Regan Voit, Chair Melvin Williams, Vice Chair Lisa Main, Secretary



January 9, 2014

The Honorable Nikki R. Haley, Governor

The Honorable Richard Eckstrom, Comptroller General

The Honorable Curtis Loftis, Treasurer

The Honorable Hugh K. Leatherman, Sr., Chairman, Senate Finance

The Honorable W. Brian White, Chairman, House Ways & Means Committee

The Honorable John E. Courson, President Pro Tempore, and Members of the S.C. Senate

The Honorable Robert W. Harrell, Jr., Speaker of the House, and Members of the S.C House of Representatives

Dear Members of the South Carolina General Assembly and State Budget and Control Board:

I am pleased to inform you that the South Carolina Centers of Economic Excellence Review Board has approved the *SmartState Program 2012-2013 Annual Report to the South Carolina General Assembly and the South Carolina Budget & Control Board* and the 2012-2013 SmartState Program Audit. I am equally pleased to report that the SmartState Program received another unqualified audit with no material findings.

Both documents highlight the tremendous success of the SmartState Program. By the end of fiscal year 2013, the SmartState Review Board had approved 51 research centers and 89 SmartState Endowed Chair positions, of which 44 appointments have been made and announced. As envisioned by the General Assembly, the SmartState Program is of great benefit to the state. The program is responsible for more than \$1.4 billion in non-state investment in the South Carolina economy—a 7:1 return on the state's \$180 million investment from 2003 to 2008 and has also led to the creation of more than 8,000 jobs, many of which are high-paying, knowledge-based economy positions.

The report is being transmitted to the members of the Budget and Control Board, and by statute, an electronic version of the *SmartState Program 2012-2013 Annual Report and Program Audit is* being made available to members of the General Assembly through the Legislative Services Agency. The annual report, along with other program information, is also available at <a href="www.smartstatesc.org">www.smartstatesc.org</a>. Should you desire a hardcopy annual report, please contact Dr. Argentini Anderson at the South Carolina Commission on Higher Education at <a href="maintenants">aanderson@che.sc.gov</a> or 803.737.2276.

The SmartState Review Board trusts the enclosed program reports will be helpful to you in better understanding this important South Carolina program and looks forward to working with you in the coming year and as the future of the program is considered. We greatly appreciate the work you accomplish on behalf of higher education and academic research and for the betterment of South Carolina.

Sincerely,

Regan Voit

Chair, SmartState Review Board

cc: Ms. Marcia Adams, Executive Director, S.C. Budget and Control Board

Members, SmartState Review Board

Dr. Richard Sutton, Executive Director, S. C. Commission on Higher Education



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## MISSION

## GL®BAL POSITIONING

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.

SMARTSTATE: 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

## INTRODUCTION BY REGAN VOIT CHAIR

The SmartState Program does not receive taxpaver dollars to fund economic development-related initiatives to benefit the state; it is funded through revenue generated by the South Carolina Education Lottery, which is then matched dollar-for-dollar by non-state businesses and foundations.

hen the SmartState Program was established by the South Carolina General Assembly in 2002, there were high hopes that this visionary program could propel the state's economy into a more prosperous future. The SmartState Program was designed as a fire starter, bringing our research universities together with businesses in search of innovation, collaboration, and talented, well-prepared employees.

Little more than a decade later, the SmartState Program has lived up to its promise. The program has attracted more than \$1.4 billion in investments in our state from businesses and foundations resulting from the \$180 million of non-tax revenue generated from the State Education Lottery. That investment is responsible for creating more than 8,000 jobs, and continues to attract a who's who of corporate partners such as BMW, Boeing, GM, SCANA, Fluor, and many more eager to pursue joint research, hire our university graduates and create economic opportunities together.

The theme of this annual report is Global Positioning, and that is exactly what the SmartState Program is achieving for our state. South Carolina is clearly positioning itself as a global leader in the automotive, aviation, healthcare, and energy industries. The Smart-State Program is an important impetus for collaboration and investment. Consider the following:

• MUSC's SmartState Center for Clinical Effectiveness and Patient Safety has succeeded in redefining how healthcare professionals are trained in South Carolina. Instead of practicing on real patients, medical and nursing students learn on high-tech patient simulators. With the help of this Center, Midlands Technical College recently secured a \$25 million federal grant to be used to train even more students for good-paying jobs using simulators.

- CU-ICAR, Clemson's automotive research campus, counts BMW, Ford, GM, Mazda and others among its corporate partners. In 2013, automotive companies sponsored 46 percent of its research. Some 93 percent of students who graduate from CU-ICAR programs are employed in the auto industry, 26 percent in South Carolina.
- The University of South Carolina is leveraging its intellectual and physical assets in nanotechnology, engineering, and physics to help develop next generation airliners. Aviation is a critical industry for South Carolina and the world; Boeing is involved in USC's efforts.
- Energy generation, storage, distribution, and security are global issues. Clemson is establishing a \$150 million energy research and commercial testing campus in North Charleston to address these very concerns. The potential for attracting industry and creating jobs in South Carolina's energy sector is huge. Already, interest is high; Duke Energy, GE Energy, Intertech, Santee Cooper, and SCANA are all partners.

In the past 10 years, we have implemented well thought out legislation that proved to be extremely successful in creating new high-paying positions in South Carolina. Going forward, we have identified ways to improve the program to make it even more effective for the next decade. South Carolina's SmartState Program has made our state a leader in science and technology development. As our legislative leaders implement improvements in the program, our leadership position will continue around the world.

Man E. Vait Regan Voit, Chair SmartState Review Board

#### **REVIEW BOARD**

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

Regan Voit, Chair



Appointed by Chairman of the Senate Finance

#### Melvin Williams, Vice Chair



Pro Tempore of the

#### **Michael Couick**



Pro Tempore of the

#### J. Lyles Glenn



Appointed by the



appointed by Speaker of

#### Keith Munson, Secretary



#### Robert W. Pearce, Jr.





Pro Tempore of the

#### Patricia E. Wilson



Appointed by Speaker of

SMARTSTATE: 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

# SOUTH CAROLINA'S SENIOR 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. 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 play in advancing innovation, creating economic and educational opportunities, and improving overall quality of life for the state's citizens when it acted with foresight and an eye to the future, passing the enabling legislation of the SmartState Program. Today, other states look to South Carolina's SmartState Program as the model of university-based public-private partnerships that foster innovation, launch companies, and create jobs.

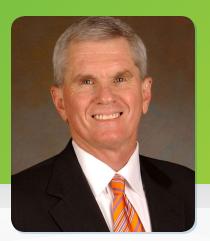
Clemson University is home to more than 19,000 students. Located in South Carolina's Upstate region, Clemson offers approximately 80 undergraduate and 110 graduate programs. Ranked as the 25th best national public university by U.S. News & World Report, Clemson is a vibrant student-centered community that thrives on leadership, collaboration, and a winning spirit in academics, athletics and life. To become one of the country's top-tier research universities, Clemson has combined the scientific and technological horsepower of a major research university with the academic and

social environment of a small college. CU-ICAR, Clemson University's International Center for Automotive Research, is a world model for university and business research partnerships.

#### The Medical University of South Carolina (MUSC)

has served the citizens of South Carolina since 1824. MUSC has expanded from a small private college for the training of physicians to a state university with a medical center and six colleges for the education of a broad range of health professionals, biomedical scientists, and other health-related personnel. MUSC has colleges in medicine, nursing, dental medicine, pharmacy, health professions, and graduate studies. MUSC Health is among the state's largest and most innovative health systems.

Established in 1805, the **University of South Carolina (USC)** is home to more than 200 years of history and tradition, with more than 45,000 students at its eight campuses across the state. The main campus in Columbia offers 324 degree programs through its 14 colleges and schools, which include medical schools in Columbia and Greenville, and a law school in Columbia. The Sonoco International Business Department within the Darla Moore School of Business offers an undergraduate international business major that is consistently ranked as #1 by U.S. News & World Report. USC is one of only 63 public universities listed by the Carnegie Foundation in the highest tier of research institutions in the United States.



The SmartState Program has been a game-changer. It was conceived by people in leadership positions who actually understood the dollars and cents value of making long-term investments in higher education and research to support economic growth. The genius of it is the private sector match requirement. For example, there would be no CU-ICAR (Clemson International Center for Automotive Research) without the Endowed Chairs funded jointly by SmartState and BMW (two chairs), Michelin, and Timken. With these chairs, Clemson has recruited world-class faculty to drive innovation and support a growing automotive and transportation sector."



President Clemson University



During my 13 year tenure as president of MUSC, no state initiative contributed as much to the advancement of MUSC than the SmartState program. By providing the resources to recruit outstanding scientists, we were able to build nationally prominent programs in drug discovery, regenerative medicine, biomedical imaging, and a number of other areas. Equally important, these new recruits are attracting considerable high tech economic activity in the state through the creation of start-up companies and partnerships with existing industry. This investment will pay dividends for years to come."

Ray Greenberg, M.D., Ph.D.

President

Medical University of South Carolina



Since its creation, the SmartState Program has attracted more than \$1.4 billion in outside investment to South Carolina and created more than 8,000 new, high-paying jobs in businesses large and small. In areas as diverse as nuclear energy, advanced materials, tourism and aerospace, the SmartState Program leverages USC's research expertise to directly benefit the state's economy. For the more than 40 companies and non-profits that have invested at least \$500,000 in the program—including the Fluor Corporation and The Duke Endowment—SmartState is a vital pipeline to innovative research available nowhere else in the world."

Harris Pastides, Ph.D.

President
University of South Carolina







SMARTSTATE: 2012-2013 ANNUAL REPORT

## CLEMSON V E R S I T Y

"The Smart Grid Technology Center is the most comprehensive approach to transforming the energy grid in America.
The potential for attracting industry and creating jobs in South Carolina's energy sector is huge."

#### **DARREN DAWSON, Ph.D.**

SMART GRID TECHNOLOGY

## SMART GRID TECHNOLOGY

America's electric grid was hailed as the greatest engineering achievement of the 20th century. Today, the grid – and others like it around the world – is on the verge of a renaissance.

Exploding energy demands, the rise of sustainable and alternative energy production, rapidly evolving information technology and demand for data, and the necessity of avoiding and circumventing outages and disruptions point to an unequivocal need for a major transformation of a system vital to society and the global economy.

This summer, the SmartState Program approved Clemson University's new Smart Grid Technology Center. The goal is to leverage the state's strong presence in the energy industry and Clemson's unique strengths in engineering, materials science, transportation, and entrepreneurship thus creating economic development opportunities and jobs for the state.

Housed at a new \$150 million energy campus in North Charleston, the Center will emphasize smart grid and clean energy technology (wind and solar) along with energy storage and conversion. The centerpiece of the campus is a \$100 million wind turbine test facility, which will provide commercial testing to companies like GE Energy. Smart Grid research will focus on merging energy and information technologies to create

a highly robust 21st century smart grid that is more resilient, reliable, flexible, and interactive with end users to optimize energy supply, use, and security. A Smart Grid Interface System will allow real time simulations with real hardware.

Though in its infancy, the Smart Grid Technology Center has attracted unprecedented corporate support. Duke Energy has invested \$5 million. SCE&G provided a new substation specifically for the wind turbine testing facility. Other economic development partners include GE Energy, Intertech, Santee Cooper, and SCANA. Additionally, there are two partner consortiums focused on the grid integration and wind turbine test facilities with 26 members.

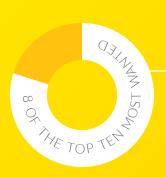
There is no question the Smart Grid Technology Center positions South Carolina to be a significant global competitor in the growing smart grid market, which is projected to attract \$2 trillion in investment by 2030. By providing vision, resources, and synergy for public and private partners, South Carolina has the power to lead in the development of new products and services and in job creation.

CORPORATE PARTNER



SMARTSTATE: 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

## GLOBAL POSITIONING THROUGH STEM



#### MOST WANTED EMPLOYEES

In 2009, the US Department of Labor reported eight of the top ten most wanted employees had degrees in STEM fields: accounting, computer science, electrical engineering, mechanical engineering, information sciences, computer engineering, civil engineering, and economics and finance.

South Carolina's economic fortunes, like that of the world, depend on a workforce rooted in STEM (science, technology, engineering and mathematics). The fastest growing job sectors, the most sought after employees, and the highest salaries are in STEM fields.

The SmartState Program recognizes the critical importance of preparing South Carolina's young people for the future, which is why SmartState is a partner in the South Carolina Governor's School for Science & Mathematics' (GSSM) Summer Program for Research Interns. For six weeks between their junior and senior years, GSSM students conduct research at university or industrial facilities under the mentorship of professional scientists, entrepreneurs, or engineers.

In the summer of 2013, 97

GSSM students were partnered with SmartState Endowed Chairs at Clemson University, MUSC, and USC based on their career interests. They spent their internships conducting graduate level research in areas including automotive engineering, cancer research, nanotechnology, and future fuels.

Dr. Kenneth Tew, chair, SmartState Council of Chairs, says the unique internship program brings STEM to life for the high school students, showing them the exciting opportunities available in science, technology, engineering and mathematics career fields in South Carolina.

"If we want to keep South Carolina's best and brightest students in our universities, we must show them the incredible opportunities available to them here at home," said Dr. Tew. "Young people are South Carolina's future business leaders, entrepreneurs, researchers, and policymakers. Allowing them to work alongside the brightest people in STEM is very powerful, and opens the door to exciting possibilities at our state's universities and job market."

#### A TOP STEM SCHOOL

Located in Hartsville, SC, the South Carolina Governor's School for Science and Mathematics is one of only 12 specialized, residential high schools in the nation for academically motivated juniors and seniors pursuing studies in science, technology, engineering, and math.



According to the U. S. Labor Department, six of the fastest growing occupations and their median wages are in STEM fields:

\$70,930 FINANCIAL EXAMINERS

\$71,100 NETWORK SYSTEMS AND DATA COMMUNICATIONS ANALYSTS

\$72,590 MEDICAL SCIENTIST

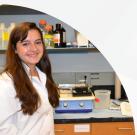
\$77,400 BIOMEDICAL ENGINEERS

\$81,230 PHYSICIAN ASSISTANTS

\$82,840 BIOCHEMISTS
AND BIOPHYSICISTS

From 2008-2018











SMARTSTATE: 2012-2013 ANNUAL REPORT

" Planes are a huge, huge export market for the United States. This new SmartState Center and its focus on the aviation industry represent a tremendous opportunity for South Carolina. We have to do this right!"

**KENNETH REIFSNIDER, Ph.D. SMARTSTATE CENTER FOR** MULTIPHYSICS OF HETEROGE-NEOUS ENGINEERED FUNCTIONAL MATERIALS & STRUCTURES



## AVIATION MATERIALS

Commercial aviation is the backbone of the American economy, driving more than \$1 trillion in annual economic activity and responsible for nearly 10 million well-paying American jobs.

