
 - a. To reduce receivables to their estimated net collectible amounts.
 - b. To reduce investments, intangibles, and other assets which have permanently declined in value to their realizable values.
 - c. For risk retention, including uninsured losses or loss retentions (deductibles) attributable to events occurring through June 30, 2017, and/or for expected retroactive insurance premium adjustments applicable to periods through June 30, 2017.
 - d. For any material loss to be sustained in the fulfillment of, or from the inability to fulfill, any service commitments.
 - e. For any material loss to be sustained as a result of purchase commitments.
 - f. For environmental clean up obligations.
17. There are no:
 - a. Material transactions that have not been properly recorded in the accounting records underlying the financial statements.
 - b. Violations or possible violations of laws or regulations whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency. In that regard, we specifically represent that we have not been designated as, or alleged to be, a "potentially responsible party" by the Federal Environmental Protection Agency or any equivalent state agencies in connection with any environmental contamination related to activities of the Program.
 - c. Other material liabilities or gain or loss contingencies that are required to be accrued or disclosed by the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.
18. We are not aware of any pending or threatened litigation, claims, or assessments, or unasserted claims or assessments that are required to be accrued or disclosed in the financial statements in accordance with the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.
19. We have no direct or indirect, legal or moral, obligation for any debt of any organization, public or private that is not disclosed in the financial statements.
20. We have satisfactory title to all owned assets.
21. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
22. We are not aware of any significant deficiencies or material weaknesses in internal control that should be reported. We are responsible for establishing and maintaining effective internal control over financial reporting.

In connection with your audit, conducted in accordance with Government Auditing Standards, we confirm:

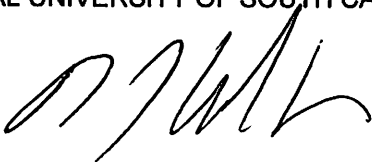
1. We are responsible for:
 - a. Compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to the Program.
 - b. Establishing and maintaining effective internal control over financial reporting.

2. We have identified and disclosed to you:
 - a. All laws, regulations, and provisions of the Program Guidelines that have a direct and material effect on the determinations of financial statement amounts or other financial data significant to audit objectives.
 - b. Violations (and possible violations) of laws, regulations, and provisions of the Program Guidelines whose effects should be considered for disclosure in the auditor's report on noncompliance.
3. We have taken timely and appropriate steps to remedy violations of provisions of the Program Guidelines that have been reported.
4. We have a process to track the status of audit findings and recommendations.
5. We have identified for you previous financial audits, attestation engagements, performance audits, or other studies related to the objectives of the audit being undertaken and the corrective action taken to address significant findings and recommendations.
6. We have provided you with our views on your reported findings, conclusions, and recommendations, as well as our planned corrective actions for the report.
7. We have reviewed, approved, and take full responsibility for the financial statements and related notes and acknowledge the auditor's role in the preparation of this information.

We are responsible for determining that significant events or transactions that have occurred since the balance sheet date and through October 13, 2017, have been recognized or disclosed in the financial statements. No events or transactions other than those disclosed in the financial statements have occurred subsequent to the balance sheet date and through October 13, 2017, that would require recognition or disclosure in the financial statements. We further represent that as of October 13, 2017, the financial statements were complete in a form and format that complied with accounting principles generally accepted in the United States of America, and all approvals necessary for issuance of the financial statements had been obtained.

During the course of your audits, you may have accumulated records containing data which should be reflected in our books and records. All such data have been so reflected. Accordingly, copies of such records in your possession are no longer needed by us.

MEDICAL UNIVERSITY OF SOUTH CAROLINA



David J. Cole, M.D.
President
Date Signed



Kathleen T. Brady, MD, PhD
Distinguished University Professor
Vice President for Research
Director, South Carolina Clinical & Translational Research (SCTR) Institute
November 16, 2017



UNIVERSITY OF
SOUTH CAROLINA

November 13, 2017

Derrick, Stubbs & Stith, LLC
Post Office Box 36
Columbia, South Carolina 29202

In connection with your audit of the financial statements of the South Carolina Centers of Economic Excellence (the Program) as it relates to the University of South Carolina (the University) for the year ended June 30, 2017, we confirm that we are responsible for the fair presentation of the statements of program revenues and expenditures in conformity with accounting principles generally accepted in the United States of America.

