SmartState™
SC Centers of Economic Excellence

November 30, 2011

Dear South Carolina Legislator:

I am pleased to inform you that the South Carolina Centers of Economic Excellence Review Board has approved the *SmartState Program 2010-2011 Annual Report to the South Carolina General Assembly and the South Carolina Budget & Control Board* and the 2010-2011 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 (FY) 2011, the SmartState Review Board had approved 49 research centers and 87 SmartState Endowed Chair positions, of which 41 appointments have been made and announced.

As envisioned by the General Assembly, the SmartState Program has turned into an economic boon for the state. The program is now responsible for more than $1.2 billion in non-state investment in the South Carolina economy—a six-to-one return on the state's $180 million investment. The program has also led to the creation of nearly 6,900 jobs, many of which are high-paying, knowledge-based economy positions.

By statute, an electronic version of the *SmartState Program 2010-2011 Annual Report to the South Carolina General Assembly and the South Carolina Budget & Control Board* and the 2010-2011 SmartState Program Audit is being made available to you through the Office of Legislative Printing, Information and Technology Services. The annual report, along with other program information, is also available at www.smartstatesc.org. (To view the recent CBS Evening News profile of the SmartState Program, please visit the aforementioned website.) Should you desire a hardcopy annual report, please contact my colleague Mr. Arik Bjorn at abjorn@che.sc.gov or 803.737.2293.

The Commission looks forward to working with you and the other members of the South Carolina General Assembly during the current legislative session. As ever, the work the General Assembly accomplishes on behalf of higher education is greatly appreciated.

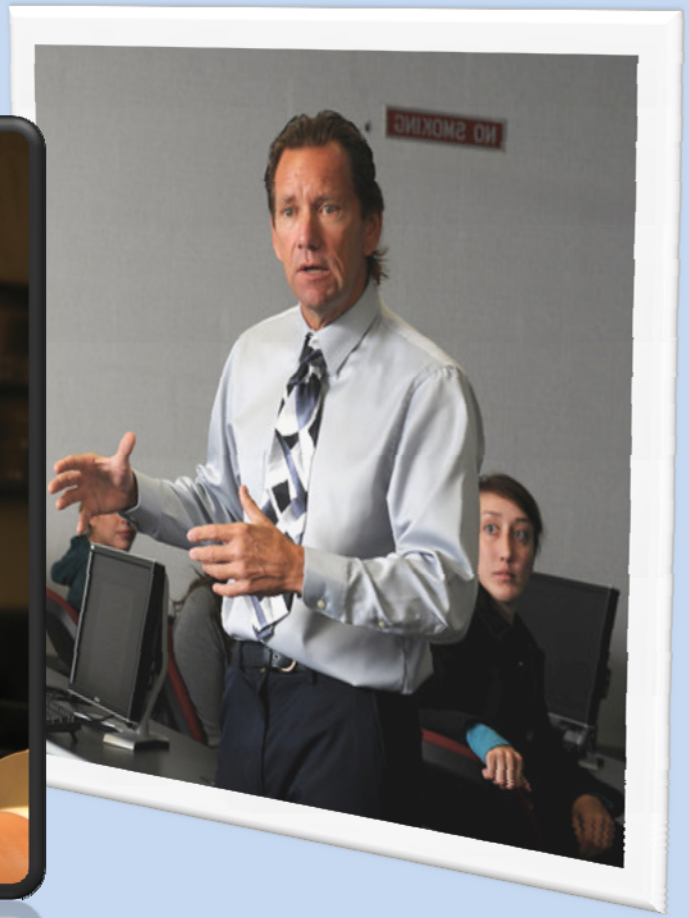
Sincerely,

T. Michael Raley
Director, Academic Affairs & Licensing
S.C. Commission on Higher Education

SmartState™
SC Centers of Economic Excellence

2010-2011 Annual Report to the S.C. General Assembly and the S.C. Budget & Control Board

University of South Carolina | Clemson University | MUSC Medical University of South Carolina



SmartState™
SC Centers of Economic Excellence

NOTE: IN MAY 2011, THE REVIEW BOARD REBRANDED THE PROGRAM FROM "COEE" TO "SMARTSTATE."

FRONT COVER: (CENTER) USC SMARTSTATE ENDOWED CHAIR DR. BRIAN BENICEWICZ HOLDS A HIGH TEMPERATURE PBI FUEL CELL MEMBRANE DEVELOPED IN HIS BASF-FUNDED LABORATORY IN THE USC HORIZON I BUILDING; (LEFT) USC SMARTSTATE ENDOWED CHAIR DR. CHRIS RORDEN OPERATES A 3.0 TESLA MAGNETIC RESONANCE IMAGING SYSTEM AT THE MCCAUSLAND CENTER FOR BRAIN IMAGING, PART OF THE BRAIN IMAGING CENTER OF ECONOMIC EXCELLENCE; (RIGHT) SMARTSTATE ENDOWED CHAIR DR. SIMON HUDSON OF THE TOURISM & ECONOMIC DEVELOPMENT CENTER OF ECONOMIC EXCELLENCE COMMENTS ON CONSUMER TRENDS IN TOURISM FOR GRADUATE STUDENTS.

SmartState™
SC Centers of Economic Excellence

Message from the SmartState Review Board Chair

As the SmartState™ Program approaches the one decade mark of the enormous challenge of building the state's knowledge-based economy through academic-industry partnerships, it is appropriate to look back on the history of this program, which has been called the best of its kind in the nation by no less than the Washington Advisory Group (now the Advisory Group at Huron).

In the late 1990s and at the urging of state business leaders, state delegations visited the campuses and leaders at The University of Texas at Austin and the North Carolina Research Triangle in order to see the enormous positive economic impact that results from building a state's knowledge base. These two trips resulted in the passage of the Research Centers of Economic Excellence Act by the South Carolina General Assembly in 2002 and the creation of the SmartState Program.

The SmartState Program creates the opportunity for our state's three senior research institutions to recruit dozens of world-class scientists and engineers to the state and to work collaboratively in ways truly unprecedented. Rather than competing for resources, as is the national norm, South Carolina's research institutions now work together to strengthen the state's economy.

At this point, it is valid to ask questions about the success of the program. Should the program continue to be supported? With the information provided in this annual report, the only answer my fellow Review Board members and I can arrive upon is a resounding **YES**.

The SmartState Program is responsible for **$1.2 billion** in external investment in the state economy—*a six-to-one return on the state's investment of lottery proceeds (not tax dollars)*. The program also has resulted in the creation of nearly **7,000 jobs**. And this is just the tip of the iceberg. Each year, SmartState research teams pique the investment interest of corporations and federal agencies to the tune of tens of millions of dollars above the program's dollar-for-dollar matching requirement.

Without question, the SmartState Program is responsible for the burgeoning of the automotive industry in the Upstate. Without the program, more than 1,000 stroke victims (including many rural citizens in our state) would never have received lifesaving telemedicine consults from MUSC. SmartState is also what drew members of the National Academies of Science and Engineering to USC to open wide the doors for nanotechnology and fuel cell research.

Returning to history, the lessons learned by our neighboring states demonstrate that investment in knowledge-based economic development for one decade is not sufficient. South Carolina has built one of the finest knowledge-based economic engines in the nation. It is time to continue funding the visionary and clearly successful SmartState Program and build upon the economic growth we have experienced.

Regan Voit
Chair, SmartState Review Board
November 2011

The Council of Chairs was well-represented at a number of key conferences this year, including BIO2011 in Washington DC. Here SmartState Endowed Chair and HSSC President, Dr. Jay Moskowitz, teams up with NXT founder, Tom Jennings, at the South Carolina booth to promote the state's numerous biomedical academic research achievements.

At the end of FY 2011, 41 SmartState Endowed Chairs were appointed at MUSC, USC and Clemson. This year, SmartState Endowed Chairs alone brought in more than $22M in private and federal research grants into the state. Overall, the SmartState Program has brought in **$1.2 billion** in investments to SC.

SmartState™
SC Centers of Economic Excellence

This past year, the SmartState Council of Chairs began a special partnership with the Governor's School for Science and Mathematics. Rising seniors like Chanté Glass Walley (l) spent their summer vacation interning with SmartState Endowed Chairs at USC, MUSC and Clemson. A number of SmartState Endowed Chairs, including SmartState Endowed Chair Dr. Louis Guillette (r) also visited the Governor's School to present special lectures on the endeavors of their research centers. [Read more on Page 9.] [LEFT PHOTO CREDIT BY POST & COURIER.]

Message from the SmartState Council of Chairs

Not two weeks before this report went to press, I received a call from the CBS Evening News, which was preparing a national news profile of the SmartState Program™ through the lens of the automotive engineering program at Clemson University—this, at a time when the national economic news seems bleaker by the hour. Yet here in South Carolina, a program which unites the strengths of industry and academia has kindled hope.

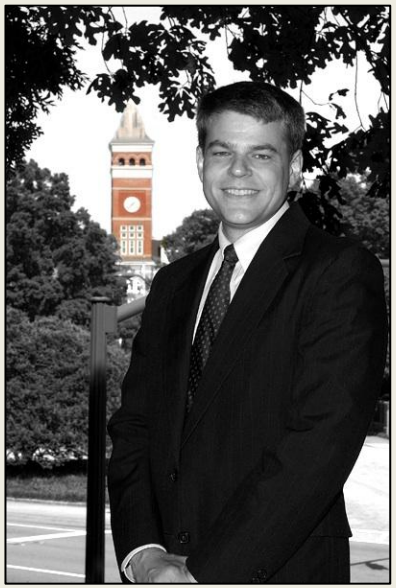
I spend many weeks of the year attending international conferences and being called upon globally as a manufacturing expert. The exciting news of the SmartState Program which I present to industry leaders in cities as far-ranging as Tokyo and Munich, frankly, almost comes as a shock. Through the valleys of the Great Recession, our state is emerging victorious because of a commitment to strengthening its knowledge base.

This commitment to building academic-industry partnerships extends far beyond the millions of dollars in research grants the SmartState Centers receive each year. This year, the Council of Chairs began a partnership with the Governor's School for Science and Mathematics, placing our state's best and brightest students in SmartState laboratories across the state. Students who were guaranteed Ivy League scholarships are now considering staying home to study nanotechnology, biomedicine and engineering. These students, the entrepreneurs of tomorrow, now believe in South Carolina.

One week after this report is released, the Council of Chairs will host the inaugural SmartState Program National Conference in Charleston. Industry and research leaders from around the world will convene in our state to witness a showcase of the 49 Centers of Economic Excellence, which are charged with making a difference in South Carolina. We now have the world's economic attention like never before, and I am indeed proud to represent the dozens of world-class SmartState Endowed Chairs this year.

Dr. Thomas Kurfess
Chair, SmartState Council of Chairs
November 2011

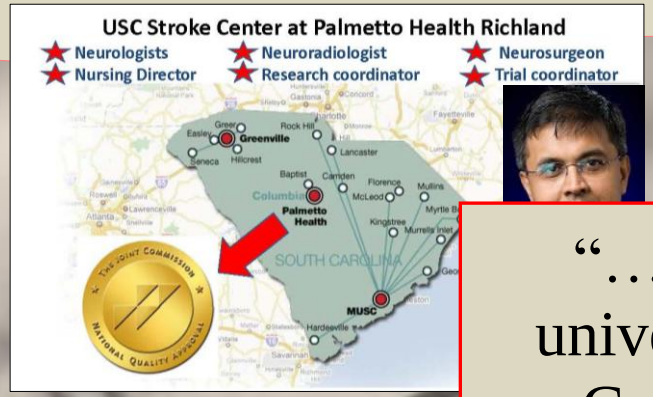
Dr. Kurfess discusses the success of the SmartState Program with S.C. Representative Gilda Cobb-Hunter.



Dr. Thomas Kurfess, BMW Endowed Chair in Manufacturing at Clemson, and FY 2011 Chair of the SmartState Council of Chairs.