Then multinational aviation corporation Boeing announced it would build its new 787 Dreamliner in North Charleston in 2009, it was cause for celebration in South Carolina. News reports indicated initial plans called for creating 3,800 jobs. Then, April 2013 media reports announced Boeing would invest another \$1 billion and add at least 2,000 more jobs at its North Charleston 787 campus by 2020, citing steep demand for commercial airplanes over the next two decades. Most recently, in November 2013, Boeing broke ground on a new jet propulsion plant in North Charleston, the company's first major South Carolina investment not associated with the 787.

"These jobs are included in our commitment that we announced earlier this year," Boeing South Carolina spokesman Rob Gross said in the Charleston Post & Courier, which added that the Chicago-based aerospace giant currently employs about 6,100 workers in the region.

South Carolina's position in the global aviation industry is climbing. But, the aviation industry is highly competitive. Companies need lighter, stronger aircraft that require less fuel to fly and maintenance to operate. Seeing an opportunity, the University of South Carolina (USC) proposed the nation's only SmartState Center focused on developing and testing the advanced materials needed for modern, high performance aircraft.

This summer, the SmartState Program approved USC's Center for Multiphysics of Heterogenous Engineered Functional Materials & Structures. The new Center leverages USC's expertise in nanocomposite

In the past, aircraft were made of metal. Today's aircraft are made largely of composite materials specifically chosen for certain properties. The significant advantage is cost; aircraft made of these advanced materials are more economical to operate and maintain.

USC researchers and graduate students are now working with South Carolina's aviation industry to study how the thermal, mechanical, and electrical properties of composite materials influence the global performance of aircraft. The research is complex, thus dialogue between USC and industry engineers is essential. Dr. Kenneth Reifsnider of USC explains: "We hold technical discussions with them to brainstorm. There's good synergy. We do why, they do how."

Such relationships take a long time to build, but yield tremendous results for all parties. University researchers gain a better understanding of industry needs and industry partners gain valuable scientific insight from university researchers. Students also benefit from research, internships, and jobs in aviation.

Says Reifsnider, "Work is more exciting with partners from our state's rapidly growing aviation industry. The opportunities before us have everyone's eyes lit up."

## SMARTSTATE PROGRAM RETURN ON INVESTMENT

In 2002, the South Carolina
General Assembly had the
vision to establish the SmartState
Program. The legislation authorizes
the state's three public research
institutions—Clemson University,
the Medical University of South
Carolina, and the University of
South Carolina—to use state lottery
funds, matched with equal nonstate investment, to create Centers
of Economic Excellence in research
areas that would advance South
Carolina's economy.

Today, there are 51 SmartState
Centers in six industry-focused
Smart Clusters that position South
Carolina well in the global economy:
Advanced Materials & Nanotechnology, Automotive and Transportation,
Biomedical, Future Fuels, Information Science, and Pharmaceutical.
Each Center is awarded between \$2 million to \$5 million in state lottery funds, which must be matched on a dollar-for-dollar basis with non-state funds from corporations or other entities. The list of SmartState
Center supporters includes BMW,

BASF, Bank of America Foundation, Westinghouse, and more supporters.

The program supports
SmartState Endowed Chairs,
world-renowned scientists and
engineers who were recruited to

lead the Centers. By investing in talent and technology, the Smart-State Program is fueling the state's knowledge economy and creating high-paying jobs and an improved standard of living in South Carolina.\*

Economic growth requires vision, investment, and courage. It is driven by the creation of new technologies, company formation, business expansion, and job creation. Economic growth benefits all because it helps support a better quality of life.

DR. JOSEPH C. VON NESSEN, RESEARCH ECONOMIST

MOORE SCHOOL OF BUSINESS

UNIVERSITY OF SOUTH CAROLINA

#### SMARTSTATE PROGRAM BY THE NUMBERS

3

6

51

13

RESEARCH UNIVERSITIES
CLEMSON, MUSC, USC

INDUSTRY CLUSTERS<sup>1</sup>

SMARTSTATE CENTERS OF ECONOMIC EXCELLENCE

44

T \_\_\_\_\_\_

\$1.4<sub>B</sub>

SMARTSTATE ENDOWED CHAIRS APPOINTED (OF THE 89 CREATED) STATE FUNDS INVESTED<sup>2</sup>

TOTAL INVESTMENT<sup>3</sup>

36

INVESTORS OVER \$500,0004

24

28

START-UP COMPANIES<sup>4</sup>

CORPORATE RELOCATIONS<sup>4</sup>

- 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 figure reported is as of the end of FY 2012 and includes \$191.6M in committed non-state matching funds, \$529.8M from corporate infrastructure investment, \$408.4 million in research grants, and \$307.5M in other committed grants and pledges. As of the end of FY 2013, the committed non-state matching funds at \$197.6M fully matches the state investment of \$197.6 million. Of the committed non-state matching funds as of FY 2013, research grants have increased to \$501.8M and other committed grants to \$457 million.
- 4 See page 14 for a listing of investors, start-ups and corporate relocations.

<sup>\*</sup> As of FY 2012, more than 8,000 high-paying, knowledge-based economy jobs; the average salary of these jobs is substantially higher than the average salary statewide. The jobs include 422 full-time equivalent SmartState personnel, 32 start-up company employees, and 1,159 corporate relocation personnel. Also included are an estimated nearly 6,500 new jobs that have resulted from the impact of more than \$400 million in extramural research funding brought into SC's economy by SmartState Endowed chairs and their research teams. The job numbers for start-up and corporate relations are not complete as figures were not available from all companies.

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#### 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. Sirrine 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
- » Westinghouse

#### **START-UP COMPANIES**

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

- » Advanced Photonic Crystals
- Fibro Therapeutics, Inc.
- FirstString Research
- Hydrogen Hybrid, LLC
- ImmoMod, Inc.
- MagAssemble, LLC
- MicroVide
- MitoChem Therapeutics, LLC
- MitoHealth
- NextGenEn. Inc.
- NXT
- Parallel Permeation, Inc.
- Palmetto Fuel Cell Technologies, LLC
- Perfect Mixing, LLC
- Protara, LLC
- SAGE Energy Solutions
- SchnellGen
- SemiAllogen, Inc
- SimTunes
- Smart Innovations, LLC
- » South Carolina Science Solutions, LLC
- Specialty Custom Fibers, Inc.
- Tetramer Technologies
- Vortex Biotechnology

#### **CORPORATE RELOCATIONS**

Companies that have relocated to South Carolina to take advantage of the expertise, resources, and graduates in the SmartState Program:

- American Titanium Manufacturing
- American Titanium Works **Technology Center**
- **BMW Information Technology** Research Center (ITRC)
- CADFEM U.S.\*
- Cephos
- Clean Energy
- Cooliemon\* Technologies\*
- Computech\*
- DreamWeaver\*
- » Environmental and Health Inc. (EHG)
- » Fields Group, LLC.\*
- Focus Chemicals\*
- Greenway Energy, LLC
- » Innoventure\*
- » Intec U.S. Inc.
- JTEKT Technology Center
- Mallet Technology\*
- » Mumford Industries\*
- » Proterra, Inc.
- Roding\*
- » Sage Automotive Interiors\*
- Simpack, Inc.
- ThermoPur Technologies\*
- » Tigges\*
- Toho Tenax\* » Trulite





#### **SMARTSTATE JOBS IN FOCUS:**

#### Creating Opportunities for South Carolinians





Melanie Jefferson Research Coordinator MUSC Hollings Cancer Center

"I earned my undergraduate degree at South Carolina State University and my Master's in Public Health Administration at the University of South Carolina. About the time I was hired at the Hollings Cancer Center, I lost my father to cancer. It really brought meaning to my work."

Jefferson was working with another cancer researcher when she learned Dr. Hughes-Halbert was recruited as the AT&T Distinguished Endowed Chair in Cancer Equity at MUSC. Jefferson had recently begun working on her Ph.D. and saw an opportunity to learn from one of the leading researchers in the nation in minority health and cancer prevention and control. "Dr. Hughes-Halbert came to MUSC from the University of Pennsylvania and brought new ideas and a different perspective, things I needed to develop my own research career. I was very fortunate to join her

team," said Jefferson.

Jefferson's job is demanding and rewarding and comes with tremendous responsibilities. Jefferson works with Dr. Hughes-Halbert in overseeing research projects, making sure grant funding runs smoothly and that all researchers and administrators stay on task.

"Without Dr. Hughes-Halbert and the SmartState Program, I would not have this wonderful career opportunity. Once I earn my Ph.D., I want to continue working in South Carolina. As a native, I

Without Dr. Hughes-Halbert and the SmartState Program, I would not have this wonderful career opportunity.

understand the state's nuances and what's needed to help overcome disparities in cancer care and outcomes. Helping the people of South Carolina achieve better health is very rewarding," said Jefferson.





#### **SMARTSTATE JOBS IN FOCUS:**

#### Attracting Creativity

reativity comes in many forms. Creative people are essential in solving problems in business, health care, and government. The opportunity to be creative is one thing that caused Dr. Todd Thornburg to leave a position with Wake Forest University in North Carolina to start a new career with the Center for Healthcare Quality.

Dr. Thornburg is a senior program manager with the Center for Information Technology Implementation Assistance South

Here, I have the opportunity to work with professionals across the entire state of South Carolina and really make a difference.

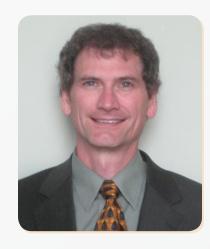
> Carolina (CITIA-SC), an initiative of the SmartState Center for Health Care Quality that has helped more than 1,300 doctors across South Carolina implement information technology into their practices.

"At Wake Forest, I was working with the university only. Here, I have the opportunity to work with professionals across the entire state of South Carolina and really make a difference for doctors, their patients, and health researchers," said Dr. Thornburg.

CITIA-SC is the result of a \$5.6 million federal grant secured by Health Sciences South Carolina and the SmartState Center for Healthcare Quality. Dr. Thornburg has collaborated with the S.C. Office of Rural Health, the S.C. Primary Health Care Association, and Carolinas Center for Medical Excellence to assist doctors across the state in using information technology to improve patient care and practice efficiency. He credits the Smart-State Program and its vision for creating his rewarding job opportunity.

"The SmartState Program attracts creativity from all over.

I've learned a lot about how to utilize the incredible talent South Carolina has in business, academics and nonprofits to get things done. It's exciting."

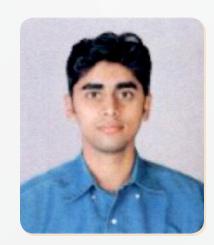


**Dr. Todd Thornburg**Senior Program Manager
Center for Healthcare Quality

#### **SMARTSTATE JOBS IN FOCUS:**

#### A Fortunate Find

Pushkar Joshi's Internet search for a graduate program in automotive engineering led him to Clemson University's International Center for Automotive Research (CU-ICAR). It was a fortunate find; two years later, he is an engine control engineer for EcoDual, a leading provider of dual fuel systems for the heavy-duty diesel truck industry.



Pushkar Joshi
Engine Control Engineer
EcoDual

Joshi smiled at the memory. "Most automotive engineering master's programs give you book smarts. CU-ICAR is unique; it's book smarts and hands-on building of automotive parts and vehicles. You learn by doing real world engineering with highly capable professors in a safe environment. If you make mistakes, you learn how to deal with them and avoid them in the future."

EcoDual President and CEO Mike Donoughe said it is important to have well-prepared people available to hire in South Carolina, particularly for high-tech companies like EcoDual that rely on ongoing research and development in a specialized industry.

"Pushkar understands the need to blend research and application to the real world. His well-grounded education in engineering and pragmatism make him an attractive employee for EcoDual," explained Donoughe, a 30-year veteran of the automotive industry, which includes leadership roles at Chrysler and Tesla Motors.

Joshi oversees a joint development project between EcoDual and CU-ICAR that seeks to improve the fuel systems of semi tractor trucks and reduce operational costs. At age 26, he calls it his "dream job."

"Working for a smaller company like EcoDual gives me a lot of responsibility and freedom. I don't just sit at a desk all day; I'm working on groundbreaking

Most automotive engineering master's programs give you book smarts. CU-ICAR is unique; it's book smarts and hands-on building of automotive parts and vehicles.

projects. I'm on speaking terms with our CEO! I am definitely fortunate to do what I love and have fun for a living," said Joshi.





## HEALTHCARE SIMULATION

Dr. John J. Schaefer, III, an expert in healthcare simulation training, was among the first endowed chairs recruited to the SmartState Program in 2006.

t the time, the use of software-driven patient simulators to train medical, nursing, and allied health was a luxury few universities or technical colleges could afford. At \$300,000 each, human simulators were out of reach to an industry desperately in need of a more effective clinical training.

The vision of the Center for Clinical Effectiveness & Patient Safety is to make South Carolina a world leader in healthcare simulation training. Working with business ally Laerdal, a European healthcare simulation company, Schaefer has succeeded in making human simulation training more accessible and affordable in South Carolina. Twelve simulation-training centers have been established with university, hospital, and technical college partners, including world-class training centers at MUSC and the Greenville Health System.

He also succeeded in commoditizing the health-care simulation market, bringing the price of a high fidelity simulator—lifelike adult, child, and infant mannequins—down to about \$30,000. When Schaefer joined the SmartState Program, there were less than 3,000 healthcare simulations in use in America. Today, there are more than 60,000.

Commercial success followed. In 2012, Schaefer launched SimTunes, an online store that sells simula-

tion-training software developed in South Carolina to users around the world. He has a patent pending on a mannequin that delivers a baby on its own and mimics emergency situations. The specialized simulator goes on the market in January 2014. Lippincott nursing textbooks now come with companion simulation training scenarios.

In early October, Schaefer was part of an effort led by Midlands Technical College that secured a \$25 million grant to implement the Better Occupational Outcomes and Simulation Training program (BOOST) from the U.S. Department of Labor, Employment and Training Administration. Midlands Tech and others, including Central Carolina Technical College in Sumter and Florence-Darlington Technical College, will now use simulation training to fast track the education of entry-level healthcare employees with fewer resources and greater efficiency.

This SmartState Center is making great strides. The next target is the multi-million dollar healthcare certification and licensure industry. Simulation, with its ability to objectively measure a student's knowledge, has the potential to transform how healthcare professionals around the world become certified or licensed and create more opportunities for educating the health care workforce.

**BUSINESS ALLY** 



## SMARTSTATE CENTERS AND ENDOWED CHAIRS

#### 2012 - 2013 THE YEAR IN REVIEW

The work of South Carolina's SmartState Centers is exciting, groundbreaking, and of critical importance to the state, nation, and world. What follows

is a brief overview of each Center. To learn more about the SmartState Program, visit SmartStateSC.org.