We confirm to the best of our knowledge and belief, as of October 13, 2017, the following representations made to you during your audit:

1. The financial statements referred to above are fairly presented in conformity with accounting principles generally accepted in the United States of America.
2. We have identified for you all organizations that are a part of this reporting entity or with which we have a relationship, as these organizations are defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Government Accounting and Financial Reporting Standards, that are:
 - a. Component Units.
 - b. Other organizations for which the nature and significance of their relationship with the Program are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.
 - c. Jointly governed organizations in which we participated.
3. We have identified for you all funds and governmental functions related to the Program.
4. All transactions and balances of funds that have been generated by the Program have been accurately reported to you by the University, the University of South Carolina Development Foundation, the University of South Carolina Educational Foundation, and the University of South Carolina Research Foundation.
5. We have properly classified all funds and activities related to the Program.
6. We are responsible for compliance with laws and regulations applicable to the Program including adopting, approving, and amending budgets.
7. We have identified and disclosed to you all laws and regulations that have a direct and material effect on the determination of financial statement amounts including legal and contractual provisions for reporting specific activities.

8. We have made available to you:
 - a. All financial records and related data of all funds and account groups related to the Program, including those of all special funds, programs, departments, projects, activities, etc., in existence at any time during the period covered by your audit.
 - b. All communications from grantors, lenders, other funding sources or regulatory agencies concerning noncompliance with:
 - (1) Statutory, regulatory or contractual provisions or requirements.
 - (2) Financial reporting practices that could have a material effect on the financial statement
9. We have no knowledge of fraud or suspected fraud affecting the Program involving:
 - a. Management,
 - b. Employees who have significant roles in the internal control, or
 - c. Others where the fraud could have a material effect on the financial statements.
10. We acknowledge or responsibility for the design and implementation of programs and controls to provide reasonable assurance that fraud is prevented and detected.
11. We have no knowledge of any allegations of fraud or suspected fraud affecting the Program received in communications from employees, former employees, analysts, regulators, short sellers or others.
12. We are aware of no significant deficiencies, including material weaknesses, in the design or operation of internal controls that could adversely affect the Program's ability to record process, summarize, and report financial data.
13. There have been no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices related to the Program.
14. We have no plans or intentions that may materially affect the carrying value or classification of assets and liabilities created by the Program.
15. The following, if applicable, have been properly reflected and/or disclosed in the financial statements:
 - a. Related party transactions and joint ventures in which the Program participates, as defined in Section 2100 of the Governmental Accounting Standards Board's Codification of Governmental Accounting and Financial Reporting Standards, and interfund transactions, including interfund accounts and advances receivable and payable, sale and purchase transactions, interfund transfers, long-term loans, leasing arrangements and guarantees, all of which have been recorded in accordance with the economic substance of the transaction and appropriately classified and reported.
 - b. Guarantees, whether written or oral, under which the Program is contingently liable.
 - c. Arrangements with financial institutions involving compensating balances or other arrangements involving restrictions on cash balances and line of credit or similar arrangements.
 - d. Line of credit or similar arrangements
 - e. Agreements to repurchase assets previously sold.
 - f. Security agreements in effect under the Uniform Commercial Code.