SmartState Program in the News

"SmartState Endowed Chair Achieves Joint Commission Certification for Midlands"



"SmartState Endowed Chair Dr. Marc Chimowitz Publishes Landmark Stroke Study in *New England Journal of Medicine*"

"…investing in public universities to turn South Carolina into a center for high tech…"

CBS NEWS

"General Atomics Invests $900K in USC Nuclear SmartState Pr

ate Endowed Chair Guillette Earns Prestigious Heinz Award"

In 2002, the South Carolina General Assembly passed the Research Centers of Economic Excellence (RCEE) Act. Since 2003, $180M has been appropriated from the State Education Lottery to establish unique Centers of Economic Excellence at the state's three research institutions: Clemson, USC, and MUSC.

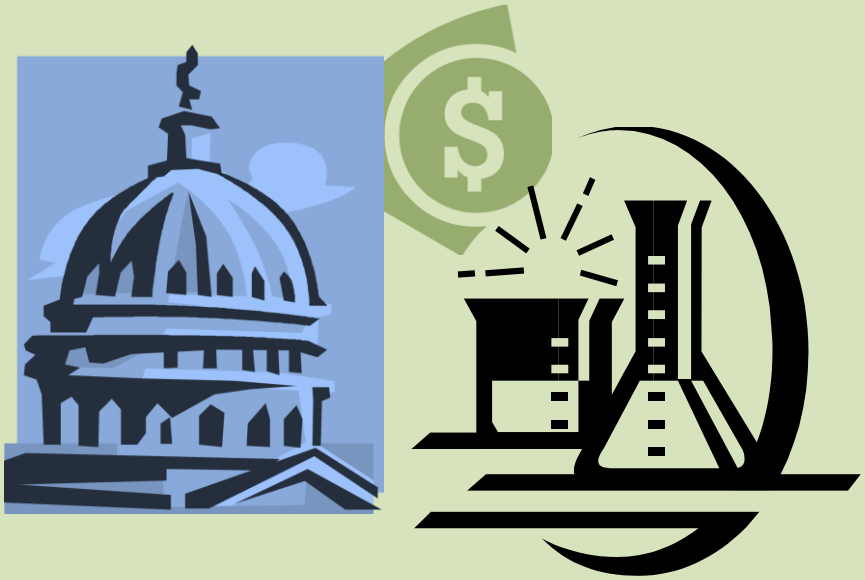
The RCEE Act created the SmartState Review Board, which provides program oversight. Staff and operational support are provided by the South Carolina Commission on Higher Education.

The SmartState Review Board oversees an annual competitive process whereby Centers of Economic Excellence and supporting SmartState Endowed Chairs are proposed by the research institutions. Once a Center is awarded, an institution has 18 months to acquire $1:$1 matching pledges from non-state sources equal to the state award ($2M-$5M). Pledges must be "realized" (in hand) within six-and-a-half years of the award date. The entire state award plus a portion of the $1:$1 match is placed into permanent endowment; the endowment provides funding for Center research equipment, lab construction, and research team salaries.

The Review Board has awarded 49 Centers and 87 SmartState Endowed Chair positions. Each Center specializes in knowledge-based research fields such as engineering, nanotechnology, biomedicine, cancer research, and energy science. The SmartState Endowed Chairs secure private sector and federal grants to increase the state's knowledge base and stimulate the economy.

In December 2010, S.C. Speaker of the House Bobby Harrell and fellow S.C. General Assembly members announce the CoEE Program's (now known as the SmartState Program) 2-to-1 return on investment. By July 2011, that figure had grown exponentially to a 6-to-1 ROI.

Former Queensland, Australia, Premier, the Honorable Dr. Peter D. Beattie (center), discusses his state's Smart State Initiative with the SmartState Review Board. Queensland is a sister state of South Carolina, and the Queensland program was an inspiration for the recent rebrand of the SC SmartState Program.



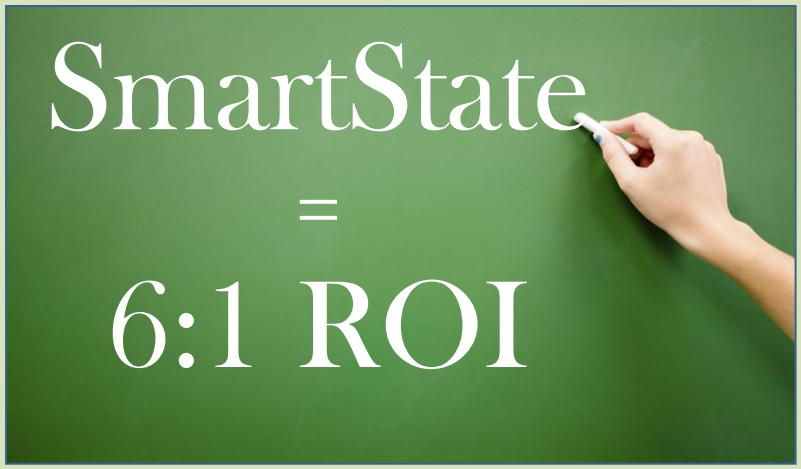
SmartState™
SC Centers of Economic Excellence

STATE INVESTMENT
$180 million

EXTERNAL INVESTMENT
$1.2 BILLION

QUESTION:

Is the SmartState Program fulfilling its mandate to build the knowledge-based economy in South Carolina?



ANSWER: YES!

For every $1 SC government has invested in academic research . . .

the private sector and non-state sources have invested $6!

Q: What are the sources of the $1.2 BILLION in external investment in SmartState?

ANSWER:

NON-STATE MATCHING FUNDS: $184.3 MILLION

By statute, state dollars must be matched on $1:$1 basis with investment from non-state sources such as corporations, non-profit organizations, private investors, and the federal government. Corporate and organizational investments **of greater than $500K** account for more than **$106M** of this total. The institutions have raised an additional $16.9M in "overmatch," investments above the required dollar-for-dollar match. Federal funds count for less than 15% of the $184.3M in raised non-state matching funds.

RESEARCH GRANTS: $483.4 MILLION

The SmartState Chairs and their research teams receive corporate and federal grants to conduct their innovative research. In FY2011 alone, $87.8M in SmartState research team grants entered the SC economy.

CORPORATE INFRASTRUCTURE INVESTMENT: $532 MILLION

Companies like American Titanium Works, Proterra and Trulite, have relocated manufacturing and research facilities in South Carolina to be near SmartState research teams. In addition, other state-based companies have expanded existing facilities in order to accommodate industry collaborations with the Centers of Economic Excellence.

Clemson broke ground in 2010 for the Center for Emerging Technologies at CU-ICAR. In 2011, Sage Automotive moved into the facility, which now serves as its global headquarters.

[READ ABOUT THE RELOCATION ON PAGE 7.]

Question:

Is the SmartState Program fulfilling its mandate to create high-paying jobs in South Carolina?

Answer: YES again!

The SmartState Program has created nearly 6,900 new jobs in South Carolina!

One of the principal mandates of the SmartState Program is the creation of high-paying jobs in South Carolina. To date, the SmartState Program has created **6,888 high-paying, knowledge-based economy jobs**. This figure includes 1,582 SmartState personnel, start-up company employees, and corporate relocation personnel. According to the USC Darla Moore School of Business, an additional 5,306 new jobs have likely resulted from the impact of $358 million in extramural research funding brought into the South Carolina economy by SmartState Endowed Chairs and their research teams.

SmartState Economic Impact: High-Paying Jobs

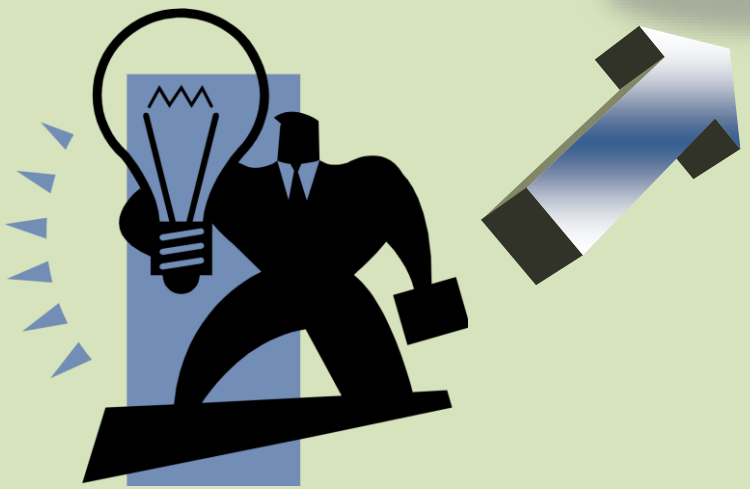
QUESTION: Are these 6,900 SmartState jobs really high-paying?

ANSWER: The average salary of a SmartState job is $59,000!*

That's nearly twice the average SC annual salary!

* Data reflects reported salaries of 510 SmartState jobs.

SmartState™
SC Centers of Economic Excellence



QUESTION:

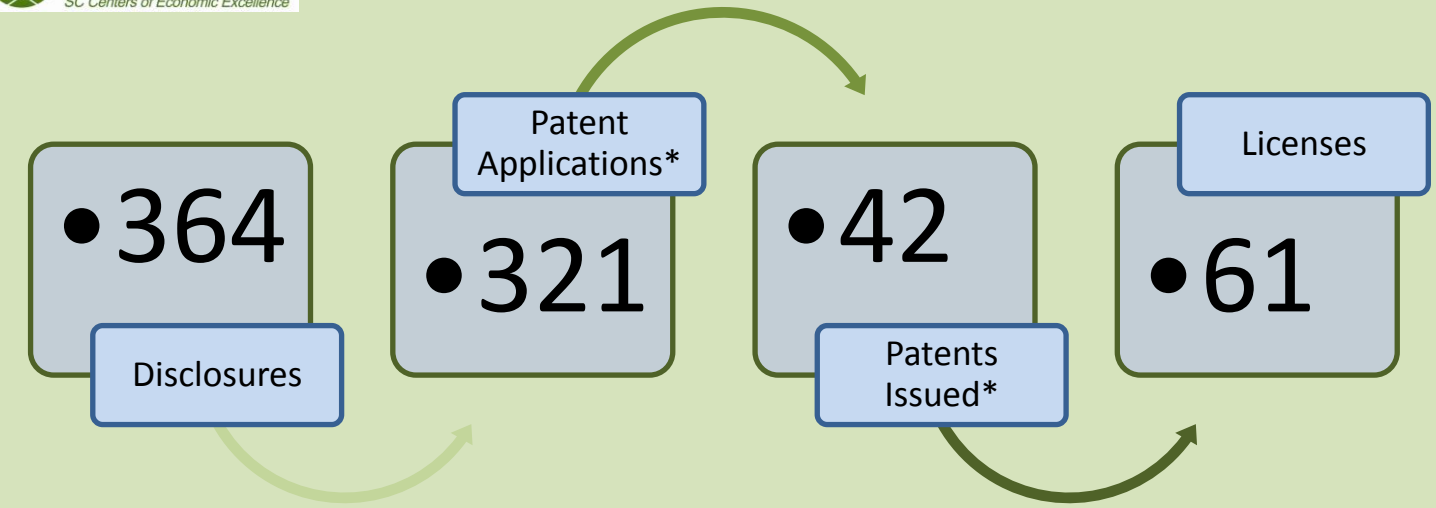
What is Technology Transfer?

ANSWER:

TECHNOLOGY TRANSFER is the process of converting scientific discoveries into marketable products. When a SmartState researcher makes a scientific **DISCOVERY** that has commercial possibilities, his or her institution files for a **PATENT**—a set of exclusive rights granted by the U.S. government to an inventor (or assignee) for a certain period of time. USC, MUSC, and Clemson have individual technology transfer offices to handle the patent process of scientific discoveries (also called "intellectual property").

A patent allows an invention owner to bring a product to market exclusively. Often with high-tech products, this "exclusivity" provides enough financial return to justify the investment required to place a product on the market. In addition to U.S. patents, institutions seek international patents that secure invention rights abroad.

SmartState Program Technology Transfer Statistics



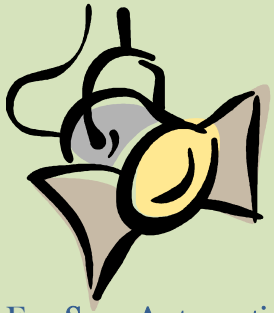
* Includes U.S. and International.