#### TOTALS FOR SMARTSTATE PROGRAM

<b>51</b>	SmartState	Program	Centers	Awarded
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**89** SmartState Endowed Chairs Created

44 SmartState Endowed Chairs Appointed

45 SmartState Endowed Chairs Remaining to be Appointed

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Program totals as of fiscal year end, June 30, 2013. Research Institutions Totals, 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. For updated information on Centers and program totals, contact the S.C. Commission on Higher Education or visit SmartStatesc.org.

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#### ADVANCED MATERIALS & NANOTECHNOLOGY



#### **ADVANCED FIBER-BASED MATERIALS**

Award Date: 2006

State Award Amount: \$4 million

University: Clemson

#### **Endowed Chair:**

Dr. Marek Urban

J.E. Sirrine Foundation Endowed Chair in Advanced Fiber-Based Materials

#### **Corporate Partner:**

J.E. Sirrine Textile Foundation

#### **External Funding Above Match:**

\$7.7 million

#### **Research Focus:**

To provide the vehicle for repositioning existing manufacturing resources to support new industry opportunities based on advanced fiber-based

#### ENVIRONMENTAL NANOSCIENCE AND RISK

Award Date: 2008

State Award Amount: \$3 million

 ${\color{red} \textbf{University:}} \ \textbf{USC}$ 

#### **Endowed Chair:**

Dr. Jamie Lead

Nanoenvironmental Science & Risk

#### **External Funding Above Match:**

\$1.5 million

#### Research Focus:

Understand the fundamental properties of nanomaterials and nanomaterials-environment interaction and use these principles to understand and help reduce impacts of nanomaterals 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:**

Dr. Richard Webb

#### **External Funding Above Match:**

\$3.5 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.

#### MULTIPHYSICS OF HETEROGENEOUS ENGINEERED FUNCTIONAL MATERIALS & STRUCTURES

Award Date: 2013

State Award Amount: \$2 million

University: USC

#### Endowed Chair(s):

USC is recruiting one endowed chair.

#### 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:**

Clemson is recruiting J.E. Sirrine Textile Foundation Endowed Chair in Optical Fiber.

#### Corporate Partner:

J.E. Sirrine Textile Foundation

#### **External Funding Above Match:**

\$18.8 million

#### Research Focus:

Conduct materials research 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:**

Dr. Brian Benicewicz

Materials Science & Engineering

#### Corporate Partners:

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

#### External Funding Above Match:

\$8.8 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.

SMARTSTATE : 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

#### **AUTOMOTIVE & TRANSPORTATION**



#### AUTOMOTIVE DESIGN AND DEVELOPMENT

Award Date: 2003

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State Award Amount: \$5 million

**University:** Clemson

Endowed Chair(s):

Dr. Zoran Filipi

Timken Endowed Chair in Automotive

Design & Development

**Corporate Partners:** 

Hertz Corporation, Duke Energy

**External Funding Above Match:** 

\$1.6 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:** 

Recruiting

Corporate Partner(s):

BMW

**External Funding Above Match:** 

\$5.6 million

Research Focus:

Develops micro-electromechanical systems technologies for manufacturing and improving the efficiency of manufacturing large, complex objects. The goal is for the Center to be the premier automotive and motorsports research and educational facility in the world.

#### SUPPLY CHAIN OPTIMIZATION AND LOGISTICS

Award Date: 2005

State Award Amount: \$2 million

University: Clemson

**Endowed Chair:** 

Dr. Scott Mason

Fluor Endowed Chair in Supply Chain

Optimization & Logistics

Corporate Partner(s):

Fluor

External Funding Above Match:

\$4.8 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:** 

Dr. Todd Hubing

Michelin Endowed Chair in Vehicle Electronic Systems Integration

**Corporate Partner:** 

Michelin

External Funding Above Match:

\$1.5 million

Research Focus:

Research in automotive and vehicular electronics, particularly systems integration issues, electromagnetic compatibility and electromagnetic modeling.

#### AUTOMOTIVE SYSTEMS INTEGRATION

Award Date: 2003

State Award Amount: \$5 million

University: Clemson

**Endowed Chair:** 

Dr. Paul Venhovens

BMW Endowed Chair in Automotive

Systems Integration

Corporate Partner(s):

BMW, Mazda, GM and others

**External Funding Above Match:** 

\$1.5 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.

#### **BIOMEDICAL**

ADVANCED TISSUE BIOFABRICATION

Award Date: 2008

State Award Amount: \$5 million

 $\textbf{Universities:} \ \mathsf{Clemson}, \ \mathsf{MUSC}, \ \mathsf{USC}$ 

**Endowed Chairs:** 

Recruiting endowed chairs in Biofabrication Biology and Biofabrication

Engineering

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: MUSC, USC

**Endowed Chairs:** 

Dr. Chris Rorden, USC

Brain Imaging

Dr. Joseph Helpern, MUSC Brain Imaging

MUSC is recruiting an additional chair

**External Funding Above Match:** 

\$2.1 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.

#### PROSTATE CANCER DISPARITIES

Award Date: 2008

State Award Amount: \$3.6 million

University: MUSC, USC, SC State

University

**Endowed Chairs:** 

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

MUSC and USC are each recruiting a chair in Cancer Disparities.

Corporate Partner(s):

AT&T Foundation

**External Funding Above Match:** 

\$22.5 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.

#### **CHILDHOOD NEUROTHERAPEUTICS**

Award Date: 2006

State Award Amount: \$5 million

Universities: USC, MUSC

**Endowed Chairs:** 

MUSC is recruiting an endowed chair in Neurodevelopmental Dysfunction.

Dr. Jeffrey Twiss, USC

Child and Adolescent Neurobiology

External Funding Above Match:

Research Focus:

\$7.2 million

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: 2005

State Award Amount: \$5 million

Universities: MUSC, USC

**Endowed Chairs:** 

Dr. John Schaefer, MUSC Lewis Blackman Endowed Chair for Patient Simulation & Research for Health

Sciences South Carolina

Dr. Jihad Obeid, MUSC Biomedical Informatics

Rita Snyder, USC

Clinical Effectiveness & Patient Safety

**External Funding Above Match:** 

\$9.8 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.



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#### BIOMEDICAL

**HEALTHCARE QUALITY** 

Award Date: 2006

State Award Amount: \$5 million

Universities: USC, MUSC

**Endowed Chairs:** 

Dr. Jay Moskowitz, USC James B. Duke SmartState Endowed Chair in Health Care Quality

MUSC is recruiting one chair.

**Corporate Partner:** 

The Duke Endowment

**External Funding Above Match:** 

\$20 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:** 

Clemson is recruiting a chair in Architecture & Health Research.

MUSC is recruiting a chair in Human Factors Medical Research.

**External Funding Above Match:** 

\$1.4 million

Research Focus:

The impact of health facility design on health and healthcare delivery and the creation of architectural settings that provide better support for the health, safety, and wellbeing of patients and staff.

#### INFLAMMATION AND FIBROSIS RESEARCH

Award Date: 2010

State Award Amount: \$5 million

**University: MUSC** 

**Endowed Chairs:** 

MUSC is recruiting two endowed chairs, Inflammation Research and Kitty Trask Holt Endowed Chair for Sclerderma Diseases.

**External Funding Above Match:** 

\$9.2 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, USC, College of Charleston

**Endowed Chairs:** 

Dr. Louis J. Guillette, MUSC

Marine Genomics

Dr. Gavin Naylor, MUSC Bioinformatics

Dr. Stephan Kresovich, USC

Dr. Stephan Kresovich, US Marine Genomics

External Funding Above Match:

\$8.7 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 Chairs:** 

MUSC is recruiting two chairs.

External Funding Above Match:

\$3.4 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.

#### **NEUROSCIENCE**

Award Date: 2003

State Award Amount: \$3 million

University: MUSC

**Endowed Chairs:** 

Dr. Gary Aston Jones

William E. Murray Endowed Chair in

Neuroscience

MUSC is recruiting an endowed chair in Movement Disorders.

in Movement Disorders.

MUSC is recruiting Josephine Tucker Morse Endowed Chair in Parkinson's Research.

**External Funding Above Match:** 

\$10.9 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**

#### PROTEOMICS

Award Date: 2003

State Award Amount: \$4 million

University: MUSC

**Endowed Chair:** 

Dr. Richard Drake

MUSC is recruiting a second chair.

External Funding Above Match:

\$20.6 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: 2003

State Award Amount: \$5 million
Universities: MUSC. USC. Clemson

**Endowed Chairs:** 

Dr. Richard Swaja, MUSC Regenerative Medicine and Cell Biology

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

Clemson is recruiting the Hansjörg Wyss Endowed Chair in Regenerative Medicine.

#### External Funding Above Match:

\$37.1 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.

#### REHABILITATION AND RECONSTRUCTION SCIENCES

Award Date: 2007

State Award Amount: \$5 million

University: USC

**Endowed Chair:** 

Dr. John Brooks, USC Reconstructive Methodologies & Materials

**External Funding Above Match:** 

\$14.7 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.

#### RENAL DISEASE BIOMARKERS

Award Date: 2008

State Award Amount: \$5 million

University: MUSC

Endowed Chair(s):

MUSC is recruiting chairs in Renal Biomarkers and Translational Nephrology Research.

External Funding Above Match:

\$4.1 million

Research Focus:

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

#### **SENIORSMART™**

Award Date: 2007

State Award Amount: \$5 million

Universities: USC, Clemson

**Endowed Chairs:** 

Dr. Sue Levkoff, USC
Community & Social Support

USC is recruiting a chair for Memory

& Brain Functions.

Clemson is recruiting a chair in Driving, Mobility & Physical Functioning.

**External Funding Above Match:** 

\$7.2 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.



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#### **BIOMEDICAL**



#### **STROKE**

Award Date: 2007

State Award Amount: \$5 million

Universities: MUSC. USC

#### **Endowed Chairs:**

Dr. Robert Adams, MUSC Stroke

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

Dr. Souvik Sen, USC Translational Neurology

#### **External Funding Above Match:**

\$5.1 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: MUSC, USC

#### **Endowed Chair:**

Dr. Frank Trieber, MUSC Technology Applications to Prevent & Manage Disease & Reduce Risk

Delia West, USC Technology Application for Health Behaviors Change.

#### **External Funding Above Match:** \$11.6

#### 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 MALIGNANCIES**

Award Date: 2007

State Award Amount: \$5 million

**University: MUSC** 

#### **Endowed Chairs:**

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

#### Corporate Partner:

**BMW** 

#### **External Funding Above Match:**

\$25.8 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):

MUSC is recruiting one chair.

#### **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, USC

#### Endowed Chair(s):

MUSC and USC are each recruiting a chair.

#### Corporate Partner(s):

Alcon Labs, Taligen, Alexion Pharmaceuticals

#### **External Funding Above Match:**

\$18 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.

#### **FUTURE FUELS**



#### **CATALYSIS FOR RENEWABLE FUELS**

Award Date: 2005

State Award Amount: \$3 million

University: USC

#### **Endowed Chair:**

Dr. John Regalbuto

#### **External Funding Above Match:**

\$2.9 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:**

USC is recruiting one chair.

#### **Corporate Partner:**

**General Atomics** 

#### **External Funding Above Match:**

\$3.9 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.

#### **HYDROGEN ECONOMY**

Award Date: 2004

State Award Amount: \$5 million

University: USC

#### **Endowed Chairs:**

USC is recruiting two chairs.

#### **Corporate Partner:**

Office of Naval Research (projects)

#### **External Funding Above Match:**

\$21.6 million

#### Research Focus:

Advance the science and use of clean, secure and renewable energy technologies and transportation fuel, including hydrogen fuel cells.

#### NUCLEAR SCIENCE AND ENERGY

Award Date: 2008

State Award Amount: \$3 million

University: USC

#### **Endowed Chair:**

Dr. Dan Gabriel Cacuci

#### **Corporate Partners:**

Duke Energy, Progress Energy, SCANA, Westinghouse

#### **External Funding Above Match:**

\$5.8 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:**

Clemson is recruiting endowed chairs.

#### **Corporate Partner:**

**Duke Energy** 

#### Research Focus:

Develop technology to better manage global electric grid systems.

#### **SOLID OXIDE FUEL CELLS**

Award Date: 2006

State Award Amount: \$3 million

University: USC

#### **Endowed Chair:**

Dr. Kenneth Reifsnider

#### **External Funding Above Match:**

\$54 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:**

Dr. Jochen Lauterbach

#### **External Funding Above Match:**

\$9.8 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.

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#### **INFORMATION SCIENCE**



#### **CYBERINSTITUTE**

Award Date: 2008

State Award Amount: \$2 million

**University:** Clemson

#### **Endowed Chair:**

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

#### **Corporate Partner:**

Omnibond Systems, LLC

#### **External Funding Above Match:**

\$1.4 million

#### Research Focus:

Connecting research and scholarship, particularly in the fields of human computer interaction, data storage, 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:**

Recruiting

#### **External Funding Above Match:**

xternal Fundi \$1.2 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.

In 2012, the SmartState Program welcomed five

new endowed chairs: Dr. Carolyn D. Britten, Center

for Gastrointestinal Cancer Diagnostics, MUSC; Dr.

Marek W. Urban, Center for Advanced Fiber Materi-

als, Clemson; and Dr. Xue-Zhong Yu, Center for Can-

#### **OPTOELECTRONICS**

Award Date: 2008

State Award Amount: \$2 million

University: Clemson

#### **Endowed Chair:**

Dr. Eric Johnson
PalmettoNet Endowed Chair in Optoelectronics

#### **Corporate Partners:**

Advanced Photonic Crystal, Tetramer Technologies

#### **External Funding Above Match:**

\$2.2 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:**

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

#### External Funding Above Match:

\$1.7 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 a wireless sensor that can monitor and transmit environmental data in real time.

SMARTSTATE WELCOMES FIVE ENDOWED CHAIRS IN 2012-2013

#### TOURISM AND ECONOMIC DEVELOPMENT

Award Date: 2005

State Award Amount: \$2 million

University: USC

#### **Endowed Chair:**

Dr. Simon Hudson

#### External Funding Above Match:

\$53,924

#### **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: 2005

State Award Amount: \$2 million

University: Clemson

#### **Endowed Chair:**

Clemson is recruiting a chair.

#### **External Funding Above Match:**

\$5.7 million

#### Research Focus:

Applied research in environmental science and engineering, habitat restoration and water quality management; environmental industry growth; and urban ecology projects in South Carolina.

#### cer Stem Cell Biology and Therapy, MUSC. Dr. Delia Smith West, Endowed Chair of Technology Application for Health Behavior Change, USC; Dr. John Brooks, Endowed Chair in Rehabilitation and Reconstruction Science, USC.