- g. Any other liens or encumbrances on assets or revenues or any assets or revenues which were pledged as collateral for any liability or which were subordinated in any way.
 - h. The fair value of investments.
 - i. Amounts of contractual obligations for plant construction and purchase of real property or equipment not included in the liabilities or encumbrances recorded on the books.
 - j. Any liabilities which are subordinated in any way to any other actual or possible liabilities.
 - k. All leases and material amounts of rental obligations under long-term leases.
 - l. All significant estimates and material concentrations known to management which are required to be disclosed in accordance with the Risks and Uncertainties Topic of the FASB Accounting Standards Codification. Significant estimates are estimates at the balance sheet date which could change materially within the next year. Concentrations refer to volumes of business, revenues, available sources of supply, or markets for which events could occur which would significantly disrupt normal finances within the next year.
 - m. Deposits and investment securities category of custodial credit risk.
16. We are responsible for making the accounting estimates included in the financial statements. Those estimates reflect our judgment based on our knowledge and experience about past and current events and our assumptions about conditions we expect to exist and courses of action we expect to take. In that regard, adequate provisions have been made:
- a. To reduce receivables to their estimated net collectible amounts.
 - b. To reduce investments, intangibles, and other assets which have permanently declined in value to their realizable values.
 - c. For risk retention, including uninsured losses or loss retentions (deductibles) attributable to events occurring through June 30, 2017, and/or for expected retroactive insurance premium adjustments applicable to periods through June 30, 2017.
 - d. For any material loss to be sustained in the fulfillment of, or from the inability to fulfill, any service commitments.
 - e. For any material loss to be sustained as a result of purchase commitments.
 - f. For environmental clean up obligations.
17. There are no:
- a. Material transactions that have not been properly recorded in the accounting records underlying the financial statements.
 - b. Violations or possible violations of laws or regulations whose effects should be considered for disclosure in the financial statements or as a basis for recording a loss contingency. In that regard, we specifically represent that we have not been designated as, or alleged to be, a “potentially responsible party” by the Federal Environmental Protection Agency or any equivalent state agencies in connection with any environmental contamination related to activities of the Program.
 - c. Other material liabilities or gain or loss contingencies that are required to be accrued or disclosed by the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.

18. We are not aware of any pending or threatened litigation, claims, or assessments, or unasserted claims or assessments that are required to be accrued or disclosed in the financial statements in accordance with the Contingencies Topic of the FASB Accounting Standards Codification and/or GASB Statement No. 10, and we have not consulted a lawyer concerning litigation, claims, or assessments.
19. We have no direct or indirect, legal or moral, obligation for any debt of any organization, public or private that is not disclosed in the financial statements.
20. We have satisfactory title to all owned assets.
21. We have complied with all aspects of contractual agreements that would have a material effect on the financial statements in the event of noncompliance.
22. We are not aware of any significant deficiencies or material weaknesses in internal control that should be reported. We are responsible for establishing and maintaining effective internal control over financial reporting.

In connection with your audit, conducted in accordance with *Government Auditing Standards*, we confirm:


1. We are responsible for:
 - a. Compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to the Program.
 - b. Establishing and maintaining effective internal control over financial reporting.
2. We have identified and disclosed to you:
 - a. All laws, regulations, and provisions of the Program *Guidelines* that have a direct and material effect on the determinations of financial statement amounts or other financial data significant to audit objectives.
 - b. Violations (and possible violations) of laws, regulations, and provisions of the Program *Guidelines* whose effects should be considered for disclosure in the auditor's report on noncompliance.
3. We have taken timely and appropriate steps to remedy violations of provisions of the Program *Guidelines* that have been reported, if any.
4. We have a process to track the status of audit findings and recommendations.
5. We have identified for you previous financial audits, attestation engagements, performance audits, or other studies related to the objectives of the audit being undertaken and the corrective action taken to address significant findings and recommendations.
6. We have provided you with our views on your reported findings, conclusions, and recommendations, as well as our planned corrective actions for the report.
7. We have reviewed, approved, and take full responsibility for the financial statements and related notes and acknowledge the auditor's role in the preparation of this information.

We are responsible for determining that significant events or transactions that have occurred since the balance sheet date and through October 13, 2017, have been recognized or disclosed in the financial statements. No events or transactions other than those disclosed in the financial statements have occurred subsequent to the balance sheet date and through October 13, 2017, that would require recognition or disclosure in the financial statements. We further represent that as of


October 13, 2017, the financial statements were complete in a form and format that complied with accounting principles generally accepted in the United States of America, and all approvals necessary for issuance of the financial statements had been obtained.

During the course of your audits, you may have accumulated records containing data which should be reflected in our books and records. All such data have been so reflected. Accordingly, copies of such records in your possession are no longer needed by us.


UNIVERSITY OF SOUTH CAROLINA



Dr. Harris Pastides
President
Date Signed 11-15-17



Dr. Prakash Nagarkatti
Vice President for research
Date Signed 11/13/2017



Mr. Edward L. Walton, CPA
Senior Vice President for Administration and Chief
Operating Officer
Date Signed 11/13/2017