With a **LICENSE**, a university grants the right to practice the patentable invention to a commercial entity, which then invests the resources required to place a product on the market. There are typically two ways that technology transfer leads to economic development:

> Sometimes the entity which purchases a license starts a new company based on the newly developed product or service. This commercial enterprise is called a **STARTUP COMPANY**.
>
> Other times, an existing company will license the intellectual property and produce the new product or service, which leads to a robust relationship with the university and region.

Selling licenses for the use of intellectual property can be lucrative for universities. The licensure of inventions such as Gatorade and Taxol has netted Florida public institutions of higher education hundreds of millions of dollars in the past decade.

While the SmartState Program is relatively young in terms of intellectual property generation, USC, MUSC, and Clemson have received more than $800,000 in license income to date.



SmartState Company Spotlight

A Sage Move: Top Global Automotive Company Chooses CU-ICAR

Imagine an automotive company with the freedom to locate anywhere in the world. Where might it go? Detroit? Stuttgart? Aichi, Japan?

For **Sage Automotive Interiors**, a spinoff of Milliken & Company, the answer was Greenville, home of the Clemson University International Center for Automotive Research (CU-ICAR), a 250-acre automotive research campus.

Sage has more than 1,000 employees in the United States, Brazil, China, Korea, Japan and the United Kingdom, and is one of only three companies in the world that manufactures high-tech textiles for automotive interiors. Founded 50 years ago and originally part of Milliken, Sage was recently acquired by The Gore Group. Seen as a problem-solver by automakers, Sage relies on technology, materials science, and market and consumer insight to create advanced textiles that withstand the challenges of drivers and the elements.

Sage moved into the 60,000-square-foot Center for Emerging Technologies (CET) in early August 2011. Sage is the CET anchor tenant, occupying more than one floor of the three-story building. When Sage decided on CU-ICAR as its global headquarters two years ago, CET did not yet exist. Yet the combination of CU-ICAR's vision and success—which includes **four SmartState Endowed Chairs**—was irresistible. Sage COO Brian McSharry explains: "We are in the innovation business with a reputation for being on the cutting edge of design and engineering. Locating at CU-ICAR supports our need to lead through innovation on multiple levels."

One of the best examples of Sage expertise is its highly innovative YES Essentials® technology. Sage recognized the need for consumers to deal with some of the hazards of driving related to the interior—food, coffee, muddy shoes. Automobile seats with YES Essentials fabric offer consumers a way to combat these hazards.

Bob Geolas, CU-ICAR executive director, says gaining Sage's buy-in while the CET Building was on the drawing board helped drive the building to fruition. One of the early believers in the Sage-CET project was the City of Greenville, which worked with Clemson to secure a $3 million grant from the U.S. Department of Commerce. The grant remains the largest grant of its kind awarded in South Carolina.

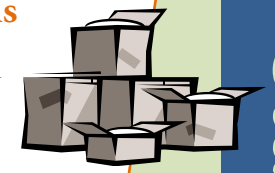
Geolas beams: "A major selling point is that CU-ICAR delivers real value as a high tech research park focused on one thing: relationships with the automotive industry. We focus on bringing together university strengths and industry strengths to create jobs and fuel innovation, and that makes CU-ICAR unique. As a result, tenants tap into faculty, research capabilities and students committed to the automotive industry. It's an attractive value proposition to established domestic and international companies as well as startup companies."

SmartState Startup Companies

Advanced Photonic Crystals
FirstString Research
Hydrogen Hybrid Mobility
ImmoMod, Inc.
Palmetto Fuel Cell Technologies, LLC
MicroVide
MitoChem Therapeutics, LLC
MitoHealth, Inc.
NextGenEn, Inc.
NXT
Parallel Permeation, Inc.
SchnellGen, Inc.
SemiAlloGen, Inc.
SimTunes, LLC
Specialty Custom Fibers
Tetramer Technologies
Vortex Biotechnology

SmartState Corporate Relocations

- American Titanium Works
- BMW ITRC
- CADFEM U.S.
- Cephos
- Cooliemon Technologies
- Fields Group, LLC
- Focus Chemicals
- Greenway Energy
- Intec U.S. Inc.
- JTEKT TC
- Proterra
- Sage Motors
- Senex Biotechnology
- ThermoPur Technologies
- Trulite



Sage Move [continued...]

In fact, CU-ICAR has become so attractive that the recently completed CET Building was 80 percent leased as of August 2011. The CET is expected to be fully leased by the end of the 2011 calendar year. McSharry says the building is not only a great home for Sage's 40-member executive team, but also helps attract new designers and engineers who are the lifeblood of its innovation-centered culture. "It's very impressive. People want to work here," McSharry says.

The synergistic environment of CU-ICAR benefits private sector companies like Sage and creates opportunities for Clemson faculty and students. McSharry says, "Not only do we have access to Clemson's automotive engineering department, we are now part of the greater university research community and work with top faculty researchers and students in materials science and textiles. For faculty, Sage offers the opportunity to commercialize their technology and fuel research.

"Sage salutes the State of South Carolina and Clemson University for their vision of bringing together the best of the public and private sectors through CU-ICAR and the SmartState Program," McSharry adds. "Investments such as this are the key to jobs and global competitiveness."

SmartState™
SC Centers of Economic Excellence

SOUTH CAROLINA GOVERNOR'S SCHOOL
for Science & Mathematics

South Carolina's Best and Brightest High School Students Study Alongside SmartState Endowed Chairs

"What did you do on your summer vacation?"

This age-old question took on an entirely new meaning for four students at the South Carolina Governor's School of Science and Mathematics (GSSM) in Hartsville.

Chanté Glass-Walley (Cordova), Sahil Patel (Anderson), Maggie Westbrook (West Union), and Joshua Boland (Orangeburg) were selected this past summer for summer internships with SmartState Endowed Chairs. The internships were made possible through a unique partnership between the SmartState Program and GSSM that identifies and nurtures South Carolina's next generation of researchers and innovation-minded entrepreneurs.

The SmartState-GSSM internship program launched an expansion of GSSM's capstone initiative and graduation requirement, the Summer Program for Research Interns. The Program was initiated by GSSM's BlueCross BlueShield Economics & Finance Institute, which seeks to infuse an understanding of entrepreneurship in the school's courses and culture. The internships allow students to experience how the SmartState Program embodies entrepreneurial research.

GSSM rising senior Sahil Patel (front) with Regenerative Medicine SmartState Endowed Chair Dr. Wen (right) and Ph.D. candidate Angela Alexander, who helped mentor Patel.

"I was jumping for joy," says Glass-Walley, upon learning she had been selected to intern with SmartState Endowed Chair and neuroscience expert Dr. Gary Aston-Jones of the Medical University of South Carolina (MUSC).

Over the course of the six-week internship, Glass-Walley worked side-by-side with Aston-Jones on studies related to the impact of drug addiction and stress hormones on thought processes. The experience opened the teenager's eyes to attending a South Carolina university and pursuing a career in neuroscience.

Regan Voit, Chair of the SmartState Review Board, smiles upon learning the teen's response to her internship.

"In the past, many of South Carolina's brightest students left for North Carolina's Research Triangle, Ivy League schools, and other institutions with established reputations. When we connect our high school students with SmartState Endowed Chairs who are working on cutting edge technologies in healthcare, energy, the environment and other arenas, they realize they can stay in South Carolina for a top education and careers in research and as entrepreneurs in their own companies."

Since its inception, the SmartState Program has created educational opportunities for graduate students. Expanding opportunities to K-12 students is a focus of the SmartState Program's Council of Chairs, which is the collective body of several dozen SmartState Endowed Chairs.

Dr. Thomas Kurfess is the BMW Endowed Chair in Manufacturing at Clemson and current Chair of the Council of Chairs. He points out the incredible value to South Carolina's future fortunes in engaging younger students in SmartState Program research and showing them that the essence of science and engineering is changing the world.

"Our outreach opens students' minds to possibilities and inspires them to learn," Kurfess says. "Manufacturing today is high tech. Companies want capable, knowledgeable people *from* South Carolina to work in their South Carolina operations. The earlier we can recruit students to our universities, get them involved in research and demonstrate the linkage to business, the better."

SmartState Endowed Chair Dr. Richard Swaja of MUSC is a former Chair of the Council of Chairs. He played an instrumental role in creating the internship program with GSSM: "In addition to the scientific experience, these internships focus on translation of research to application through technology transfer and commercialization. This program provides students with valuable perspectives on realizing the economic benefits of research."

The entrepreneurial component is critical to the SmartState-GSSM internships as it links research with business, giving students the entire picture of how the world of innovation and business drive economic prosperity and quality of life. Robert Fletcher, founding director of GSSM's BlueCross BlueShield Economics & Finance Institute and Center for Innovation & Entrepreneurship, says the collaboration allows students to "learn first-hand how innovative and entrepreneurial scientists who are focused on solving global problems generate wealth and better the world."

GSSM student Sahil Patel, interned with SmartState Endowed Chair Dr. Xuejun Wen, a world-class regenerative medicine researcher at Clemson. Not only did Patel work with Dr. Wen on nanofiber structures that can be used to support the growth of regenerated tissue, he also was exposed to the financial aspects of research.

"I find it interesting that people can rebuild body parts with medicine," recounts Patel. "I worked on a research business proposal, which helped me get familiar with the whole proposal process and getting funding for your research." Patel is now interested in pursuing an MD or PhD.

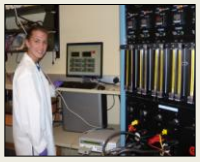
Wen enjoyed his time mentoring the high school student. "The initiative is a great way to inspire high school students to pursue a future career in high technology and entrepreneurship. We need more entrepreneurially minded scientists to support a strong economy."

And to create inspirational summer vacations, complements of the SmartState Program.

2011 SmartState-GSSM Interns

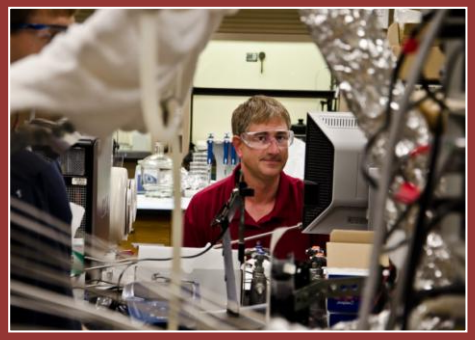
Chanté Glass-Walley
Cordova, SC
Mentored by:
Dr. Gary Aston-Jones
MUSC SmartState
Endowed Chair
in Neuroscience

Maggie Westbrook
West Union, SC
Mentored by:
Dr. Brian Benicewicz
USC SmartState Endowed Chair
in Polymer Nanocomposites



Joshua Boland
Orangeburg, SC
Mentored by:
Dr. Jochen Lauterbach
USC SmartState Endowed Chair
in Strategic Approaches
to the Generation of Electricity

Sahil Patel
Anderson, SC
Mentored by:
Dr. Xuejun Wen
Clemson SmartState Endowed
Chair in Regenerative Medicine

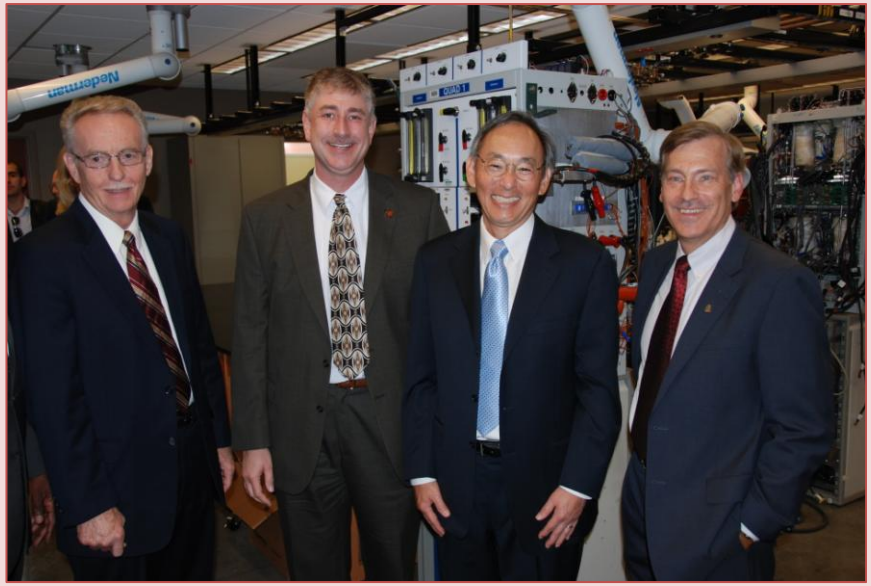


USC SmartState Endowed Chair
Dr. Jochen Lauterbach

Santee Cooper, Electric Coops Tap into the Intellectual Power of the SmartState Program for Cleaner, Safer Coal Technology

Renewable energy's benefits are undeniable. Solar power and wind power are sustainable, produce zero emissions, and heat homes, light lights, and power vehicles just as fossil fuels do. Because renewable energy can be generated anywhere, it tends to be less vulnerable to geopolitical strife.