#### **PHARMACEUTICAL**

#### CANCER DRUG DISCOVERY

State Award Amount: \$5 million

Universities: MUSC, USC

#### **Endowed Chairs:**

Award Date: 2005

Dr. Charles Smith, MUSC Charles and Carol Cooper Chair in Pharmacy

Dr. John LeMasters, MUSC GlaxoSmithKline Distinguished En-

dowed Chair

Dr. Patrick Woster, MUSC

Medicinal Chemistry

MUSC is recruiting a chair in Struc-

tural Biology

#### Corporate Partner:

GlaxoSmithKline

#### External Funding Above Match:

\$15 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: Clemson, MUSC

#### **Endowed Chairs:**

Dr. Zihai Li, MUSC Abney Endowed Chair Remembering

Sally Abney Rose

Dr. Xue Zhong Yu, MUSC Biomedical Engineering

#### **External Funding Above Match:**

\$8.3 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 Chairs:**

Dr. Melanie Thomas Grace E. DeWolff Endowed Chair in Medical Oncology

Dr. Carolyn Britten

GI Malignancy Diagnostic & Therapeu-

tic Trials

#### Corporate Partner:

Roche Carolina, Bank of America

#### **External Funding Above Match:**

\$9.1 million

#### Research Focus: THERAP Clinical and translational gastro-

intestinal 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

#### LIPIDOMICS, PATHOBIOLOGY AND THERAPY

Award Date: 2009

State Award Amount: \$5 million

throughout the state.

University: MUSC

#### **Endowed Chairs:**

MUSC is recruiting chairs in *Lipidomics* & *Pathobiology* and *Lipidomics Drug Discovery*.

#### External Funding Above Match:

\$24.6 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:**

Charles Bennett

#### **External Funding Above Match:**

\$2.3 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 Chairs:

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

Dr. Igor Roninson, USC
Translational Cancer Therapeutics

#### **External Funding Above Match:**

\$15.2 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.



2.9



3 () SMARTSTATE : 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

## SMARTSTATE ENDOWED CHAIRS

"They are the ones who bring meaning to our lives, who happen to inspire, who spark a fire that we carry with us for the rest of our days, who are but pillars of hope and sometimes sacrifice, life-changers, life-savers, catalysts."

**CHIRAQ TULSIANI** 

South Carolina's SmartState Centers are led by endowed chairs; they are engineers, scientists, and researchers who are recognized experts in their respective fields.

The role of SmartState endowed chairs is to serve as catalysts for the state's knowledge economy. Eightynine endowed chairs have been approved to fill positions

at Clemson, MUSC and USC; 44 have been appointed. The universities are actively recruiting for the other positions. We invite you to meet the SmartState endowed chairs.



Dr. Robert Adams
Stroke
MUSC



**Dr. Gary Aston Jones**Neuroscience
MUSC



**Dr. Brian Benicewicz**Polymer Nanocomposites
USC



Dr. Charles Bennett
Medication Safety
and Efficacy
USC



**Dr. Carolyn Britten**Gastrointestinal Cancer
Diagnostics
MUSC



**Dr. Don Gabriel Cacuci** Nuclear Science and Energy USC



Dr. Mark Chimowitz Stroke MUSC



Dr. Richard Drake
Proteomics
MUSC



Dr. Zoran Filipi
Automotive Design and
Development
Clemson



**Dr. Louis Guillette**Marine Genomics
MUSC



Dr. Joseph Helpern
Brain Imaging
MUSC



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**Dr. Todd Hubing**Vehicle Electronics Systems
Integration
Clemson



**Dr. Simon Hudson**Tourism and Economic
Development
USC



**Dr. Chanita Hughes-Halbert**Prostate Cancer Disparities

MUSC



**Dr. Eric Johnson**Optoelectronics
Clemson



Dr. Stephan Kresovich

Marine Genomics

USC



Dr. Jochen Lauterbach Strategic Approaches to the Generation of Electricity (SAGE) USC



**Dr. Jamie Lead** Environmental Nanoscience and Risk USC



**Dr. John LeMasters**Cancer Drug Discovery
MUSC



**Dr. Sue Levkoff**SeniorSmart™
USC

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## SMARTSTATE ENDOWED CHAIRS



**Dr. Zihai Li**Cancer Stem Cell Biology
and Therapy
MUSC



Dr. Scott Mason Supply Chain Optimization and Logistics Clemson



**Dr. Martin Morad** Regenerative Medicine USC



**Dr. Jay Moskowitz** Healthcare Quality USC



**Dr. Charles Smith**Cancer Drug Discovery
MUSC



**Dr. Rita Snyder** Clinical Effectiveness and Patient Safety USC



**Dr. Richard Swaja** Regenerative Medicine MUSC



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**Dr. Kenneth Tew**Translational Cancer
Therapeutics
MUSC



**Dr. Gavin Naylor** *Marine Genomics*MUSC



**Dr. Jihad Obeid**Clinical Effectiveness
and Patient Safety
MUSC



**Dr. John Regalbuto**Catalysis for Renewable Fuels
USC



Dr. Kenneth Reifsnider Solid Oxide Fuel Cells USC



**Dr. Melanie Thomas**Gastrointestinal Cancer
Diagnostics
MUSC



**Dr. Frank Trieber** Technology Center to Enhance Healthy Lifestyles MUSC



**Dr. Jeffrey Twiss**Childhood Neurotherapeutics
USC



**Dr. Marek Urban**Advanced Fiber Materials
Clemson



**Dr. Igor Roninson**Translational Cancer
Therapeutics
USC



Dr. Chris Rorden
Brain Imaging
USC



Dr. John Schaefer Clinical Effectiveness and Patient Safety MUSC



Dr. Souvik Sen Stroke USC



**Dr. Paul Venhovens**Automotive Systems
Integration
Clemson



Dr. Richard Webb Environmental Nanoscale Physics USC



**Dr. Patrick Woster**Cancer Drug Discovery
MUSC



**Dr. Xue Zhong Yu**Cancer Stem Cell Biology

and Therapy

MUSC

SMARTSTATE: 2012-2013 ANNUAL REPORT SC CENTERS FOR ECONOMIC EXCELLENCE

## CLEMSON TO SERVITY

" CU-ICAR's Deep Orange vehicle prototype project is a game-changer that redefines how industry interacts with universities. How many college students get to work hand-in-hand with partners like BMW, GM, and Mazda?"

#### PAUL VENHOVENS, Ph.D.

ENDOWED CHAIR, SMARTSTATE
CENTER FOR AUTOMOTIVE
SYSTEMS INTEGRATION



## CU-ICAR DEEP ORANGE

It's high praise when an automotive industry leader recognizes a South Carolina university's vision to be the world's premier automotive, performance aftermarket, and motorsports research and education facility.

John Waraniak is vice president of technology development for the Specialty Equipment Market Association (SEMA), which hosts one of the automotive industry's premier events each year in Las Vegas. The SEMA Show attracts more than 120,000 attendees and 2,000 exhibitors. CU-ICAR students and their prototype vehicles built as part of the Deep Orange project are becoming regular, high profile participants at the SEMA Show. Waraniak recently cited Deep Orange for "encouraging innovation, entrepreneurship and creativity."

Deep Orange is a ground-breaking, two-year program that teams Clemson automotive engineering students with multidisciplinary faculty like Dr. Paul Venhovens, BMW Chair in Automotive Systems Integration, and corporate sponsors to research, design, engineer, and build a functioning vehicle prototype. To date, students have successfully completed three prototypes with two more in progress.

The list of Deep Orange corporate sponsors reads like a global automotive industry who's who: BMW, GM, and Mazda. Industry suppliers contributing components, software, or services include Michelin, Sage Automotive Interiors, JPS Composite Materials, Ryobi, Kicker Car Stereos, Altair (software), and KTM Solutions (engineering). For students, the opportunity

to work with these companies as well as CU-ICAR faculty like Dr. Venhovens who previously worked at BMW's R&D headquarters in Munich, Germany, is a dream come true, moving the educational experience light years beyond textbooks and lectures and preparing them for lucrative careers.

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Corporate sponsors find the experience equally rewarding. Mazda sponsored Deep Orange 3, in which CU-ICAR automotive engineering students worked with design students from the Art Center College of Design in California to create a vehicle prototype dubbed "The Next Big Thing" that addresses the needs of Gen Y consumers as well as automotive requirements like fuel efficiency, low carbon footprint, and lightweight materials. Sponsors benefit from the opportunity to identify talented future employees.

"This is a concept vehicle program like no other.

Deep Orange 3 was done the Mazda way, with new approaches to lightweight materials and power train technology," said Robert Davis, senior vice president, Mazda North America. "Students did a great job establishing what they wanted to build, developing market research around it, and developing and implementing new techniques of manufacture and design in the car that they built. It's a homerun!"

CORPORATE PARTNER



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## POSITIONED FOR THE FUTURE

Thomas Friedman's book, The World Is Flat, was the source of great debate when first published in 2005. The globalization of the world's economy, where every nation competes on a level playing field, was difficult for some to comprehend. What happened to global dominance by a few nations? Was the United States falling behind? How could the nation maintain its status as the world's top economy?

The answer is through innovation. Few countries have the drive to innovate and create novel, game-changing technologies quite like the United States. The need for this drive has never been greater as the world is truly flat.

From the initial vision of the South Carolina General Assembly, the SmartState Program has been the impetus for innovation and economic development in the Palmetto State. Today, South Carolina has strong and growing economic clusters in the automotive, aviation, energy, biomedical, pharmaceutical, and advance materials industries, all of which are of critical importance to the state, nation and the world. These economic clusters are creating opportunities for researchers, students, corporate partners, entrepreneurs, and all South Carolinians for better jobs and quality of life.

The SmartState Program has helped put South Carolina in an enviable position, a state well positioned for the global economy. The program will continue to evolve and improve, keeping South Carolina at the forefront of innovation.



#### SMARTSTATE PROGRAM CONTACTS

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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 SC 2-75-10.

In accordance with S.C. 1-11-425, the following information is provided: Number of reports printed: 200. Cost per report: \$9.18. Total printing cost: \$1,836.



**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, 2013** 

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## SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE REVIEW BOARD JUNE 30, 2013

<u>NAME</u>	<u>POSITION</u>	<u>APPOINTMENT</u>
Regan Voit	Chair	Chair, Senate Finance Committee
Melvin C. Williams	Vice-Chair	President Pro Tempore of the Senate
Keith D. Munson	Secretary	Governor
Patrick Turner	Member	President Pro Tempore of the Senate
Robert W. Pearce, Jr.	Member	Speaker of the House
Patricia E. Wilson	Member	Speaker of the House
Lisa Main	Member	Speaker of the House
J. Lyles Glenn	Member	Governor
Catherine Heigel	Member	Chair, House Ways and Means Committee
Michael N. Couick	Member	President Pro Tempore of the Senate
James F. Barker	Ex-Officio	
Raymond S. Greenberg	Ex-Officio	
Harris Pastides	Ex-Officio	



## SmartState Program Management's Discussion and Analysis Period: Fiscal Year 2012-13

Management's Discussion and Analysis provides an overview of the SmartState program and data covering the fiscal year ended June 30, 2013. 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 2010<sup>1</sup> 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

<sup>&</sup>lt;sup>1</sup> 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 2013.

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 is 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) are 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 encoding 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. However, the Department of Commerce has not recommended awards from this component of the SmartState Program.

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 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.

#### 2012-13 SmartState Summary Information

At the end of FY2013, the program consists of 51 Centers with 89 approved SmartState Endowed Chairs of which 44 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 million<sup>2</sup> in SmartState awards granted by the Board through the end of FY 2013, \$197.6 million in matching pledges have been committed by non-state sources. Of the committed pledges, \$185.2 million have been perfected and drawn down (including \$5,599,600 pending a positive recommendation from the Joint Other Funds Oversight Committee).

The table found on the following pages provides summary information on the Centers from fiscal year 2002-03 through FY 2012-13.

-

<sup>&</sup>lt;sup>2</sup> 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 – 2012-13)

	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*	\$5 million
MUSC	Proteomics	2	\$4 million
MUSC	Neuroscience	3	\$3 million
MUSC/USC/CoC	Marine Genomics	3**	\$4 million
Total Awarded in 2002-2003	}	14	\$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	Hydrogen Economy I ***	2	\$2.5 million
MUSC/Clemson/USC	Regenerative Medicine	3	\$5 million
MUSC/USC	Translational Cancer Therapeutics	2	\$5 million
Total Awarded in 2003-2004	ļ.	11	\$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	Hydrogen Economy II***	[See 03-04.]	\$2.5 million
USC/Coastal Carolina	Tourism & Economic Development	1	\$2 million
MUSC	Gastrointestinal Cancer Diagnostics	2**	\$5 million
MUSC/USC	Cancer Drug Discovery	4	\$5 million
MUSC/USC	Vision Science	3	\$4.5 million
Total Awarded in 2004-2005		11	\$22 million

<sup>\*</sup> Revised to three chairs by act of the SmartState Review Board on January 12, 2009.

<sup>\*\*</sup> Revised to three chairs by act of the SmartState Review Board on February 23, 2010.

<sup>\*\*\*</sup> The Hydrogen Economy Center of Economic Excellence was approved during 2003-2004. Funding for one half of this Center was provided in 2003-04, the other half in 2004-2005.

<sup>†</sup> Increased from one to two by act of the SmartState Review Board on September 8, 2008.

	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 Cardiovascula Disease & Prevention	r 2	\$5 million
MUSC/USC	Clinical Effectiveness & Patient Safety	* 3	\$5 million
Total Awarded in 2005-2006			\$26 million
	Funding Year 2006-2007		
Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson/MUSC	Health Facilities Design & Testing**	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 <sup>TM</sup> Center ***	3	\$5 million
MUSC	Tobacco-Related Malignancy	2	\$5 million
MUSC/USC	Stroke	3	\$5 million
Total Awarded in 2006-2007		14	\$32 million

On 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.

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

<sup>\*\*\*</sup> The 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*	3	\$3.6 million			
MUSC/USC	Medication Safety & Efficacy*	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			\$3 million			
USC/MUSC	Healthful Lifestyles**	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				

<sup>\*</sup> The Cancer Disparities Center of Economic Excellence and the Medication Safety & Efficacy Center of Economic Excellence were approved in 2008-2009. Funding was provided from 2007-2008 dollars.