As alluring as renewable energy is, the world is not yet ready to switch entirely from fossil fuels—the cost of renewable energy remains high and supply is intermittent. The capacity required to heat homes and buildings, power manufacturing, and illuminate cities and towns from renewable energy alone does not exist.



USC's Future Fuels™ SmartState Endowed Chairs, including SAGE Center's Dr. Lauterbach, with U.S. Energy Secretary Dr. Steven Chu.

These facts, say USC's Dr. Jochen Lauterbach, create opportunities for South Carolina to improve current methods of power generation.

Lauterbach holds the SmartState Endowed Chair in the Strategic Approaches to the Generation of Electricity (SAGE) Center, one of six energy-related SmartState Centers at USC encompassing fuel cell, nuclear energy and fossil fuel technologies. Lauterbach's research is partly focused on lessening the environmental impact of coal plants.

"Everyone wants a cool house and the ability to flip on lights," says Lauterbach. "We currently can't do it on a mass scale with solar. We need power plants that use coal, natural gas and nuclear power to generate the base load. For the short term, fossil fuels are here to stay. Coal is a cheap, reliable source of electricity, so we must find better ways to capture and store emissions."

According to the World Coal Association, coal generates 40% of the world's and 49% of U.S. electricity. South Carolina gets 36 %of its electricity from coal, but only 3% from renewable energy sources. Nuclear power (50%) and natural gas (10%) provide the rest of the state's energy needs.

"Two of South Carolina's largest utility companies, Santee Cooper and the Electric Cooperatives of South Carolina, have partnered with Lauterbach and the SAGE SmartState research team to vet new 'clean coal' technologies."

There is also a tremendous amount of coal in reserve—an estimated 847 billion tons worldwide. The biggest reserves are in the United States, Russia, China, and India.

While coal is cheap in terms of power generation, power companies realize there is a tremendous environmental cost to burn coal and significant room for improvement in making coal a clean energy source. Two of South Carolina's largest utility companies, Santee Cooper and the Electric Cooperatives of South Carolina, have partnered with Lauterbach and the SAGE research team to vet new "clean coal" technologies.

Lauterbach says SAGE has sparked a powerful public-private collaboration. "Retrofitting power plants to make them more efficient and 'green' is costly. So together we—USC researchers, Santee Cooper and the Electric Cooperative—are looking at how we can improve the technology in a cost effective manner. The partnership is very exciting because our partners are willing to become early adopters of new technologies that help South Carolina and advance the industry at large."

Late in Summer 2011, Santee Cooper hosted an all-day meeting with SAGE researchers and Santee Cooper engineers. The group addressed practical questions around new CO2 emissions storage technologies, removing mercury from emissions, and how to deal with peak demand.

Lauterbach, who relocated from the University of Delaware to USC because of the SmartState Program, is impressed with the willingness of industry partners to test new ideas generated by the SAGE research team: "Research on its own is not enough. Connections with private industry are critical to developing technology that generates the low-cost electricity that makes the state attractive to companies like Boeing and BMW, but also preserves the quality of life for all."

Lauterbach says the public-private partnership spawned by SAGE creates opportunities to manufacture new clean-coal technologies in South Carolina, attracting new companies and jobs. As an example, USC is talking to out-of-state chemical companies about capturing coal plant emissions. This would require these companies to have a Palmetto State location.

USC Department of Engineering Dean Dr. Tony Ambler believes South Carolina has a unique opportunity to change the entire energy industry, thanks to the SmartState Program.

"You look at the caliber of people we have attracted and the work we are now doing in fuel cells, nuclear and clean coal—it's awesome! The SmartState Program is a tremendous enabler. Industry is recognizing the power South Carolina has to take all of the pieces of the puzzle—government, research universities and business—and create results."

Clemson SmartState Endowed Chair Dr. Scott Mason

Supply Chain and Logistics Expert Positioning South Carolina to Optimize Economic Success

To Dr. Scott Mason, supply chain optimization and logistics are "fun stuff" and sophisticated job creators for the State of South Carolina. "Supply chain logistics is about getting the right products to the right place in the right quantity at the right time," Mason explains. "While this sounds easy, it can be very complex."

Which is why Clemson recruited Mason for the Fluor Endowed Chair in the Supply Chain Optimization and Logistics Center. Mason is an expert in large-scale supply chain system modeling, with emphasis in capital project supply chains. While at the University of Arkansas, Mason worked with global retail giant Wal-Mart on supply chain modeling projects. Mason's selection as a SmartState Endowed Chair is well-timed. South Carolina is emerging as a preferred distribution hub of the country's top retailers, an industry the state wants to develop.

Two recent success stories are the Target distribution center in Lugoff which employs an estimated 900 workers and is projected to generate about $12 million in taxes for Kershaw County over 20 years, and the new Amazon distribution center in Cayce that will eventually have 1,250 fulltime employees and up to 2,500 seasonal employees at Christmas.

Mason says his role as a SmartState Endowed Chair is to assist the state and private sector in economic development activities that will create jobs: "South Carolina is positioning itself for additional growth in the supply chain/logistics industry. We have excellent interstates, an established rail system, airports, and marvelous ports in Charleston and Georgetown. However, new global opportunities require that the state become more strategic and thus more attractive to companies that depend on our freight system," he says.

The gold ring South Carolina is reaching for is the potential for increased volume through the Port of Charleston, starting in 2014 when the expansion of the Panama Canal is completed. The project will double the capacity of the Panama Canal and provide direct access for larger cargo ships from China and South America to U.S. East Coast ports.

Supply Chain Optimization & Logistics Center

Award Date: 2005
Award Amount: $2M
Extramural Research Above Match: $6.1M

This Center researches supply chain modeling, material handling, logistics, planning systems and distribution. Fluor is a full match partner for this Center, which also has projects with Michelin and Milliken. More than 100 working professionals are enrolled in an online Capital Projects Supply Chain master's degree related to this Center. The program's innovative learning approach allows students from around the world to participate,, even when faced with relocations to new project sites or offices.

Mason says SC's transportation infrastructure must be as competitive as possible with other states for deep water ports. Alabama, Florida, Georgia, Louisiana, and Texas are all lining up to vie for this increased business.

Two years ago, supply chain and logistics industry leaders approached New Carolina, South Carolina's Council on Competitiveness, requesting assistance in making the state more competitive. According to Neil McLean, manager of New Carolina's Transportation, Distribution and Logistics Cluster, what South Carolina lacks and desperately needs is a comprehensive strategic plan that incorporates rail, sea, air, and road:

"Seven years ago, the Charleston Port was ranked fourth nationally in volume; today it's ranked twelfth. The state has tremendous ground to make up to take advantage of the new volume coming through the Panama Canal in 2014."

In May 2011, industry and academic leaders gathered at the S.C. Department of Commerce at the invitation of Commerce Secretary Hitt, S.C. DOT Secretary Onge and S.C. Ports Authority President Newsome. The group agreed that public-private collaboration is the key to making the state a premier destination for freight. They also agreed the best starting point is a plan that models the state's strengths, weaknesses and opportunities, then lays out a strategy for action.

Mason was tapped to lead the analysis of the state's freight transportation system. McLean says the decision to utilize university talent makes sense: "Dr. Mason is our state resident expert in supply chain modeling. Not only are we tapping into his mind, his students will become the future owners and employees of logistics-related companies."

Although increasing the state's capacity and capabilities for larger volumes of freight is critical, public safety is also an important consideration. One area of scrutiny is Interstate 26, which is overburdened. Adding more tractor-trailers without expanding I-26 is problematic. Thus, planners must determine how to optimize the overall system so more freight is handled safely, efficiently, and affordably in and out of South Carolina by multiple modes of transportation.

McLean says the study should be finished in Fall 2012 and will serve as a roadmap for state agencies and private industry in the quest to make South Carolina the premier global destination for freight.

Mason believes the progrm is a catalyst for economic change and a tremendous source of opportunities for the state's citizens: "The SmartState Program is like a game of dominoes. Thanks to public-private investment, universities have recruited experts in growth fields like supply chain optimization and logistics. We, in turn, are partnering with government and industry and engaging students with the common goal of making South Carolina more competitive and a better place for all to live and work. One thing leads to another, everyone wins."

MUSC SmartState Endowed Chair Dr. Louis Guillette

Gators Hold the Key to South Carolina's Reproductive Health

Back in the 1900s, coal miners commonly used canaries—those cute yellow songbirds—as an early warning system to alert them to the presence of deadly gases such as carbon monoxide and methane.

Today, Dr. Louis Guillette, a SmartState Endowed Chair in Marine Genomics at MUSC, has discovered a modern ecological harbinger of disaster: alligators. He is using the decidedly non-cute reptiles, which can grow to more than 13 feet in length and tip the scales at 1,000 pounds, to research the effects of environmental contaminants on human reproductive systems.

Guillette, an internationally acclaimed reproductive biologist who accepted a SmartState Endowed Chair in Obstetrics and Gynecology at MUSC in 2010, relocated to the Palmetto State from the University of Florida, where he has studied alligators for 25 years. The Marine Genomics Center of Economic Excellence is a partnership between MUSC, USC and the College of Charleston. (Two other SmartState Endowed Chairs in this Center, Dr. Gavin Naylor [MUSC] and Dr. Steven Kresovich [USC], have also been appointed.)

"A gator is a gator, whether from Florida or South Carolina," smiles Guillette. "Their reproductive systems are very similar to humans. They also live in the same complex world as humans. Both factors make them a good research model. There is growing evidence that shows that chemical contaminants in the environment cause birth defects in alligators and other species, including humans."

As a SmartState Endowed Chair, Guillette and his research team focus on developing new testing procedures that prevent or treat reproductive health issues caused by environmental factors.

Guillette is from Colorado, a state without a crocodilian population. The Colorado native started his reptilian research with a thesis on a rare species of mountain lizard. Upon his arrival in Florida, the Fish & Game Commission contacted the "lizard man" to see if he would study alligators in central Florida. Alligator farmers needed more information on how to raise gators for skins and meat.

"I thought the project would last six months," says Guillette. "We are still going strong. In fact, we recently captured a female gator we originally caught 30 years ago."

Guillette's early research in central Florida showed a correlation between contaminants such as agricultural run-off, chemicals, and toxins and the gators' reproductive health. Male gators had smaller genitalia; both sexes had deformed sex organs.

During this same time, other researchers around the world were reporting interesting observations. Some were seeing a decline in human sperm counts and argued the change was environmental. There was a reported increase in breast cancer in European and U.S. women, which some were attributing to an environmental component.

". . .Guillette became a recipient of a prestigious 2011 Heinz Award 'for his research on the impact of toxic chemicals on the reproductive systems of alligators and other wildlife.'"

Guillette eagerly approached his medical school colleagues at Florida with the idea of joint research and ran into a brick wall. He instead collaborated with medical researchers at Johns Hopkins, Harvard and Tufts Universities along with the Center for Disease Control.

The SmartState Program's spirit of collaboration was a major reason Guillette uprooted his life and lab and moved to South Carolina. His colleagues at the MUSC College of Medicine's Departments of Obstetrics, Gynecology and Pediatrics have embraced his ideas on the environmental influences on the human reproductive system, and Guillette has embraced his new colleagues at the College of Medicine and the Hollings Marine Laboratory.