<sup>\*\*</sup> The 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	Multiphysics of Heterogeneous Engineered Functional Materials and structures	1	\$2 million	
MUSC	Translational Biomedical Informatics	1	\$2 million	
Total Awarded in 2012-2013		3	\$6 million	

Program Totals <sup>1</sup>			
TOTAL LOTTERY APPROPRIATIONS (2003-2008)	\$180 million		
* 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 Apptd)	State Funds Drawn			
Clemson University	13	16	6 (10)	\$41,000,000			
University of South Carolina	18	30	18 (12)	\$58,830,553			
Medical University of South Carolina	20	43	20 (23)	\$79,843,600			
TOTALS	51	89	44 (45)	\$179,674,153			

<sup>1</sup>Program totals are as of June 30, 2013. 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. For updated information on Centers and program totals, contact CHE or see www.smartstaesc.org.





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#### 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 and expenditures of the South Carolina Centers of Economic Excellence (the Program) for the year ended June 30, 2013, 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 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, 2013, in conformity with accounting principles generally accepted in the United States of America.

#### Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued a report dated November 29, 2013, 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.

Derich, Stubbs & Stith, LLP

November 29, 2013

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE PROGRAM REVENUES AND EXPENDITURES - CONSOLIDATED SUMMARY YEAR ENDING JUNE 30, 2013

			Clemson University				Medical L	Medical University of South Carolina	h Carolina	
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue State funds Non-state matching funds	\$ 705,201	\$ 335.726	- 11.070	\$ 280,585	\$ 705,201 627,381	\$ 2,512,213	- 1.929.079	\$ 2.022.537	\$ 28.267	\$ 2,512,213 3.979.883
Total contribution revenue	705,201	335,726	11,070	280,585	1,332,582	2,512,213	1,929,079	2,022,537	28,267	6,492,096
Investment Income Realized gain (loss)			•	761,954	761,954			•	2,794,307	2,794,307
Unrealized gain (loss)		•	•	7,427,582	7,427,582	1	•	•	9,509,883	9,509,883
Total investment income (loss)				8,618,617	8,618,617				13,728,307	13,728,307
Total revenue	705,201	335,726	11,070	8,899,202	9,951,199	2,512,213	1,929,079	2,022,537	13,756,574	20,220,403
Expenditures				486 000	486,000			1 550 045	555 872	2 4 4 5 9 4 7
reisoliai selvices Fringe				133,713	133,713			298,215	933,972 87,903	386,118
Travel	•	•	1	58,745	58,745	•	•	30,711	30,243	60,954
Supplies	•	•	1	•	•	•	•	113,837	134,821	248,658
Contractual Tuition assistance								/61,19/ -		/6L,T0 -
Fixed charges	•	•	•	•	•	•	•	•	•	•
Indirect cost recovery	•	•	•	•	•	•	•	•	•	•
Administrative fees	•	•	•	•	•	•	•	46,789	1,130,832	1,177,621
Other			21,767	700,095	721,862			21,965 170,839	26,452 13,266	48,417 184 105
Equipment	•	•	1	63,500	63,500	•	•	201,228	27,510	228,738
Total expenditures			21,767	1,442,962	1,464,729	1		2,504,726	2,006,899	4,511,625
Program net income (loss)	705,201	335,726	(10,697)	7,456,240	8,486,470	2,512,213	1,929,079	(482,189)	11,749,675	15,708,778
Transfers	•	(461,667)	•	(149,517)	(611,184)	•	•	1,906,162	(1,906,162)	•
Cumulative Program Net Income Beginning	40,294,799	33,546,877	699,288	7,538,543	82,079,507	77,331,386	29,913,461	8,366,866	6,825,847	122,437,560
Ending	\$ 41,000,000	\$ 33,420,936	\$ 688,591	\$ 14,845,266	\$ 89,954,793	\$ 79,843,599	\$ 31,842,540	\$ 9,790,839	\$ 16,669,360	\$ 138,146,338

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE PROGRAM REVENUES AND EXPENDITURES - CONSOLIDATED SUMMARY YEAR ENDING JUNE 30, 2013

	ċ	Unive	University of South Carolina	ırolina			- Total -	Total - Consolidated Summary	nmary	
	State	Non-State Endowment	Non-State Expendable	Earnings	Total	State	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue State funds Non-state matching funds	\$ 2,131,508	. 426,811	. 1,608,588	\$ 51,400	\$ 2,131,508 2,086,799	\$ 5,348,922	\$ 2,691,616	3,642,195	. 360,252	\$ 5,348,922 6,694,063
Total contribution revenue	2,131,508	426,811	1,608,588	51,400	4,218,307	5,348,922	2,691,616	3,642,195	360,252	12,042,985
Investment Income Realized gain (Ioss)	•	•		950,602	950,602		•	•	4,506,863	4,506,863
Unrealized gain (loss)	•	1	•	1,635,070	1,635,070	•	•	•	18,572,535	18,572,535
Endowment income  Total investment income (loss)				2,917,706 5,503,378	5,503,378				4,770,904 27,850,302	4,770,904 27,850,302
Total revenue	2,131,508	426,811	1,608,588	5,554,778	9,721,685	5,348,922	2,691,616	3,642,195	28,210,554	39,893,287
Expenditures			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	7.00	000 000 0			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	000 4	100 100 1
reisonal services Fringe			276.697	945,624 165.132	441.829			2,977,560 574,912	386.748	4,963,963 961,660
Travel	•	•	47,635	32,558	80,193	•	•	78,346	121,546	199,892
Supplies	•	•	130,799	65,477	196,276	•	•	244,636	200,298	444,934
Contractual	•	•	36,440	303,682	340,122	•	•	97,637	303,682	401,319
Fuition assistance	•	•	(2,730)	68,289	62,559	•	•	(2,730)	68,289	62,559
Fixed charges	•		41,309	8,649	49,958	•		41,309	8,649	49,958
Indirect cost recovery		•	2,670	•	2,670	•	•	2,670		2,670
Administrative fees		•	2	290,799	290,801		•	46,791	1,421,631	1,468,422
Other	•	•	27,459	38,806	66,265	•	•	71,191	765,353	836,544
Facilities		•		•	•	•	•	170,839	13,266	184,105
Equipment	•	•	34	23,245	23,279	•	•	201,262	114,255	315,517
Total expenditures			1,977,930	1,942,261	3,920,191	1		4,504,423	5,392,122	9,896,545
Program net income (loss)	2,131,508	426,811	(369,342)	3,612,517	5,801,494	5,348,922	2,691,616	(862,228)	22,818,432	29,996,742
Transfers	•	(10,208)	(5,192)	10,208	(5,192)	•	(471,875)	1,900,970	(2,045,471)	(616,376)
Cumulative Program Net Income Beginning	56,699,045	22,112,330	3,501,841	7,304,900	89,618,116	174,325,230	85,572,668	12,567,995	21,669,290	294,135,183
Ending	\$ 58,830,553	\$ 22,528,933	\$ 3,127,307	\$ 10,927,625	\$ 95,414,418	\$ 179,674,152	\$ 87,792,409	\$ 13,606,737	\$ 42,442,251	\$ 323,515,549

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

		Automotiv	Automotive Design and Development	velopment			Automotiv	Automotive Manufacturing Integration	ntegration	
	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	€	∙ ₩	↔	<del>6</del>	•	<del>У</del>	<del>6</del>		<del>У</del>	٠ <del>ده</del>
Non-state matching funds	•		•	•	•	•	•	•	79,507	79,507
Total contribution revenue	1		•		•	1			79,507	79,507
Investment Income Realized gain (loss)			•	82,704	82,704		٠	•	110,662	110,662
Unrealized gain (loss)	•		•	826,288	826,288	•	•		1,022,502	1,022,502
Endowment income	'	•	•	46,795	46,795	•	'	'	57,387	57,387
Total investment income (loss)		•	•	955,787	955,787	1		•	1,190,551	1,190,551
Total revenue		•	•	955,787	955,787	'	•	'	1,270,058	1,270,058
Expenditures										
Personal services	•	•		55,329	55,329		•	•	87,002	87,002
Fringe	•	•	•	15,349	15,349	•	•	•	24,586	24,586
Travel	•	•	•	7,329	7,329	•	•	•	8,113	8,113
Other	•	•	•	21,505	21,505	•	•	•	237,366	237,366
Equipment	•	•	•	•	•	•	•	•	63,500	63,500
Total expenses	1	1	•	99,512	99,512	•	1	•	420,567	420,567
Program net income (loss)	•	ı	1	856,275	856,275	•	•	•	849,491	849,491
Transfers	•	(461,667)	•	(105,311)	(566,978)	•	•	•	•	•
Cumulative Program Net Income Beginning	5,000,000	3,307,658	•	666,527	8,974,185	5,000,000	5,000,000	•	1,067,107	11,067,107
Ending	\$ 5,000,000	\$ 2,845,991	₩	\$ 1,417,491	\$ 9,263,482	\$ 5,000,000	\$ 5,000,000	₩	\$ 1,916,598	\$ 11,916,598

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

		Autom	Automotive Systems Integration	tegration				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	•	•	•	148,519	148,519	•	•	6)369	•	9,369
Total contribution revenue	1			148,519	148,519	1		698'6		698'6
Investment Income Realized gain (loss)			1	119.492	119.492				74.597	74.597
Unrealized gain (loss)	•	•	•	1,099,707	1,099,707	•	•	•	694,682	694,682
Endowment income	•	•	•	61,614	61,614	•	•	•	47,004	47,004
Total investment income (loss)		•		1,280,813	1,280,813				816,283	816,283
Total revenue	1	•	'	1,429,332	1,429,332	•	•	6)369	816,283	825,652
Expenditures										
Personal services	•	•	•	227,892	227,892	•	•	•	•	
Fringe	•	•	•	61,777	61,777		•		•	•
Iravei	•	•	•	28,355	28,355	•	•	' !	•	' !
Other	•	•	1	346,878	346,878	•	1	18,737		18,737
Total expenses	1 1	.   .	.   .	664,902	664,902	1 1		18,737		18,737
Program net income (loss)	,		'	764,430	764,430	•	1	(9,368)	816,283	806,915
Transfers	•	•	•	•	•	•	•	•		•
Cumulative Program Net Income Beginning	5,000,000	5,000,000	114,921	1,952,917	12,067,838	5,000,000	3,050,852	23,752	1,014,318	9,088,922
Ending	\$ 5,000,000	\$ 5,000,000	\$ 114,921	\$ 2,717,347	\$ 12,832,268	\$ 5,000,000	\$ 3,050,852	\$ 14,384	\$ 1,830,601	\$ 9,895,837

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

		Vehic	Vehicle Electronic Systems	stems			Supply Cha	Supply Chain Optimization and Logistics	nd Logistics	
	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	<i>€</i> :	ι <del></del>	<del>σ</del>	<del>σ.</del>	· es	· <del>6</del> 5	·	es.	es.	·
Non-state matching funds	•	·	·	34,696	34,696	·	·	·	·	'
Total contribution revenue	1	1		34,696	34,696	1			1	
Investment Income Realized gain (loss)		,	,	50.405	50.405		,	,	42.441	42.441
Unrealized gain (loss)	•	•	•	506,958	506,958	•	•	•	386,247	386,247
Endowment income	•	•	•	29,453	29,453	•		•	21,519	21,519
Total investment income (loss)	1	1		586,816	586,816	1			450,207	450,207
Total revenue	•	•	1	621,512	621,512	•	•	1	450,207	450,207
Expenditures										
Personal services			•	103,874	103,874	•	•	•	•	•
Fringe	•	•	•	27,875	27,875	•	•	•	•	•
Travel	•	•	•	12,830	12,830	1	•	•	•	•
Other	•	•	•	73,106	73,106	•	•	•	•	•
Equipment	•	•	•	•	•	•	•	•	•	•
Total expenses	1	,		217,685	217,685		1			
Program net income (loss)	•		,	403,827	403,827	•	,	,	450,207	450,207
Transfers	•	•	•	•	•	•	•	•	•	•
Cumulative Program Net Income Beginning	3,000,000	2,000,000		491,818	5,491,818	2,000,000	2,000,000	•	83,156	4,083,156
Ending	\$ 3,000,000	\$ 2,000,000	· •	\$ 895,645	\$ 5,895,645	\$ 2,000,000	\$ 2,000,000	Ф	\$ 533,363	\$ 4,533,363

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

		Urban	Urban Ecology and Rest	Restoration			Advanc	Advanced Fiber-Based Materials	/aterials	
	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	<del>У</del>	· •	<del>6</del>	<del>У</del>	•	\$ 587.000	. ↔	<del>У</del>		\$ 587,000
Non-state matching funds		,			•		100,000	1,701	17,863	
Total contribution revenue	1					587,000	100,000	1,701	17,863	706,564
Investment Income Realized gain (loss)			٠	43,092	43,092			•	75,578	75,578
Unrealized gain (loss)	ı	1	•	385,086	385,086	1	1	•	676,320	676,320
Total investment income (loss)				449,462	449,462				790,424	790,424
Total revenue	1		•	449,462	449,462	587,000	100,000	1,701	808,287	1,496,988
Expenditures Personal services	٠	,	,			٠	,	,	12.812	12.812
Fringe	•	1	1	•	•	•	1	•	4,126	4,126
Travel	•	1	1		•	•	1	' ;	806	806
Other Equipment								3,030	20,880	23,910
Total expenses					•			3,030	38,726	41,756
Program net income (loss)	•		1	449,462	449,462	587,000	100,000	(1,329)	769,561	1,455,232
Transfers	•	•	•	•	•	•	•	•	(4,347)	(4,347)
Cumulative Program Net Income Beginning	2,000,000	2,000,000	•	65,489	4,065,489	3,413,000	3,382,500	60,615	818,740	7,674,855
Ending	\$ 2,000,000	\$ 2,000,000	· &	\$ 514,951	\$ 4,514,951	\$ 4,000,000	\$ 3,482,500	\$ 59,286	\$ 1,583,954	\$ 9,125,740

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

		Health Fa	Health Facilities Design and Testing	d 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	s S	<del>ω</del>	€9	<del>У</del>	•	\$ 118,201			•	\$ 118.201
Non-state matching funds	•		•		•		125,500		•	125,500
Total contribution revenue		•		1		118,201	125,500			243,701
Investment Income Realized pain (loss)	,	٠	,	25.079	25.079	,	,	,	43 703	43.703
Unrealized gain (loss)	•	•		425,688	425,688	•	•	•	384,685	384,685
Endowmentincome	•	•	•	28,571	28,571	•	•	•	21,219	21,219
Total investment income (loss)		1		479,338	479,338	1	1		449,607	449,607
Total revenue	,	1	,	479,338	479,338	118,201	125,500	1	449,607	693,308
Expenditures										
Personal services Frince										
Travel	•	•	•	•	•	•	•	•	1,210	1,210
Other	•	•	•	•	•	•	•	•	360	360
Equipment	•	•	•	•	•	•	•	•	•	•
Total expenses	•	1	•	1	•	•	1	1	1,570	1,570
Program net income (loss)	•	•	•	479,338	479,338	118,201	125,500	•	448,037	691,738
Transfers	•		•	•	•	•	•		(39,859)	(39,859)
Cumulative Program Net Income Beginning	2,000,000	2,000,000	•	827,508	4,827,508	1,881,799	1,881,799	•	301,741	4,065,339
Ending	\$ 2,000,000	\$ 2,000,000		\$ 1,306,846	\$ 5,306,846	\$ 2,000,000	\$ 2,007,299		\$ 709,919	\$ 4,717,218