"At MUSC, it's an exciting blend of PhDs and MDs. We maximize what each can do," he says. "That is the beauty of the SmartState Program—the ability to conduct collaborative research across departments and across the state's institutions.

Within one year of assuming his SmartState Endowed Chair, Guillette has secured more than $100,000 in grants to research environmental influences on ovarian development and deformities in infant male genitalia. [Also, just before the publication of this report, Guillette became a recipient of a prestigious 2011 Heinz Award "for his research on the impact of toxic chemicals on the reproductive systems of alligators and other wildlife."]

Guillette continues to study alligators as a sentinel species for humans. He and his team have become a fixture at the Tom Yawkey Wildlife Center Heritage Preserve, a 20,000-acre ecosystem of marsh and islands near the mouth of Winyah Bay. Here Guillette humanely traps alligators and collects blood, urine and tissue samples for his research.

"My main goal is not to be bitten by the alligator or my wife wouldn't let me go out again!" he laughs. "Alligators are predictable. They act the same way every time. What is not predictable is how environmental conditions change their genes and how this reflects on people."




The South Carolina Research Centers of Economic Excellence Act

CHAPTER 75. SOUTH CAROLINA RESEARCH CENTERS OF ECONOMIC EXCELLENCE

SECTION 2-75-5. Short title; legislative intent.

(A) This chapter is known and may be cited as the "South Carolina Research Centers of Economic Excellence Act".
(B) The General Assembly finds that:
(1) it is in the public interest to create incentives for the senior research universities of South Carolina consisting of Clemson University, the Medical University of South Carolina, and the University 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;
(2) THESE ENDOWED PROFESSORSHIPS SHOULD BE USED TO RECRUIT AND MAINTAIN LEADING SCIENTISTS AND ENGINEERS AT THE SENIOR RESEARCH UNIVERSITIES OF SOUTH CAROLINA FOR THE PURPOSES OF DEVELOPING AND LEVERAGING THE RESEARCH CAPABILITIES OF THE UNIVERSITIES FOR THE CREATION OF WELL-PAYING JOBS AND ENHANCED ECONOMIC OPPORTUNITIES IN KNOWLEDGE-BASED INDUSTRIES FOR ALL SOUTH CAROLINIANS;
(3) in communities across the United States in which better paying jobs and enhanced economic development in knowledge-based industries has flourished, the local or state government has created incentives and made a long-term commitment to public and private funding for a significant number of endowments for professorships in targeted knowledge-based industries;
(4) the South Carolina Education Lottery provides a source of funding and an incentive for the senior research universities to raise, in dollar-for-dollar matching amounts, sums from nonstate sources sufficient to create endowed professorships;
(5) these endowed professorships should be awarded to the senior research universities through a competitive application process, provided that the competitive process must encourage the senior research universities to submit cooperative applications with one another as well as in cooperation with other institutions of higher education; and
(6) these endowed professorships, funded equally from the South Carolina Education Lottery and from other nonstate sources, provide a foundation for the creation of centers of economic excellence.

In 2002, the South Carolina General Assembly passed the South Carolina Research Centers of Economic Excellence (RCEE) Act. At the heart of the authorizing statute for the SmartState Program is a charge to create well-paying jobs and enhanced economic opportunities for the people of South Carolina through the creation of unique endowed chair positions (SmartState Endowed Chairs) who will forge partnerships with industry through their respective Centers of Economic Excellence. **The result over the past decade has been the creation of nearly 7,000 jobs and $1.2 BILLION in investment in the South Carolina economy.** The above word cloud, built from the RCEE Act, helps one understand the components required for a state to build a knowledge-based economy through public-private partnerships.

SmartState
SC Centers of Economic Excellence

CLEMSON UNIVERSITY

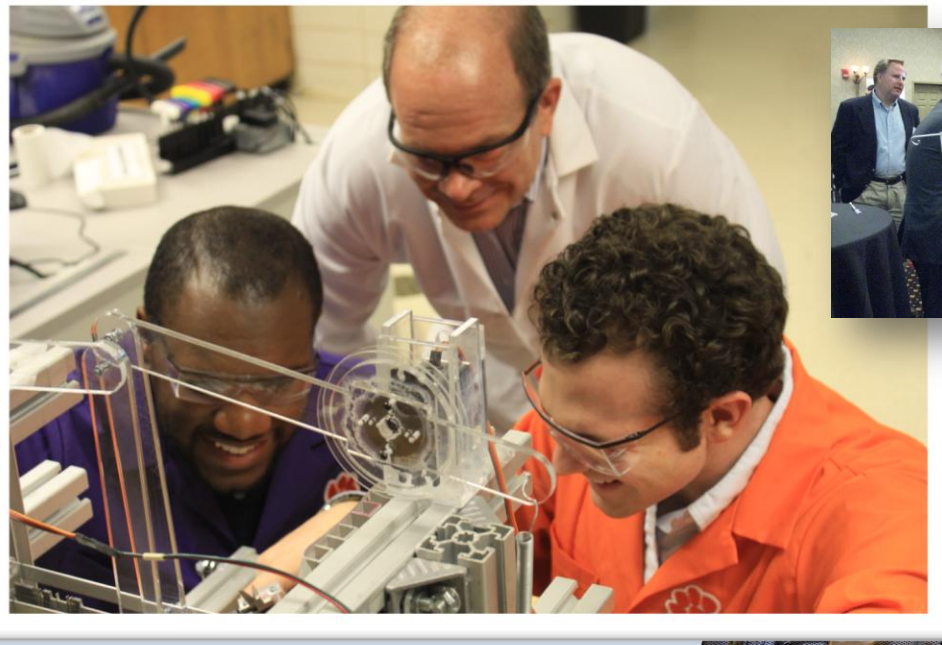
13 Centers
16 SmartState Chairs

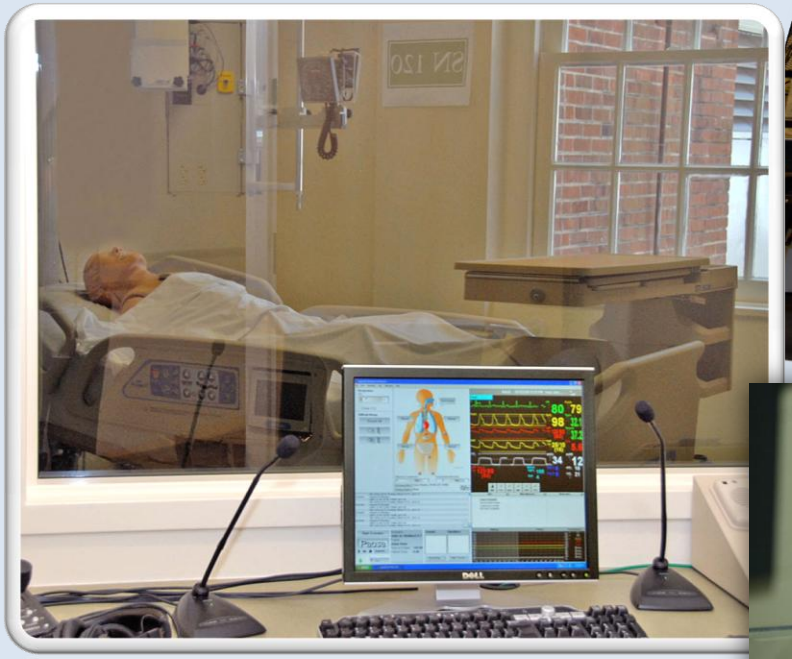
UNIVERSITY OF SOUTH CAROLINA

17 Centers
29 SmartState Chairs

MUSC
MEDICAL UNIVERSITY of SOUTH CAROLINA

19 Centers
42 SmartState Chairs

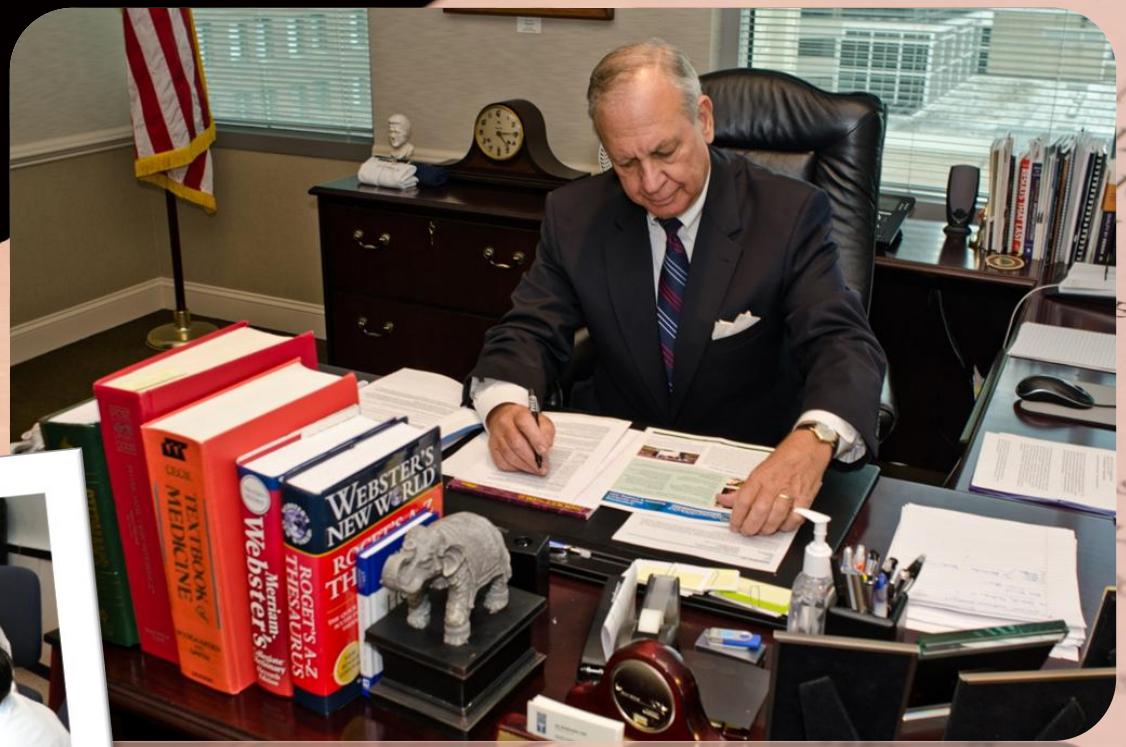




Center Summaries


Clemson

Center Summaries



SmartState
SC Centers of Economic Excellence

AUTOMOTIVE AND TRANSPORTATION TECHNOLOGY

[See CU-ICAR article on page 7.]

CLEMSON UNIVERSITY

CU-ICAR
TOMORROW'S ENGINEER TODAY

4 Centers
4 SmartState Chairs

CU-ICAR SmartState Endowed Chair Dr. Todd Hubing directs research for the Vehicle Electronic Systems Integration Center of Economic Excellence.

Automotive Manufacturing

Award Date: 2003 **Award Amount:** $5 million **Institution:** Clemson
BMW Endowed Chair in Manufacturing: Dr. Thomas Kurfess
Extramural Research Above Matching Requirement: $4.3 million

Dr. Kurfess leads a research team from the U.S. Army and American Titanium Works (ATW) working with BMW Research in Munich. ATW plans to establish a production facility in Laurens and will have its R&D center on the CU-ICAR campus. Current discussions relate to the establishment of a team to up-armor civilian vehicles using titanium armor. This will result in significant improvements in vehicle system performance. BMW has completed ballistic testing and is now in the blast-testing phase of titanium armor samples supplied by Picatinny.

In 2011, Dr. Kurfess was an invited panelist for the American Association of Retired Persons' (AARP) Session on the Future Technology in Orlando. He also provided a keynote address at the Federal Reserve Annual Economic Forum.

Automotive Systems Integration

Award Date: 2003 **Award Amount:** $5 million **Institution:** Clemson
BMW Endowed Chair in Automotive Systems Integration: Dr. Paul Venhovens
Extramural Research Above Matching Requirement: $1.4 million

In 2011, Dr. Venhovens and his team completed implementing the role of automotive systems integration at CU-ICAR. He also completed the Deep Orange pilot project, during which CU-ICAR graduate students created a vehicle from scratch over the course of two years. Deep Orange Project II revolves around a reconfigurable digital dashboard experience and will be shown for the first time in public during SEMA in November 2011. Deep Orange III, a vehicle prototype project, kicked off in Fall 2010 with Mazda North American Operations as the primary sponsor. The first 13 Deep Orange master's students graduated August 2010.

Automotive Design & Development

Award Date: 2003 **Award Amount:** $5 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $1.5 million
[Former Chair Dr. John Ziegert resigned in January 2011. Clemson will appoint Dr. Zoran Filipi as the new Timken Endowed Chair in Automotive Design & Development in January 2012.]

This Center advances the fields of vehicular design & development, methodologies, and design tools. Dr. Filipi and his team will design automotive instruments and machines used in high-precision measurement and manufacturing. They will also develop friction management and power transmission solutions that will improve manufacturing processes for industry sectors.

Faculty member Dr. Beshah Ayalew received the NSF CAREER award, the most prestigious award given to junior faculty. This is the second CU-ICAR CAREER award. This Center also researches chassis fabrication for Dale Earnhardt, Inc. as well as X-5 assembly issues for BMW.

Vehicle Electronic Systems Integration

Award Date: 2004 **Award Amount:** $3 million **Institution:** Clemson
Michelin Endowed Chair in Vehicle Electronic Systems Integration: Dr. Todd Hubing
Extramural Research Above Matching Requirement: $1.3 million

Dr. Hubing researches vehicle electronics, a complex field where components such as software, telematics, information systems, electronics, mechatronics, and sensors must be integrated in a well-balanced way to create attractive, stable products. In November 2010, Hubing hosted a meeting of the NSF I/UCRC for Electromagnetic Compatibility, which was attended by 50 representatives from major electronics companies including AVX, Electrolux and Michelin.

Clemson University International Center for Automotive Research

Dr. Tom Kurfess: BMW Endowed Chair in Manufacturing
Dr. Paul Venhovens: BMW Endowed Chair in Automotive Systems Integration
Dr. Todd Hubing: Michelin Endowed Chair in Vehicle Electronic Systems Integration
Dr. Zoran Filipi: Timken Endowed Chair in Automotive Design and Development

CU-ICAR
CLEMSON UNIVERSITY INTERNATIONAL CENTER FOR AUTOMOTIVE RESEARCH

The Clemson University Board of Trustees approved the creation of the Automotive Engineering Department at CU-ICAR in July 2010. The interdisciplinary nature of automotive engineering was the impetus for the creation of this department. The unit previously was managed through Clemson's mechanical engineering department. Imtiaz Haque was named as founding chair of the new department. CU-ICAR's Automotive Engineering program is the first of its kind in the United States. The program offers both master's and doctoral degrees in automotive engineering with a focus on systems integration and conducts automotive-focused, industry- and government-sponsored research. CU-ICAR's academic program currently has 107 graduate students and nine faculty members.

At the heart of CU-ICAR are four SmartState Endowed Chairs, which have received $18 million in state support and $18 million in corresponding non-state match support from major automotive industry corporations, including BMW, Michelin, Koyo, Timken, and Okuma. Because of the unique research talent at CU-ICAR, a number of major companies have relocated to, or placed research offices in, South Carolina's Upstate, including American Titanium Works, Proterra and Sage.

Indeed, CU-ICAR is a perfect example of the prosperity that results when a state invests in its knowledge base.

SmartState
SC Centers of Economic Excellence

FUTURE FUELS™

UNIVERSITY OF SOUTH CAROLINA

6 CENTERS
7 SMARTSTATE CHAIRS

SmartState Endowed Dr. Kenneth Reifsnider, is a distinguished member of the National Academy of Engineering.

Hydrogen Economy

Award Date: 2004 **Award Amount:** $5 million **Institution:** USC
Extramural Research Above Matching Requirement: $15.3 million
Chairs: USC is recruiting an INNOVATION SMARTSTATE CHAIR and a DISCOVERY SMARTSTATE CHAIR.

This Center conducts research to develop hydrogen storage materials and sensors for fuel cells. Fuel cells produce electricity from hydrogen and hydrogen-rich carbon fuels without thermal combustion and are more efficient for power generation than coal and natural gas. One startup company, Hydrogen Hybrid Mobility, has been created through associated work of this Center.

USC presently has the nation's only National Science Foundation Industry/University Cooperative Research Center (I/UCRC) for Fuel Cells, which was renewed in FY 2009 for five years. Professor Van Zee received substantial funding from the DOE for two projects on water management and the selection of low cost materials for fuel cells.

Renewable Fuel Cells

Award Date: 2005 **Award Amount:** $3 million **Institution:** USC
Extramural Research Above Matching Requirement: $17.5 million
[USC appointed Dr. John Regalbuto as the CHAIR IN RENEWABLE FUEL CELLS in November 2012.]

This Center is developing catalysts that allow alternative fuels to be produced from renewable sources. These new catalysts are the "next wellhead" as the transportation sector moves to less dependence on imported oil and carbon fuel. Work associated with this Center has led to the creation of a startup company, Palmetto Fuel Cell Technologies. This Center continues to serve as a resource for recruiting activities in the Midlands for companies associated with renewable fuels, hydrogen, fuel cells, and alternative energy sources.

Solid Oxide Fuel Cells

Award Date: 2006 **Award Amount:** $3 million **Institution:** USC
Extramural Research Above Matching Requirement: $31.2 million
SmartState Endowed Chair in Solid Oxide Fuel Cell Research: Dr. Kenneth Reifsnider

In addition to remarkable extramural research figures or industry collaboration, education and outreach are hallmarks of this Center. Center personnel have participated in and led numerous workshops, presentations, and in-service training for elementary and middle school teachers. The primary thrust has been the preparation of teachers to teach engineering principles, which will be a federal curriculum requirement in the near future.

In August 2011, the U.S. Department of Energy HeteroFoaM Center, directed by SmartState Endowed Chair Dr. Reifsnider, offered an energy education workshop to more than 125 local elementary and middle school teachers. William Ridgon, a doctoral candidate for the Center, was awarded a prestigious SC Space Grant Consortium graduate assistantship. Another graduate student with the Center won the Dr. Bernard S. Baker Student Award for exceptional work in the field of fuel cell-related technologies at the 2010 Fuel Cell Seminar & Exposition.

Strategic Approaches to the Generation of Electricity

Award Date: 2007 **Award Amount:** $5 million **Institution:** USC
Extramural Research Above Matching Requirement: $8.3 million
SmartState Endowed Chair in Strategic Approaches to the Generation of Electricity at USC: Dr. Jochen Lauterbach

SAGE Center faculty have developed a new pressure swing adsorption (PSA) process for capturing carbon dioxide in coal-fired power plant stack gas. This new process has the potential to be less expensive to construct, and more economical to operate than current state-of-the-art technology. For example, Center researchers recently developed a proprietary PSA process cycle which boasts over 90% CO2 recovery and over 95 vol% CO2 purity using commercial 13X zeolite pellets and is potentially the lowest energy CO2 capture process in existence. Two patent applications are being prepared. Future Center projects include a pilot scale PSA process that will be tested using stack gas from a Santee Cooper plant. [See article on Page 11.]

Nuclear Science and Energy

Award Date: 2008 **Award Amount:** $3 million **Institution:** USC
Extramural Research Above Matching Requirement: $1 million
Chair: USC is recruiting the SMARTSTATE ENDOWED CHAIR IN ADVANCED MATERIALS AND NUCLEAR POWER.

This Center, along with the Nuclear Science Strategies, received a gift of $100,000 in matching funds from Progress Energy in January 2011. In FY2011, the research of the Center was recognized by receiving third place nationally in the U.S. Department of Energy Innovations in Fuel Cycle Research Award Program. Additionally, two Master's students were selected for best papers in two different research tracks at the American Nuclear Society Student Conference in April 2011.

General Atomics for the Development of Transformational Nuclear Technologies

Award Date: 2009 **Award Amount:** $3 million **Institution:** USC
Extramural Research Above Matching Requirement: $3.4 million
Chair: USC is recruiting a SMARTSTATE ENDOWED CHAIR IN ENERGY & NUCLEAR SECURITY.

In FY2011, this Center received an investment of $200,000 by Studsvik and a $380,000 award by the U.S. Nuclear Regulatory Commission to advance research on technologies improving the efficiency and economics of process related to the backend of the nuclear fuel cycle. [In October 2011, San Diego-based General Atomics announced a $900,000 investment in this Center. General Atomics officials stated: "We find the state of South Carolina is a forward-looking state in regard to nuclear energy."


New nuclear plants are expected to result in $20 billion-plus in investment in SC over the next decade.

SmartState
SC Centers of Economic Excellence

NANOTECHNOLOGY

UNIVERSITY OF SOUTH CAROLINA

3 CENTERS
3 SMARTSTATE CHAIRS

SmartState Endowed Chair Dr. Richard Webb works wiring for his ultra-low temperature dilution refrigerator capable of cooling samples to 0.003 Kelvin (-459° F). Dr. Webb is a distinguished member of the National Academic of Science.

Experimental Nanoscale Physics

Award Date: 2003 **Award Amount:** $4 million **Institution:** USC
SmartState Endowed Chair in Experimental Nanoscale Physics: Dr. Richard Webb
Extramural Research Above Matching Requirement: $8.6 million

The research group developed by Center faculty member Dr. Thomas Crawford is working out a technology for assembling nanomaterials into macroscopic patterns with nanometer resolution. To date, the group has built a prototype optical spectrometer employing a nano-manufactured diffraction grating built from individual 10 NM ferrite nanoparticles into an array nearly a centimeter across. This success has attracted the attention of the Center for Integrated Nanotechnologies at Sandia National Laboratories; collaboration on highly efficient photovoltaic energy conversion has begun using this technology. The Center's collaborative five-year $5.4 million Army Research Office Multidisciplinary University Research Initiative grant was funded as a $464,000 nano-manufacturing proposal to the National Science foundation.

Polymer Nanocomposites

Award Date: 2004 **Award Amount:** $3.5 million **Institution:** USC
SmartState Endowed Chair in Materials Science and Engineering: Dr. Brian Benicewicz
Extramural Research Above Matching Requirement: $14.1 million

The South Carolina plastics industry accounts for nearly 5% of the Gross State Product of goods and services. As the plastics industry experiences commoditization of its basic materials (plastic polymers), this Center hopes to have a major impact on the state's manufacturing economy.

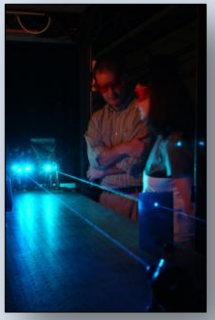
This Center is one of few national academic groups which has a complete system for making PET nanocomposites by in situ polymerization. SmartState Chair Dr. Brian Benicewicz's work in high-temperature fuel cell membranes has resulted in a research contract with BASF. Work from this Center has also led to the creation of a startup company, Parallel Permeation, Inc.

Nanoenvironmental Research & Risk Assessment

Award Date: 2008 **Award Amount:** $3 million **Institution:** USC
Extramural Research Above Matching Requirement: $2.4 million
Chair: USC is recruiting the SMARTSTATE ENDOWED CHAIR FOR NANOENVIRONMENTAL SCIENCE.

Research at this Center focuses on the scientific, technological, health, economic, legal and societal effects of nanotechnology on the environment. Nanomaterials are small enough to cross cell membranes and are potentially toxic to living organisms, including humans. The USC College of Engineering and Computing has been awarded a National Science Foundation grant to establish a nanotechnology education program for engineering undergraduates.

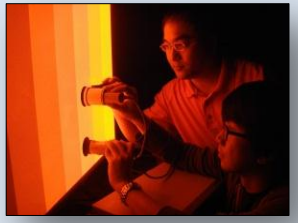
Much of the Center's work on the impact of nanoparticles on the environment has focused on their fate in estuaries, shallow water ecosystems with tidally dependent salinities. In coastal South Carolina, waterborne contaminants reach the ocean by passing through estuaries, groundwater and river deltas. When fresh, organic-rich waters mix with seawater in these environments, many contaminants precipitate out of solution and sink to the bottom.