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

			Cyber-Institute				Sust	Sustainable Development	nent	
	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		<del>6</del>		· •	49		<del>6</del>	49	89	· •
Non-state matching funds		,		,	•	•	110,226			110,226
Total contribution revenue	1					1	110,226			110,226
Investment Income Realized gain (loss)			•	27,389	27,389	•	•	•	66,812	66,812
Unrealized gain (loss)	•	1	ı	287,136	287,136	•	1	ı	732,283	732,283
Total investment income (loss)				331,716	331,716				36,518 837,613	36,518 837,613
Total revenue	•	•	1	331,716	331,716	•	110,226	•	837,613	947,839
Expenditures Personal services	,	,	,							
Fringe		•	•			•	•			•
Travel										
Equipment		•			1	1				
Total expenses	1				1	1	1			
Program net income (loss)	•	•	•	331,716	331,716	•	110,226		837,613	947,839
Transfers	•	•	•		•	•			•	•
Cumulative Program Net Income Beginning	2,000,000	1,088,996	500,000	47,546	3,636,542	4,000,000	2,835,072	•	201,676	7,036,748
Ending	\$ 2,000,000	\$ 1,088,996	\$ 500,000	\$ 379,262	\$ 3,968,258	\$ 4,000,000	\$ 2,945,298	· &	\$ 1,039,289	\$ 7,984,587

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2013

	Total	705,201	627,381	1,332,582	761,954	7,427,582	429,081	8,618,617	9,951,199		486,909	133,713	58,745	721,862	63,500	1,464,729	8,486,470	(611,184)	82,079,507	89,954,793
		↔																		↔
ersity	Endowment	€	280,585	280,585	761,954	7,427,582	429,081	8,618,617	8,899,202		486,909	133,713	58,745	700,095	63,500	1,442,962	7,456,240	(149,517)	7,538,543	\$ 14,845,266
Total - Clemson University	Non-State Expendable		11,070	11,070	•		•		11,070		•	•	•	21,767	•	21,767	(10,697)	•	699,288	\$ 688,591
Tota	Non-State Endowment	. ↔	335,726	335,726		•	•	1	335,726			•	•	•	•		335,726	(461,667)	33,546,877	\$ 33,420,936
	State Endowment	\$ 705,201		705,201			•	•	705,201			•	•	•	•		705,201		40,294,799	\$ 41,000,000
		Contribution Revenue State funds	Non-state matching funds	Total contribution revenue	Investment Income Realized gain (loss)	Unrealized gain (loss)	Endowment income	Total investment income (loss)	Total revenue	Expenditures	Personal services	Fringe	Travel	Other	Equipment	Total expenses	Program net income (loss)	Transfers	Cumulative Program Net Income Beginning	Ending

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

			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	φ	<del>У</del>		€9	<del>.</del>	<del>У</del>	<del>6</del>		φ	<del>ω</del>
Non-state matching funds		,			•		350	292		917
Total contribution revenue		1		1	•	1	350	292		917
Investment Income Regized gain (locs)				134 680	134 680				103 580	103 589
Unrealized gain (loss)	•	•	•	452,033	452,033	•	•	•	343,620	343,620
Endowment income	•	•	•	43,996	43,996	•	•		33,655	33,655
Total investment income (loss)	1	1		630,709	630,709	1			480,864	480,864
Total revenue				630,709	630,709		350	292	480,864	481,781
Expenditures				700	25 460			7 0000		1
Fersonal services				53,469 9,980	9,980 9,980			2.349		7,626 2,349
Travel	•	•	•	21,866	21,866	•	•		•	•
Supplies	•	•	•	28,261	28,261	•	•	•	•	
Contractual	•	•	•	1 1	' !	•	•	' (	' '	' '
Administrative fees Other				56,937	56,937 10.510	' '		78	43,181	43,209
Facilities	•	•	•	•		•	•	•	•	•
Equipment	•	•	•	27,510	27,510	•	•	'	'	•
Total expenditures	•	1	1	190,533	190,533	1	•	10,205	43,181	53,386
Program net income (loss)	•		•	440,176	440,176	•	350	(9,638)	437,683	428,395
Transfers	•	•	•	•		•	•	•	•	•
Cumulative Program Net Income Beginning	4,000,000	1,254,266	791,789	409,845	6,455,900	3,000,000	000'006	711,659	323,280	4,934,939
Ending	\$ 4,000,000	\$ 1,254,266	\$ 791,789	\$ 850,021	\$ 6,896,076	\$ 3,000,000	\$ 900,350	\$ 702,021	\$ 760,963	\$ 5,363,334

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

			Marine Genomics					Regenerative Medicine	ne	
	State	Non-State	Non-State	Endowment	,	State	Non-State	Non-State	Endowment	į
	Endowment	Endowment	Expendable	Earnings	lotal	Endowment	Endowment	Expendable	Earnings	lotal
Contribution Revenue										
State funds	٠ ج	' \$	ج	ج	ج	ج	ج	٠ ج	' \$	· •
Non-state matching funds	•	•	•	•	•	•	•	1,666,665	•	1,666,665
Total contribution revenue	•	•	•	•	•		·	1,666,665	•	1,666,665
Investment Income										
Realized gain (loss)	•	•	•	96,321	96,321	•	•	•	62,029	62,029
Unrealized gain (loss)	•	•	•	555,289	555,289	•	•	•	315,007	315,007
Endowment income	•	•	•	109,291	109,291	•	•	•	465,918	465,918
Total investment income (loss)		•	•	760,901	760,901	•	•	•	845,954	845,954
Total revenue	·	•		760,901	760,901	•	•	1,666,665	845,954	2,512,619
Expenditures										
Personal services	•	•	51,529	182,647	234,176	•	•	1,029,807	•	1,029,807
Fringe	•	•	15,202	•	15,202	•	•	150,284		150,284
Travel	•	•	1,862	•	1,862	•	•	11,212	•	11,212
Supplies	•	•	292	862	1,154	•	•	91,594		91,594
Contractual	•	•	16,400	•	16,400	•	•	8,488	•	8,488
Administrative fees	•	•	•	53,527	53,527	•	•	27,778	34,015	61,793
Other	•	•	20	•	20	•	•	009'6		009'6
Facilities	•	•	•	13,266	13,266	•	•	•	•	•
Equipment	•	•	•	•	•	•	•	40,232	•	40,232
Total expenditures	•	•	85,305	250,302	335,607	•	•	1,368,995	34,015	1,403,010
Program net income (loss)	•	•	(85,305)	510,599	425,294	•	•	297,670	811,939	1,109,609
Transfers	•	•	•	•	•	•	•	277,583	(277,583)	
Cumulative Program Net Income Beginning	4,000,000	1,500,000	300,878	701,833	6,502,711	5,000,000	2,000,000	193,856	533,768	7,727,624
Ending	\$ 4,000,000	\$ 1,500,000	\$ 215,573	\$ 1,212,432	\$ 6,928,005	\$ 5,000,000	\$ 2,000,000	\$ 769,109	\$ 1,068,124	\$ 8,837,233

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Translat	Translational Cancer The	Therapeutics			Dru	Drug Discovery in Cancer	ncer	
	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)	•		٠	183.720	183.720			,	168.927	168.927
Unrealized gain (loss)	•	•	ı	616,792	616,792	ı	•	1	561,185	561,185
Endowment income	•	•	•	29,977	59,977	•	•	•	54,885	54,885
Total investment income (loss)	1	•		860,489	860,489	1			784,997	784,997
Total revenue	1	1	1	860,489	860,489		•	•	784,997	784,997
Expenditures										
Personal services	•	•	•	201,019	201,019	•	•	•	70,336	70,336
Fringe	•	•	•	44,808	44,808		•		18,705	18,705
Travel	•	•	•	1,523	1,523	•	•	•	•	•
Supplies	•	•	•	•		•	•	•	•	•
Contractual	•	•	•	- 207 77	. 207 77	•	•		- 70.5	70.545
Administrative rees	•	•	•	11,106	11,106	•	•	•	10,013	70,515
Officer	•	•	•	104	104	•	•	•	14,087	14,087
raciiitles Equipment										
Total expenditures			1	325,220	325,220		1	1	173,643	173,643
Program net income (loss)	•	•	•	535,269	535,269	•	•	•	611,354	611,354
Transfers	•	•	•	•	•	•	•	•	•	
Cumulative Program Net Income Beginning	5,000,000	1,998,095	•	758,756	7,756,851	5,000,000	1,604,510	215,219	207,486	7,027,215
Ending	\$ 5,000,000	\$ 1,998,095	· •	\$ 1,294,025	\$ 8,292,120	\$ 5,000,000	\$ 1,604,510	\$ 215,219	\$ 818,840	\$ 7,638,569

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Gastroint	Gastrointestinal Cancer Diagnostics	agnostics				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	<del>У</del>		<del>У</del>		<del>«</del>	<del>У</del>		<del>У</del>	<del>У</del>	· •
Non-state matching funds					•					•
Total contribution revenue	1				•			•		•
Investment Income Realized pain (loss)		,	,	185 200	185,200		,		163 177	163 177
Unrealized gain (loss)	•	ı		615,576	615,576	ı	1	ı	542,040	542,040
Endowment income	•	•	•	60,100	60,100	•	•	•	53,055	53,055
Total investment income (loss)		1	•	860,876	860,876	1	1		758,272	758,272
Total revenue		•		860,876	860,876		•		758,272	758,272
Expenditures Personal services	٠	,	128.903	,	128.903	٠	,	٠		
Fringe	•	•	38,671	•	38,671	•	•	•		•
Travel	•	•	•	•	•	•	•	16,996	•	16,996
Supplies	•	•	•	•	•	•	•	81	1	81
Administrative fees				77,228	77,228			505,0	68,133	68,133
Other	•	•	•			•	•	2,200		2,200
Facilities								- 90.842		- 90.842
Total expenditures			167,574	77,228	244,802			116,428	68,133	184,561
Program net income (loss)	•	•	(167,574)	783,648	616,074	•	٠	(116,428)	690,139	573,711
Transfers	•	•	310,743	(310,743)	•	•		157,733	(157,733)	
Cumulative Program Net Income Beginning	5,000,000	2,000,000	316,470	803,108	8,119,578	4,500,000	1,883,774	464,415	379,167	7,227,356
Ending	\$ 5,000,000	\$ 2,000,000	\$ 459,639	\$ 1,276,013	\$ 8,735,652	\$ 4,500,000	\$ 1,883,774	\$ 505,720	\$ 911,573	\$ 7,801,067

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Clinical Eff	Clinical Effectiveness and Patient Safety	atient Safety		Molec	Molecular Proteomics in Cardiovascular Disease and Prevention	n Cardiovascular	Disease and Prev	ention
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue			_	b					o	
State funds	· <del>У</del>	· &	٠ <del>د</del>	· &	· •	\$ 221,505	υ	· &	· \$	\$ 221,505
Non-state matching funds		•	•	•	•		222,801	•	•	222,801
Total contribution revenue	'	'	,	•	•	221,505	222,801	•	1	444,306
Investment Income										
Realized gain (loss)	•	•	•	182,614	182,614	•	•	•	324,758	324,758
Unrealized gain (loss)	•	•		607,932	607,932	•	•	•	1,072,840	1,072,840
Endowment income	•	•	•	59,431	59,431		•	•	105,167	105,167
Total investment income (loss)				849,977	849,977		•	•	1,502,765	1,502,765
<b>Total revenue</b>				849,977	849,977	221,505	222,801	•	1,502,765	1,947,071
Expenditures										
Personal services	•	•	•	66,401	66,401	•	•	30,440	•	30,440
Fringe	•	•	•	14,410	14,410	•	•	9,132	•	9,132
Travel	•	•		6,854	6,854		•	•		
Supplies	•	•	•	28,808	28,808	1	•	•	76,890	76,890
Contractual	•	•	•	- 777	' ;;	•	•	•	' 10	' 10
Administrative fees	•	•	•	76,444	76,444	•	•	•	786,76	785,75
Other	•	•	•	329	329	•	•	•	•	•
Facilities Equipment										
Total expenditures				193,246	193,246			39,572	134,477	174,049
Program net income (loss)	•	•	ı	656,731	656,731	221,505	222,801	(39,572)	1,368,288	1,773,022
Transfers	•	•	•		•	•	•	215,498	(215,498)	•
Cumulative Program Net Income Beginning	5,000,000	2,000,000		391,371	7,391,371	4,778,495	3,292,908	1,114,274	60,309	9,251,986
Ending	\$ 5,000,000	\$ 2,000,000		\$ 1,048,102	\$ 8,048,102	\$ 5,000,000	\$ 3,515,709	\$ 1,290,200	\$ 1,219,099	\$ 11,025,008

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Торас	Tobacco-Related Malignancy	jnancy				Stroke		
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment	Total
Contribution Revenue State funds	. ↔	±9	€9	₩	₩	↔	. ↔	. ↔	· <del>ω</del>	· •
Non-state matching funds	•	50,000	17,776	•	67,776	•	•	•	•	•
Total contribution revenue		50,000	17,776	•	9/1/29	•	•			•
Investment Income Realized dain (loss)		,	,	195 579	195.579				202 052	202.052
Unrealized gain (loss)	•	•	•	647,882	647,882	•	•	•	671,913	671,913
Endowment income	•	•	•	63,231	63,231	1	•	•	65,711	65,711
Total investment income (loss)	•		•	906,692	906,692			•	939,676	939,676
Total revenue	•	50,000	17,776	906,692	974,468		٠	•	939,676	939,676
Expenditures			0000		4000			100		200
Fersonal services			5.770		5.770			56.830		56.830
Travel	•	•		•	•	•	•	288	•	288
Supplies	•	1	1	•	•	•	•	13	•	13
Contractual Administrative fees			- 888	83,838	- 84,727			1,500	84,475	- 85,975
Other	•	•	•	•	•	•	•	•	•	•
Facilities Equipment										
Total expenditures	1		25,891	83,838	109,729	•		284,155	84,475	368,630
Program net income (loss)	•	20,000	(8,115)	822,854	864,739	•	•	(284,155)	855,201	571,046
Transfers		•	431,054	(431,054)	•			343,520	(343,520)	•
Cumulative Program Net Income Beginning	5,000,000	1,621,812	824,452	1,354,416	8,800,680	5,000,000	2,500,000	521,719	730,417	8,752,136
Ending	\$ 5,000,000	\$ 1,671,812	\$ 1,247,391	\$ 1,746,216	\$ 9,665,419	\$ 5,000,000	\$ 2,500,000	\$ 581,084	\$ 1,242,098	\$ 9,323,182