ADVANCED MATERIALS

3 CENTERS
3 SMARTSTATE CHAIRS

CLEMSON UNIVERSITY



Center Summaries

Optical Materials

Award Date: 2004 **Award Amount:** $5 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $16.3 million
Chair: Clemson will recruit the J.E. SIRRINE TEXTILE FOUNDATION CHAIR IN OPTICAL FIBERS.

This Center is affiliated with Clemson's Center for Optical Materials Science and Engineering Technologies (COMSET) and has received major non-state funding from the J.E. Sirrine Textile Foundation. Center Principal Investigator Dr. John Ballato (pictured back cover) was awarded the Medal of Excellence for Alumni Achievement in Academia from the Rutgers University School of Engineering. Ballato's work on semiconductor optical fiber was highlighted in a feature article in *Nature Photonics*, a critical disciplinary journal. The Center launched two startup companies, Advanced Photonic Crystals and Tetramer Technologies. In April 2009, Gulf Fiber Optics relocated its research unit to Anderson in order to be near the research work of this Center. Research partnerships have been formed with defense contractors Raytheon and Northrop Grunman.

Advanced Fiber-Based Materials

Award Date: 2006 **Award Amount:** $4 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $7.1 million
Chair: Clemson will recruit the J.E. SIRRINE TEXTILE FOUNDATION ENDOWED CHAIR IN ADVANCED FIBER-BASED MATERIALS.

Research at this Center concentrates on the composition of novel fiber materials, fabrics and integrated components which possess unique functionality and value-added performance over traditional textile materials. This Center is developing a niche industry in high-tech fibers and materials including fiber-reinforced composite materials based on metals, ceramics and polymers. Research focused on capillary surface fibers applied in protein separation led to the creation of a startup company, Specialty Custom Fibers, located in Pendleton, South Carolina.

Optoelectronics

Award Date: 2008 **Award Amount:** $2 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $680K
[In August 2011, Clemson appointed Dr. Eric Johnson as the PALMETTONET ENDOWED CHAIR IN OPTOELECTRONICS.]

This Center focuses on improving devices, systems and protocols used in high-speed optical communication networks and is part of Clemson's Center for Optical Materials Science and Engineering Technologies (COMSET). This Center advances research in optoelectronics and optical communications theory and practice and seeks to meet the industry need for higher data rates and lower latency for switching and routing in optical networks.

SmartState
SC Centers of Economic Excellence

SUSTAINABLE ENVIRONMENT

CLEMSON UNIVERSITY

2 CENTERS
2 SMARTSTATE CHAIRS

A Clemson SmartState researcher conducts work for the Intelligent River Project.

Urban Ecology & Restoration

Award Date: 2005 **Award Amount:** $2 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $4.3 million

Chair: Clemson will recruit the SMARTSTATE ENDOWED CHAIR IN URBAN ECOLOGY AND RESTORATION.

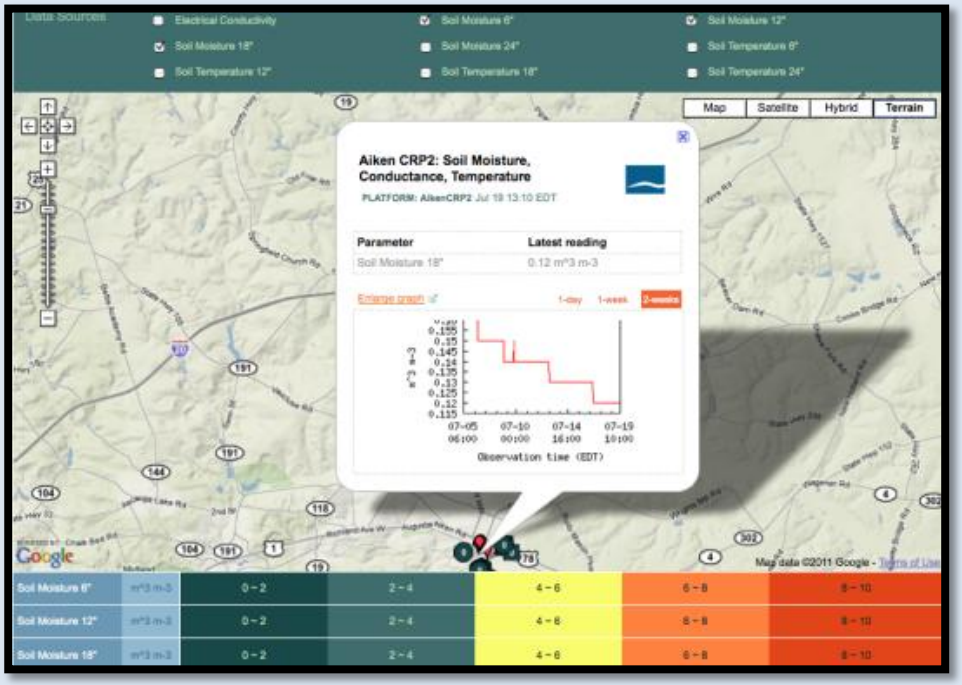
Project highlights include the completion of the construction phase of the Sand River Headwaters Green Infrastructure Project; a second successful program organized for the S.C. Water Resources Conference that attracted over 300 participants during a challenging economic time; the launch of two online watershed tools in partnership with Carolina Clear; the launch of a pilot program in Georgetown County for the online Community Resource Inventory mapping project; the addition of a new Intelligent River™ monitoring project in Wears Valley for the National Park Service; and a grant from the U.S. EPA for a Vertical Farm Feasibility Study in downtown Charleston.

Sustainable Development

Award Date: 2010 **Amount:** $4 million **Institution:** Clemson

Chair: Clemson will recruit the THOMAS F. HASH '69 ENDOWED CHAIR IN SUSTAINABLE DEVELOPMENT.

The Center mission includes the development of new technologies to support real-time monitoring and management of natural and built environments. The Intelligent River Project, recently created a wireless sensor, called a "Mote stack" that can monitor and transmit environmental information, and the corresponding software to make the data available online in real time. The wireless monitoring techniques are so useful that researchers are exploring other uses for them including Intelligent Farms, where farmers might use computers to learn which sections of fields need tending; and Intelligent Bricks, which would allow internal conditions of buildings to be monitored.



CyberInstitute

Award Date: 2008 **Award Amount:** $2 million **Institution:** Clemson

Extramural Research Above Matching Requirement: $1.6 million

Chair: Clemson will recruit the C. TYCHO HOWLE ENDOWED CHAIR IN COLLABORATIVE COMPUTING ENVIRONMENTS.

This Center concentrates on developing, testing and evaluating prototype cyberinfrastructure (CI) equipment and programs, leading to stronger collaborative environments for research, education and technology transfer throughout South Carolina. During 2009, this Center secured all non-state match funding. This match included a $1 million cash investment from a private donor. In addition, a $500,000 network infrastructure investment was allocated towards the Center.

Data Analysis, Simulation, Imaging, and Visualization

Extramural Research Above Matching Requirement: $1.9 million

Award Date: 2010 **Award Amount:** $2 million **Institution:** USC

Chair: USC will recruit a SMARTSTATE ENDOWED CHAIR IN DATA ANALYSIS, SIMULATION, IMAGING, AND VISUALIZATION

This Center's objective is to develop cutting-edge science and technology for transforming data into knowledge by extracting information and its faithful representation and visualization. It is developing an open-source software application to directly reproduce the optical soundtracks of motion picture films from digital scans, producing a synchronized sound film file.

Tourism & Economic Development

Award Date: 2005 **Award Amount:** $2 million

Institutions: USC/Coastal Carolina University

SmartState Endowed Chair in Tourism and Economic Development: Dr. Simon Hudson

Tourism is the number one industry in South Carolina, responsible for more than $17 billion in spending and employing more than 200,000 people—approximately 10 percent of the state workforce. This Center's mission is "to lead cutting-edge tourism and hospitality research that is relevant and directly applicable to the South Carolina tourism industry. In 2011, Dr. Hudson recruited a team of four researchers to join the Center. Dr. Hudson has spent considerable time traveling the state making industry connections and creating research partnerships. Dr. Hudson published four papers in refereed journals, made 14 scholarly presentations at academic and industry conferences, and submitted five grant proposals. He has established himself statewide as a tourism media expert.

Neuroscience

5 Centers / 15 SmartState Chairs

MUSC Neuroscience SmartState Endowed Chair Dr. Gary Aston-Jones with Governor's School for Science and Math intern Chanté Glass-Walley.

Brain Imaging

Award Date: 2003 **Award Amount:** $5 million **Institutions:** USC/MUSC

Extramural Research Above Matching Requirement: $12.3 million

USC Endowed Chair in Chair in Neuroimaging Research: Dr. Chris Rorden.

MUSC Endowed Chair in Brain Imaging: Dr. Joseph Helpern.

MUSC Chair II: MUSC is recruiting a second SmartState Endowed Chair in Brain Imaging.

This collaborative Center is creating a world-class brain imaging center, and has initiated its first brain study using TMS (Transcranial Magnetic Stimulation) combined with Functional MRI, a technique installed on the new Siemens 3T MRI scanner at the Center's Advanced Imaging Research facility at MUSC. (TMS provides a short but strong, magnetic field to the brain—useful for studying how the brain works (and as a treatment for depression). Functional MRI is a complementary tool for investigating how the brain works.) Using the combined TMS/Functional MRI technique will help with the investigation of treating brain damage, especially stroke-related damage.

Neuroscience

Award Date: 2003 **Award Amount:** $3 million **Institution:** MUSC

Extramural Research Above Matching Requirement: $12.7 million

William H. Murray Endowed Chair in Neuropathology: Dr. Gary Aston-Jones

Chairs: MUSC is recruiting the SmartState Endowed Chair in Movement Disorders and the Josephine Tucker Morse Endowed Chair in Parkinson's Disease Research.

This Center researches age-related neurodegenerative problems including dementia, Alzheimer's, Parkinson's and stroke. This Center is developing a project with Jazz Pharmaceuticals and has partnered with Cephalon, Inc. and Eli Lilly to test brain reward function. SemiAlloGen, Inc. is a center-related startup company developing vaccines and therapeutic treatments for Alzheimer's disease and cancer. The Center has begun discussions with Pfizer and GlaxoSmithKline to test antagonists as treatment of addiction.

In 2010, Dr. Aston-Jones was a Plenary Speaker at the Brain Plasticity Symposium in Australia, More than 100 international scientists attended this conference. He also was a Distinguished Lecturer at the National Institute of Environmental Health Sciences in Raleigh. Dr. Aston-Jones is a member of the Program Advisory Committee for the Alcohol Center for Translational Genetics (Emeryville, CA).

Vision Science

Award Date: 2005 **Award Amount:** $4.5 million **Institutions:** MUSC/USC

Extramural Research Above Matching Requirement: $10.1 million

MUSC Chairs: MUSC is recruiting an Endowed Chair in Gene and Pharmaceutical Treatment of Retinal Degenerative Disease and a SmartState Endowed Chair in Bioengineering and Material Science Techniques.

USC Chair: USC is recruiting an Endowed Chair in Gene and Pharmaceutical Treatment of Retinal Degenerative Disease.

Center collaborators Drs. Crouch and Mas Kono are developing novel vitamin A analogs to treat retinal degeneration. Dr Crosson is working with Dr Chris Murphy at the UC-Davis to develop new bioengineered material to treat corneal disorders.

Childhood Neurotherapeutics

Award Date: 2006 **Award Amount:** $5 million **Institutions:** USC/MUSC
Extramural Research Above Matching Requirement: $10.9 million
USC Chairs: USC is recruiting Chairs in CHILD & ADOLESCENT NEUROCHEMISTRY and TRANSLATIONAL THERAPEUTICS.
MUSC Chair: MUSC is actively recruiting the ENDOWED CHAIR IN NEURODEVELOPMENTAL DYSFUNCTION.

Research at this Center focuses on the prevention of brain damage in premature infants and curing infant brain diseases through cellular engineering. Studies have resulted in a startup company, ImmunoMod, which develops drugs for treatment of diabetes. MUSC successfully recruited Dr. Rita Ryan, an eminent pulmonary scientist, as Chair of the Department of Pediatrics, which will further accelerate the growth of this Center.