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Rer	Renal Disease Biomarker	rker			Cancer Ste	Cancer Stem Cell Biology and Therapy	d 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	\$ 242.366	₩	<del>У</del>	<del>У</del>	\$ 242.366	· \$	•	<del>У</del>	· •	· •
Non-state matching funds		22,200	201,549	2,000		,	25	26,000	26,267	52,292
Total contribution revenue	242,366	22,200	201,549	2,000	468,115	•	25	26,000	26,267	52,292
Investment Income										
Realized gain (loss)	•	•	•	142,832	142,832	•	•	•	167,900	167,900
Unrealized gain (loss)	•	•		469,195	469,195	•	•		556,088	556,088
Total investment income (loss)				658,257	658,257				778.494	778,494
Total revenue	242,366	22,200	201,549	660,257	1,126,372		25	26,000	804,761	830,786
Expenditures										
Personal services	•	•	43,811	•	43,811	•	•	6,726	•	6,726
Fringe	•	•	13,120	•	13,120	•	•	2,018	•	2,018
Travel	•	•	353	•	353	•	•	•	•	•
Supplies	•	•	(78)	•	(78)	•	•	15,954	•	15,954
Contractual	•	•			•	•	•	•		•
Administrative fees	•	•	10,078	900'09	70,084	•		1,300	69,834	71,134
Other	•	•	1,144	•	1,144	•	•	888	1,362	2,250
Facilities	ı	•	•	•	•	•	•	1	•	' !
Equipment	•	•	•	•	•	•	•	70,154	•	70,154
Total expenditures	•	•	68,428	900'09	128,434	•	•	97,040	71,196	168,236
Program net income (loss)	242,366	22,200	133,121	600,251	997,938	•	25	(71,040)	733,565	662,550
Transfers	•	•	44,677	(44,677)	•		•	56,165	(56,165)	•
Cumulative Program Net Income Beginning	4,315,735	1,370,377	589,967	(72,662)	6,203,417	5,000,000	1,520,511	1,564,781	183,625	8,268,917
Ending	\$ 4,558,101	\$ 1,392,577	\$ 767,765	\$ 482,912	\$ 7,201,355	\$ 5,000,000	\$ 1,520,536	\$ 1,549,906	\$ 861,025	\$ 8,931,467

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Advano	Advanced Tissue Biofabrication	rication			Medica	Medication Safety and Efficacy	fficacy	
	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	. ↔		. ↔		.' ₩	\$ 500,000				\$ 500,000
Non-state matching funds	•	300,000	47,130	•	347,130	•	•	•	•	
Total contribution revenue	•	300,000	47,130	1	347,130	500,000	•	1	•	200,000
Investment Income				400 674	122 674				20 77	4.0
Nealized gain (loss) Unrealized gain (loss)				391,199	391,199				128,977	128,977
Endowmentincome	•	•	•	38,944	38,944	•	•	•	13,201	13,201
Total investment income (loss)		•	•	553,817	553,817	1			183,519	183,519
<b>Total revenue</b>		300,000	47,130	553,817	900,947	500,000	•		183,519	683,519
Expenditures Personal services	,	,		,				,	,	
Fringe	•	1	•	1	•	•	•	1	•	•
Travel										
Contractual	•	•	•	•	•	•	•	•	•	•
Administrative fees				49,743	49,743	• •			15,925	15,925
Facilities	•		47,130	•	47,130	1	•	•	1	•
Equipment	•	•		•	•	•	•	•	•	•
Total expenditures	•	•	47,130	49,743	96,873	1	•	•	15,925	15,925
Program net income (loss)	•	300,000	•	504,074	804,074	200,000	•	•	167,594	667,594
Transfers	•	•	•	•	•	•	•	•	•	•
Cumulative Program Net Income Beginning	4,060,571	000'009	75,000	43,162	4,778,733	850,000	000'009	137,344	6/0/6	1,596,423
Ending	\$ 4,060,571	\$ 900,000	\$ 75,000	\$ 547,236	\$ 5,582,807	\$ 1,350,000	\$ 600,000	\$ 137,344	\$ 176,673	\$ 2,264,017

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Prost	Prostate Cancer Disparities	arities			Lipidomics	Lipidomics, Pathobiology and Therapy	nd 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	e	e	e	Ð	¥	\$ 700.002	e	e	e	700 303
Non-state matching funds	9	9		9	20.		- 000 032	- 44 672	<del>0</del>	
Total contribution revenue			1.052	.   .	1.052	700.292	750.000	14.672		1.464.964
Investment Income Realized gain (loss)	•	•	•	116 062	116 062	•	•	•	90.271	90.274
Unrealized gain (loss)	•			384,956	384,956	•		•	250,234	250,234
Endowment income	•	•	•	37,723	37,723	•	•	•	25,915	25,915
Total investment income (loss)	1	1	1	538,741	538,741	1	1		366,420	366,420
<b>Total revenue</b>	1	•	1,052	538,741	539,793	700,292	750,000	14,672	366,420	1,831,384
Expenditures										
Personal services	•	•	•	•	•	•		•	•	•
Fringe	•	•	•	•	•	•	•	•	•	•
Iravel Supplies										
Contractual	•	•	30.000	•	30.000	•	•	•	•	•
Administrative fees	•	•	53	48,374	48,427	•	•	2,834	33,538	36,372
Other	•	•	•	•	•	•	•	6,744	•	6,744
Facilities	•		•	•	•	•		123,709	•	123,709
Equipment	•	•	1 0	1 10	'	•	•	1 000	1 000	
Total expenditures	•	1	30,053	48,374	78,427	1	1	133,287	33,538	166,825
Program net income (loss)	•	•	(29,001)	490,367	461,366	700,292	750,000	(118,615)	332,882	1,664,559
Transfers	•	•	19,189	(19,189)	•	•	•	•	•	•
Cumulative Program Net Income Beginning	3,600,000	1,080,000	8,457	(53,080)	4,635,377	2,200,766	551,075	(164)	55,862	2,807,539
Ending	\$ 3,600,000	\$ 1,080,000	\$ (1,355)	\$ 418,098	\$ 5,096,743	\$ 2,901,058	\$ 1,301,075	\$ (118,779)	\$ 388,744	\$ 4,472,098

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE MEDICAL UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

			Nanostructures					Brain Imaging		
	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	₩	€	↔	↔	· •	. ↔	€	<del>«</del>	₩	<del>«</del>
Non-state matching funds	•	•	•	•	•	•	•	,	•	•
Total contribution revenue	1					1				
Investment Income				000	68 383				9 7 7 8 9	06.100
Nealized gain (loss) Unrealized dain (loss)				120.027	120.027			' '	149.070	149.070
Endowment income	•	•		249,583	249,583	•		•	266,566	266,566
Total investment income (loss)				437,892	437,892		1	ı	500,825	500,825
Total revenue	•	•	•	437,892	437,892	•	•	•	500,825	500,825
Expenditures Personal services		•	•	40.333	40,333	•	•	•	102,365	102,365
Fringe	•	•	•	3,084	3,084	•	•	٠	20,981	20,981
Travel	•	•	•	•	•	•	•	•	•	•
Supplies	•		1,329	36,497	37,826	•	•	•	•	•
Contractual	•	•	•	16,597	16,597	•	•	•	1,165	1,165
Tuition assistance	•	•	•	•	•	•	•	•	•	•
Fixed charges	•	•	•	•	•	•	•		•	•
Indirect cost recovery	•	•	•	' '	•	•	•	•	' !	
Administrative fees	•			21,728	21,728	•		•	27,058	27,058
Otner Equipment					re, '					
Total expenditures			1,329	119,030	120,359				151,569	151,569
Program net income (loss)		•	(1,329)	318,862	317,533	•	٠	•	349,256	349,256
Transfers	•		•		•		•		•	•
Cumulative Program Net Income Beginning	4,000,000	1,633,005	1,329	937,562	6,571,896	5,000,000	2,089,589	•	551,284	7,640,873
Ending	\$ 4,000,000	\$ 1,633,005	₩	\$ 1,256,424	\$ 6,889,429	\$ 5,000,000	\$ 2,089,589	· ↔	\$ 900,540	\$ 7,990,129

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Poly	Polymer Nanocomposites	sites			Hydro	Hydrogen Fuel Cell Economy	onomy	
	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	· <del>•</del>	<del>6</del> 5	<del>υ</del>	€	u.	· <del>6</del>	€.	<del>6</del> 5	· <del>•</del>	<del>U</del>
Non-state matching funds	,	1,811	,	,	1,811	,	,	,	,	•
Total contribution revenue		1,811	1	1	1,811	1	1	1	1	
Investment Income Realized rain (loss)		,		69 546	69 546		,	,		
Unrealized gain (loss)	•	•	•	121,956	121,956	•	•	•	•	•
Endowment income	•	•	•	209,441	209,441	•	•	•	255,383	255,383
Total investment income (loss)				400,943	400,943				255,383	255,383
Total revenue	•	1,811	1	400,943	402,754		•	•	255,383	255,383
Expenditures Personal services	,	,		231,435	231.435			,	•	
Fringe	•	•	•	45,085	45,085	•	•	•	,	
Travel		•	•	14,546	14,546	•		•	•	•
Supplies	•	•	•	11,016	11,016	•	•	3,969	•	3,969
Contractual	•	•	•	7,390	7,390	•	•	4	•	14
Tuition assistance	•	•	•	9,419	9,419	•	•	(2,730)	•	(2,730)
Fixed charges	•	•	•	8,643	8,643	•	•	•	•	•
Indirect cost recovery	•	•	•	•	•	•	•	•	•	•
Administrative fees	•	•	•	12,911	12,911	•	•	•	•	
Other Equipment				C85,1	C85,T			34.		· 48
Total expenditures				341,840	341,840			1,287		1,287
Program net income (loss)	٠	1,811	٠	59,103	60,914	•	•	(1,287)	255,383	254,096
Transfers	•	(10,208)	,	10,208	•	•	•	1,287	•	1,287
Cumulative Program Net Income Ending	3,500,000	1,431,538	•	209,367	5,140,905	5,000,000	1,500,000	•	699,813	7,199,813
Ending	\$ 3,500,000	\$ 1,423,141	· ↔	\$ 278,678	\$ 5,201,819	\$ 5,000,000	\$ 1,500,000	<b>.</b> ⇔	\$ 955,196	\$ 7,455,196

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Tourism		Development					Renewable Fuel Cells			
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment		Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	  -	Total
Contribution Revenue State funds	<del>6</del>	€9	<del>С</del>	69	<b>ь</b>		49	<del>У</del>	<del>6</del>	ь	<b>49</b>	
Non-state matching funds	,	,	,	46,400		46,400	,	•	,	•	,	
Total contribution revenue				46,400	001	46,400			1		  -	•
Investment Income Realized gain (loss)		,	,	55 057	257	55.057	,	,	,	64 140	Ç	64.140
Unrealized gain (loss)	•	•	•	95,109	60	95,109	•	•	•	113,184	41	113,184
Endowment income  Total investment income (loss)	.   .	.   .	.   .	269,467		269,467	.   .	.   .	.   .	345,721	  -	345,721
Total revenue		'	•	315,867	2987	315,867	•	'	1	345,721	=	345,721
Expenditures Personal services		,	,	50 686	98	50.686	,	,	,	178 599	<u>o</u>	178.599
Fringe	•	•	•	5,6	5,677	5,677	•	•	•	18,105	ğ.	18,105
Travel	•	•	•		27	27	•	•	•	2,234	4	2,234
Supplies	•	•	•	3,5	3,533	3,533		•	•			•
Contractual	•	•	•				•	•	•			
Tuition assistance	•	•	•				•	•	•	40,470	0	40,470
Fixed charges	•	•	•				•	•				
Indirect cost recovery	•	•	•				•	•	•			
Administrative fees	•	•	•	17,369	369	17,369	•	•	•	20,443	က္	20,443
Other	•	•	•	8,8	8,801	8,801	•	•	•			
Equipment	•	•	•		  -	•	•	•	•		  -	•
Total expenditures		•		86,093	93	86,093	1	•	1	259,851	-   -	259,851
Program net income (loss)	•	•	•	229,774	74	229,774	•	•	•	85,870	0	85,870
Transfers	•	•	•			•	•	•	•			
Cumulative Program Net Income Ending	2,000,000	1,363,600	87	602,308		3,965,995	3,000,000	1,200,000	•	637,468	<u>ω</u>	4,837,468
Ending	\$ 2,000,000	\$ 1,363,600	\$ 87	\$ 832,082	<b>ь</b>	4,195,769	\$ 3,000,000	\$ 1,200,000	€	\$ 723,338	<b>به</b>	4,923,338

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		S	Solid Oxide Fuel Cells	ells			Childl	Childhood Neurotherapeutics	peutics	
	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	€	€5	€	€	·	€5	· ·	€	€	<del></del>
Non-state matching funds	•	,	•	•		•	•	,	•	
Total contribution revenue					1	,		•		
Investment Income				L C	L				200	700
Realized gain (loss) Unrealized gain (loss)				5,665	9,065				123,791	123,791
Endowment income	•	•	1	175,031	175,031		•	•	228,420	228,420
Total investment income (loss)				190,420	190,420	ı			564,710	564,710
Total revenue	•	•	•	190,420	190,420		•	•	564,710	564,710
Expenditures Personal services	•	•	•	46,687	46,687	•	•	•	•	•
Fringe	•	•	•	7,304	7,304	•	•	•	•	•
Travel	•	•	•	1,374	1,374	•	•	•	4,797	4,797
Supplies	•	•	•	8,101	8,101	•	•	•	22	22
Contractual	•	•	•	19,663	19,663	•	•	•	167,298	167,298
Tuition assistance	•	•	•	9,402	9,402	•			•	•
Fixed charges	•	•	•	•	•	•	•	•	•	
Indirect cost recovery	•	•	•	•	•	•	•	•	•	
Administrative fees	•	•	•	1,785	1,785	•	•	•	39,015	39,015
Other				26,392	26,392				•	
Haipinelli F				442,052	442.052				122	244 455
lotal experiorates	•			45,855	50,000		•		261,112	261,112
Program net income (loss)	•	•	•	46,467	46,467	•	•	•	353,578	353,578
Transfers	1	•	•	•	•	•	•	•	•	•
Cumulative Program Net Income Ending	3,000,000	000,006		332,223	4,232,223	5,000,000	2,500,000	•	447,513	7,947,513
Ending	\$ 3,000,000	\$ 900,000	₩	\$ 378,690	\$ 4,278,690	\$ 5,000,000	\$ 2,500,000	. ↔	\$ 801,091	\$ 8,301,091

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 39, 2013

		Rehabilitatio	Rehabilitation and Reconstruction Science	ction Science			Strategic Approaches to Electricity Production from Coal	es to Electricity F	roduction from C	oal
	State	Non-State Endowment	Non-State Expendable	Earnings Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue	,	•	•	•	•		,	•	,	,
State funds		· ·	•	· ₩	· •	· ↔	ı ₩	· •	· 00	· 00
Non-state matching lunus	•	•		•	•	•			000,6	),00°C
Total contribution revenue	•	•			•	•	•	•	2,000	2,000
Investment Income										
Realized gain (loss)	•	•	•	61,123	61,123	•	•	•	115,415	115,415
Unrealized gain (loss)	•	•	•	104,925	104,925	•	•	•	202,955	202,955
Endowment income			•	101,688	101,688	•	•	•	223,867	223,867
Total investment income (loss)		1	1	267,736	267,736	1	1	1	542,237	542,237
Total revenue		1	,	267,736	267,736	•	•	•	547,237	547,237
Expenditures										
Personal services	•	•	•	•	•	•		163,012	164,865	327,87
Fringe	•	•	•	•	•	•		17,279	30,174	47,453
Travel	•	•	•	1,330	1,330	•		19,924	5,437	25,361
Supplies	•	•	•	•	•	•		112,472	6,308	118,780
Contractual	•	•	•	21,172	21,172	•	•	14,246	7,581	21,827
Tuition assistance	•	•	•	•	•	•	•	•	866'8	866'8
Fixed charges	•	•	•	•	•	•		25,359	9	25,36
Indirect cost recovery	•	•	•	•	•	•	•	•	•	
Administrative fees	•	•	•	19,264	19,264	•	•	•	36,732	36,732
Other	•	•	•	•	•	•	•	•	1,427	1,427
Equipment			•	•	•	•			•	
Total expenditures			1	41,766	41,766			352,292	261,528	613,820
Program net income (loss)	•	•	1	225,970	225,970	•	•	(352,292)	285,709	(66,583)
Transfers	•	•	•	•	•	•	•	•	•	
Cumulative Program Net Income Ending	2,000,000	1,237,500	868'09	135,342	3,433,740	5,000,000	2,000,000	1,201,158	1,380,416	9,581,574
Ending	\$ 2,000,000	\$ 1,237,500	\$ 60,898	\$ 361,312	\$ 3,659,710	\$ 5,000,000	\$ 2,000,000	\$ 848,866	\$ 1,666,125	\$ 9,514,991

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

			Healthcare Quality				Se	Senior SMART™ Center	nter	
	State	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	Total
Contribution Revenue State funds	€	. ↔	€	↔	· •	\$ 2,131,508	€	· •	↔	\$ 2,131,508
Non-state matching funds			1,558,548		1,558,548		•	6,792		6,792
Total contribution revenue	1		1,558,548		1,558,548	2,131,508		6,792		2,138,300
Investment Income Realized dain (loss)		,		98 038	98 038		,		,	
Unrealized gain (loss)	•	•	•	168,293	168,293	•	•	•	•	
Endowment income	•	•	•	225,115	225,115	•	•	•	103,393	103,393
Total investment income (loss)			1	491,446	491,446	1			103,393	103,393
Total revenue	•	•	1,558,548	491,446	2,049,994	2,131,508	1	6,792	103,393	2,241,693
Expenditures Personal services		,	1.213.245	(25.000)	1.188.245		,	7.849	20.175	28.024
Fringe	•	•	248,188	(220)	247,638	•	•	2,174	4,172	6,346
Travel	•	•	24,105	` '	24,105	•	•	44		44
Supplies	•	•	12,305	•	12,305	•	•	291	•	291
Contractual	•	•	18,195	•	18,195	•	•	•	•	
Tuition assistance	•	•	•	•	•	•	•	•		
Fixed charges	•	•	15,228		15,228	•	•	•	•	
Indirect cost recovery	•	•	•		•	•	•	•	•	•
Administrative fees	•	•	•	30,899	30,899	•	•	•	•	• !
Other	•	•	27,282		27,282	•	1	175	•	175
	•	•	1 0	' (	1 000	•	'	1 00		
Total expenditures	•	'	1,558,548	5,349	1,563,897	'		10,930	24,347	35,277
Program net income (loss)	•	•	•	486,097	486,097	2,131,508	•	(4,138)	79,046	2,206,416
Transfers	•	•	•	•	•	•	•	•	•	•
Cumulative Program Net Income Ending	5,000,000	2,000,000	•	337,832	7,337,832	2,000,000	•	2,047,098	298,552	4,345,650
Ending	\$ 5,000,000	\$ 2,000,000	· •	\$ 823,929	\$ 7,823,929	\$ 4,131,508	· •	\$ 2,042,960	\$ 377,598	\$ 6,552,066

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Nanoenvironmental Research	ntal Research and	and Risk Assessment			Nuck	Nuclear Science and Energy	nergy	
	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	٠ &	٠ <del>د</del>	· &	٠ ج	· •	٠ ج	٠ ج	٠ ج	ج	٠ <del>ده</del>
Non-state matching funds			43,248		43,248		245,000			245,000
Total contribution revenue		1	43,248	ı	43,248	1	245,000		1	245,000
Investment Income										
Realized gain (loss)	•	•	•	54,458	54,458	•	•	•	33,177	33,177
Unrealized gain (loss)	•	•	•	95,747	95,747	•	•	•	49,553	49,553
Endowment income	•	•	•	142,584	142,584	•	•	•	110,731	110,731
Total investment income (loss)	1			292,789	292,789				193,461	193,461
Total revenue	•	1	43,248	292,789	336,037	•	245,000	•	193,461	438,461
Expenditures Dereonal convince	,	•	000 00	77 967	77 873		,	009 8	00000	46 5.42
			20,303	47,004	2,00			3,000	74,242	240,04
and an analysis of the second	•	•	0,997	0,513	19,512	•	•	00.00	0.14,7	2,47
Iravel	•	•	/10	/60	415,1	•	•	2,548	•	2,348
Salidans	•	•	20 00	' '	8	•	•	335	•	333
Contractual	•	•	3,627	32,816	36,443	•	•	358	•	358
Tuition assistance	•	•	•		•	•	•	•	•	
Fixed charges		•	•		•	•	•	722		722
Indirect cost recovery	•	•	•		•	•	•	2,670	•	2,670
Administrative fees	•	•	•	17,331	17,331	•		2	10,296	10,298
Other	•	•	•		•	•	•	2	•	7
Equipment	•	•	•	•	•	•	•	•	•	•
Total expenditures			43,248	109,123	152,371	1		10,296	60,651	70,947
Program net income (loss)	1	1	•	183,666	183,666	•	245,000	(10,296)	132,810	367,514
Transfers	•	•	•	•	•	•	•	(6,479)	•	(6,479)
Cumulative Program Net Income Ending	3,000,000	1,000,000	2,120	294,700	4,296,820	2,280,737	445,000	189,151	71,248	2,986,136
Ending	\$ 3,000,000	\$ 1,000,000	\$ 2,120	\$ 478,366	\$ 4,480,486	\$ 2,280,737	\$ 690,000	\$ 172,376	\$ 204,058	\$ 3,347,171

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

		Nuc	Nuclear Science Strategies	tegies				Healthful Lifestyles	Sə	
	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		<del>ω</del>	<del>ω</del>	<del>У</del>	<del>«</del>	<del>ω</del>	<del>ω</del>	ب		<del>ග</del>
Non-state matching funds		180,000			180,000					•
Total contribution revenue	1	180,000			180,000					
Investment Income Realized gain (loss)	•		•	20.335	20.335	•	,	•	22.303	22.303
Unrealized gain (loss)	•	•	•	23,848	23,848	•	•	•	38,286	38,286
Endowment income  Total investment income (loss)		.   .		144,714	100,531	.   .	.   .	.   .	128,347	128,347
Total revenue		180,000	'	144,714	324,714		•		188,936	188,936
Expenditures Personal services	•	,		•	•	•		,	44,573	44,573
Fringe	•	1	1	•	•	•	1	•	13,372	13,372
Travel									2,116	2,116
Contractual	•		•	•	•	•	•		30,000	30,000
Tuition assistance	•	•	•	•	•	•	•	•	•	•
Fixed charges	•	•	•	•	•	•	1	•	•	•
Indirect cost recovery Administrative fees				5,389	5,389				7,029	7,029
Other										
Total expenditures				5,389	5,389				060'26	060,76
Program net income (loss)		180,000	•	139,325	319,325	٠	٠		91,846	91,846
Transfers	•	•	•	•	•	•	•	•	•	
Cumulative Program Net Income Ending	1,918,308	330,000		6,446	2,254,754	3,000,000	900,000		198,132	4,098,132
Ending	\$ 1,918,308	\$ 510,000	€	\$ 145,771	\$ 2,574,079	\$ 3,000,000	\$ 900,000	₩	\$ 289,978	\$ 4,189,978

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE UNIVERSITY OF SOUTH CAROLINA PROGRAM REVENUES AND EXPENDITURES YEAR ENDING JUNE 30, 2013

	State	Non-State	Non-State	Non-State Non-State Endowment		State	Non-State	State Non-State Endow	Endowment	
	Endowment	Endowment	Expendable	Earnings	Total	Endowment	Endowment	Expendable	Earnings	Total
Contribution Revenue										
State funds	٠ &	- &>	' \$	٠ &	· •	\$ 2,131,508	' ↔	· ↔	↔	\$ 2,131,508
Non-state matching funds	•	•	•	•	•	•	426,811	1,608,588	51,400	2,086,799
Total contribution revenue	•	•	•	•	•	2,131,508	426,811	1,608,588	51,400	4,218,307
Investment Income										
Realized gain (loss)	•	•	•	74,083	74,083	•	•	•	950,602	950,602
Unrealized gain (loss)	•	•	•	129,894	129,894	•	•	•	1,635,070	1,635,070
Endowmentincome	•	•	•	109,328	109,328	•	•	•	2,917,706	2,917,706
Total investment income (loss)				313,305	313,305		•	•	5,503,378	5,503,378
Total revenue		1	•	313,305	313,305	2,131,508	426,811	1,608,588	5,554,778	9,721,685
Expenditures			1	,	,	,	1	1 117 615	045 624	2 2 2 2 2 2
reisoliai seivices	•		•	1	•	•	•	0.0,7.1,	470,046	2,000,2
Fringe	•	•	•	•	•	•	•	276,697	165,132	441,829
Travel	•	•			•		•	47,635	32,558	80,193
Supplies	•	•	•		•	•	•	130,799	65,477	196,276
Contractual	•	•	•		•	•	•	36,440	303,682	340,122
Tuition assistance	•	•	•		•	•	•	(2,730)	68,289	62,559
Fixed charges	•	•	•		•	•	•	41,309	8,649	49,958
Indirect cost recovery	•	•	•		•	•	•	2,670	•	2,670
Administrative fees	•	•	•	23,550	23,550	•	•	2	290,799	290,801
Other	•	•	•		•	•	•	27,459	38,806	66,265
Equipment	•	•	•		•	•	•	34	23,245	23,279
Total expenditures	1			23,550	23,550	1		1,977,930	1,942,261	3,920,191
Program net income (loss)	•	•	•	289,755	289,755	2,131,508	426,811	(369,342)	3,612,517	5,801,494
Transfers	•	•	•	•	•	•	(10,208)	(5,192)	10,208	(5,192)
Cumulative Program Net Income Ending	2,000,000	1,582,098	•	164,694	3,746,792	56,699,045	22,112,330	3,501,841	7,304,900	89,618,116
Ending	\$ 2,000,000	\$ 1,582,098	· \$	\$ 454,449	\$ 4,036,547	\$ 58,830,553	\$ 22,528,933	\$ 3,127,307	\$ 10,927,625	\$ 95,414,418

### **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.

#### **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. Inasmuch 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, 2013, cash and investments maintained by the research institutions for program purposes was as follows:

Clemson University	\$ 89,954,793
Medical University of South Carolina	138,146,338
University of South Carolina	95,414,418
Total	\$ 323,515,549

### **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, 2013.

# Federal Grants used as Non-State Matching Funds

		Total	
		Qualifiying	Amount Used
		As Non-State	As Non-State
<u>Institution</u>	<u>Proposal</u>	Match	Match
Clemson	Optical Materials	\$ 772,961	\$ 772,961
Clemson	Sustainable Development	1,313,439	1,002,971
Clemson	Advanced Fiber-Based Materials	310,000	•
MUSC	Proteomics	1,375,919	1,313,697
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	1,605,443
MUSC	Tobacco-Related Malignancies	3,221,264	2,402,904
MUSC	Renal Disease Biomarkers	268,520	268,250
MUSC	Cancer Stem Cell	2,457,288	1,857,092
MUSC	Advanced Tissue Biofabrication	2,578,100	2,578,100
MUSC	Lipidomics	1,624,983	1,523,633
USC	Nanostructures	1,444,820	1,444,820
USC	Brain Imaging	1,336,000	1,336,000
USC	Polymer Nanocomposites	2,020,110	1,876,971
USC	Hydrogen Fuel Cell Economy	661,451	661,451
USC	Renewable Fuel Cells	970,516	970,516
USC	Solid Oxide Fuel Cells	1,258,935	655,286
USC	Childhood Neurotherapeutics	1,243,106	1,168,428
USC	Data Analysis	143,444	143,444
USC	Nanoenvironmental Research and		
	Assessment	731,822	510,749
USC	Nuclear Science and Energy	952,230	952,230
USC	Nuclear Science Strategies	1,110,839	1,110,839
		\$ 46,367,826	\$ 35,510,229

# **Notes to Financial Statements**

# Note 5. Subsequent Events

Subsequent events have been evaluated through November 29, 2013, the date these financial statements were available to be issued. As of November 29, 2013 the following drawdown requests have been submitted but have not been approved by the Joint Other Funds Committee:

Institution	Center	 Amount
MUSC	Translational Bioinformatics	\$ 1,600,273
MUSC	Medication Safety & Efficacy	250,000
MUSC	Advanced Tissue Biofabrication	337,177
Clemson	Smart Grid Technology	 2,000,000
		\$ 4,187,450





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# 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 financial statements of the South Carolina Centers of Economic Excellence for the year ended June 30, 2013, and have issued our report thereon dated November 29, 2013. 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 did not identify any deficiencies in internal control over financial reporting that we would consider to be significant deficiencies or material weaknesses, as defined above.

#### **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, the South Carolina Budget and Control Board, and the General Assembly and is not intended to be and should not be used by anyone other than those specified parties.

Derick, Stubbs & Stith, LLP

November 29, 2013