Dr. Marc Chimowitz (l) recently published a landmark stroke study in the New England Journal of Medicine. His colleague, Dr. Robert Adams (r), has treated more than 1,000 SC stroke victims (many patients from rural SC hospitals) using unique telemedicine methods.

Stroke

Date: **2007** Award Amount: **$5 million**
Institutions: MUSC/USC
Extramural Research Above Matching Requirement: $11.4 million
Endowed Chair in Stroke: Dr. Robert Adams (MUSC)
Countess Alicia Paolozzi Chair in Translational Neurology: Dr. Marc Chimowitz (MUSC)
Endowed Chair in Clinical Neurology: Dr. Souvik Sen (USC)

The reduction in incidence of stroke and the provision of acute stroke care are goals of this Center. This collaborative effort enhances the research programs of MUSC, USC, Greenville Health Systems and the Greenwood Genetics Center and strengthens clinical and basic stroke research in South Carolina. With three SmartState Endowed Chair positions, this Center has increased translational stroke research and stimulates the development of new therapeutics, drug discovery and biotechnology.

In May 2008, Dr. Adams of MUSC implemented the REACH Network, which has provided around-the-clock, Internet-based stroke consultation for more than 1,000 patients. In 2011, Dr. Sen of USC obtained the Midlands only Joint Commission certification. Joint Commission certification is the gold standard in stroke care providers. In 2011, Dr. Chimowitz published a landmark study in the *New England Journal of Medicine*, which is revolutionizing the way care is provide for post-stroke victims.

Health Care

5 Centers
11 SmartState Chairs

The Clinical Effectiveness & Patient Safety Center uses advanced mannequin simulators to train health care providers and medical students.

Clinical Effectiveness and Patient Safety

Award Date: 2006 **Award Amount:** $5 million **Institutions:** MUSC/USC

Extramural Research Above Matching Requirement: $5.7 million

Lewis Blackman Endowed Chair for Patient Simulation and Research for Health Sciences South Carolina: Dr. John Schaefer (MUSC)

SmartState Endowed Chair in Biomedical Informatics: Dr. Jihad S. Obeid (MUSC)

College of Nursing SmartState Endowed Chair for Health Informatics Quality and Safety Evaluation: Dr. Rita Snyder (USC)

This Center improves clinical education and patient safety through the use of simulation technology. In the past four years, eight collaborative partnerships have been established. The Center has provided over 60,000 student encounters involving over 200 faculty throughout the state. Additionally, this Center has developed 61 active courses, 162 scenarios, 5,000 simulated sessions and over 40,000 training simulations.

A commercial spinoff company, SimTunes was co-founded by Dr. Schaefer to create and commercialize innovative simulation educational technology. The Laerdal Corporation opened SimStore© in 2011, now with over 600 individual scenarios and 84 scenario sets available for annual licensing.

The work of MUSC SmartState Endowed Chair Dr. Obeid, a collaboration with SmartState Endowed Chair Dr. Ian Sanderson of the Health Care Quality Center, involves the creation of a complex informatics framework that will enable clinical researchers to use existing medical data for discovery research.

Health Facilities Design & Testing

Award Date: 2007 **Award Amount:** $5 million **Institutions:** Clemson/MUSC

Clemson: Clemson will recruit the Endowed Chair in Architecture & Health Research.

MUSC: MUSC is recruiting the Endowed Chair in Human Factors Medical Research.

Extramural Research Above Matching Requirement: $912,000

This Center expands and disseminates knowledge on how health facility design impacts health and healthcare delivery, and creates architectural settings that better support the well-being of patients and staff.

The finalized Patient Room 2020 concept depicts a realistic in-patient hospital that provides an optimally safe and sanitary environment for healing via a modular design that integrates advanced technology throughout the building. The prototype presents a 32-foot structural bay constructed from Corian that offers ample space for patient care, a family respite area, staff work area, and necessary bathroom space. Technology "touch points" are woven into the overall design, which include Radio Frequency Identification mirrors for content delivery and communication with medical staff, bedside workstations, vital sign monitoring, wireless power transmissions, and robotic medication delivery.

MUSC SmartState Endowed Chair Iain Sanderson (standing left) conferring with colleagues at Health Sciences South Carolina, as well as with Clinical Effectiveness & Patient Safety Center SmartState Endowed Chair Dr. Jihad Obeid (far left).
To read more about this project, visit: www.healthsciencessc.org

Health Care Quality

Award Date: 2007 **Award Amount:** $5 million
Institutions: USC/MUSC/Clemson
Extramural Research Above Matching Requirement: $19.7M
Chair in Medical Bioinformatics: Iain Sanderson (MUSC)
James Buchanan Duke SmartState Endowed Chair for Healthcare Quality: Jay Moskowitz (USC)

This Center conducts research on the state's major health problems, with the goal of improving health and the state's economy. The Center has partnered with the S.C. Hospital Association for multiple benefits, including supporting statewide initiatives and translating new products and processes. In 2009, the S.C. Healthcare Quality Trust was launched as a partnership between this Center, HSSC (see website URL at left), the S.C. Hospital Association, and Premier, Inc., with the goal of reducing healthcare-associated infections. According to Premier, Inc., infection reduction could save state hospitals up to $40 million per year. The Center, in coordination with MUSC's Office of Biomedical Informatics Services (OBIS), has written and customized many applications for use today by researchers across the state.

SeniorSMART™

Date: 2007 **Amount:** $5 million **Institutions:** USC/Clemson **Extramural Research:** $7.2 million
SmartState Endowed Chair in Community and Social Support—SmartHOME® at USC: Dr. Sue Levkoff (USC)
USC Chair II: CHAIR FOR MEMORY AND BRAIN FUNCTION / **Clemson Chair:** DRIVING, MOBILITY & PHYSICAL FUNCTIONING.

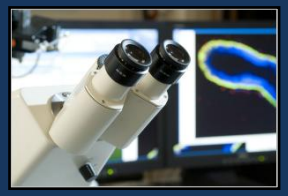
This Center focuses on research to foster independence for seniors via: SMARTBrain™ (maintaining intellectual activity); SMARTWheels™ (promoting independent mobility outside the home); and SMARTHome™ (maintaining independent mobility inside the home). The Duke Endowment-funded Palmetto Health-USC Mobility and Research Clinic is now evaluating and treating patients and has initiated collection of research data. Stroke victim Dr. Kenneth White: "Before I went through the program, I was using the wheelchair to get around. The program helped produce mobility I didn't have."

Medication Safety and Efficacy

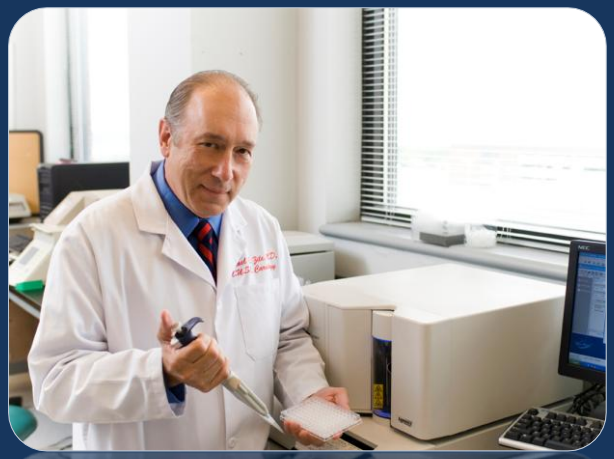
Date: 2008 **Amount:** $2 million **Institutions:** MUSC/USC **Extramural Research Above Matching Requirement:** $1.9 million
SmartState Endowed Chair in Medication Safety & Efficacy: Dr. Charles Bennett

This Center focuses on increasing drug safety and effectiveness, as well as decreasing medication errors by identifying the incidence and significance of adverse drug events. This data will be provided to hospitals, pharmaceutical and insurance companies, and governmental agencies for use in epidemiological and economic studies and will help lead to fewer drug injuries and improved drug effectiveness. In 2011, the Center was featured on an NPR story about drug reactions in children.

BIOTECHNOLOGY



10 CENTERS
21 SMARTSTATE CHAIRS



MUSC Molecular Proteomics project director Dr. Zile is examining the applicability of plasma biomarker assays of 100 proteins and peptides and 50 microRNAs using the multiplex technology shown here to be used for diagnosis and prognosis in patients with diastolic heart failure.

Marine Genomics

Award Date: 2003 **Award Amount:** $4 million **Institutions:** MUSC/USC/Coll. of Charleston
SmartState Endowed Chair in Marine Genomics: Dr. Louis J. Guillette (MUSC)
SmartState Endowed Chair in Bioinformatics: Dr. Gavin Naylor (MUSC)
SmartState Endowed Chair in Marine Genomics: Dr. Stephen Kresovich (USC)
Extramural Research Above Matching Requirement: $8.7 million

This Center uses functional genomics and bioinformatics to monitor and predict the impact of environmental changes on marine biosystems. Collaborators include the Hollings Marine Laboratory, the NOAA, the SC DNR, College of Charleston and NIST. To date, the Center has partnered with two private companies to test the antiviral effect of algae incorporated in shrimp diets. Chair Dr. Kresovich is an expert in high-throughput whole genome sequencing and genotyping techniques for the study of human disease susceptibility, and for mapping variability in genomes and populations. Dr. Kresovich received notification of a $1.2 million joint DOE-USDA grant focusing on the genomics of photosynthesis and carbon allocation. [Read article detailing the work of SmartState Endowed Chair Dr. Louis Guillette on Page 15.]

Proteomics

Award Date: 2003 **Award Amount:** $4 million **Institution:** MUSC
Extramural Research Above Matching Requirement: $19.5 million
[In July 2011, MUSC appointed Dr. Richard Drake as the SMARTSTATE PROTEOMICS ENDOWED CHAIR. MUSC is actively recruiting a second SMARTSTATE ENDOWED CHAIR for this Center.]

This Center develops and uses high-end analytical technologies to understand the biologic profile of protein expression in health and disease. The field of proteomics leads to an understanding of cellular function at the molecular level and how this function adapts to disease. Grants for this Center includes NIH funding for one of only ten U.S. National Heart, Lung and Blood Institute Proteomics Centers. Dr. Richard Drake was recruited from Eastern Virginia Medical School in July 2011 as the SmartState Chair.

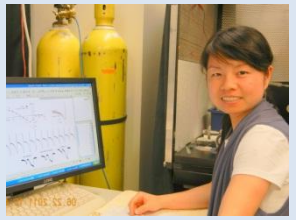
Molecular Proteomics in Cardiovascular Disease and Prevention

Extramural Research Above Matching Requirement: $1.9 million
Award Date: 2006 **Award Amount:** $5 million **Institution:** MUSC
Chairs: MUSC is actively recruiting the TOURVILLE SMARTSTATE ENDOWED CHAIR IN CARDIOVASCULAR IMAGING FOR DIAGNOSIS AND PREVENTION and the VOLPE SMARTSTATE ENDOWED CHAIR IN CARDIOVASCULAR BIOMARKER DEVELOPMENT FOR DIAGNOSIS AND PREVENTION.

This Center advances cardiovascular prevention and treatment by translating knowledge gained from "bench" science into clinical "bedside" care. The Center has identified a new class of biomarkers, micro-RNAs, that will likely have diagnostic, prognostic and therapeutic importance for cardiac disease. The Center continues a statewide network of five primary, separate care locations to participate and be linked by a central bioinformatics core. This core allows patients who suffer or are at risk for CV disease across the state to be screened.

Regenerative Medicine

Award Date: 2004 **Award Amount:** $5 million **Institutions:** MUSC/USC/Clemson
Extramural Research Above Matching Requirement: $48.7 million
SmartState Endowed Chair in Regenerative Medicine: Dr. Richard Swaja (MUSC)
BlueCross BlueShield of SC Foundation Chair in CV Health: Dr. Martin Morad (USC)
Hansjörg Wyss Endowed Chair in Regenerative Medicine: Dr. Xuejun Wen (Clemson)



This Center researches the regeneration of tissue and organs for the purpose of repairing, replacing and maintaining organ function. This Center combines statewide expertise in developmental biology, adult stem cell technology and tissue engineering. The Center has coordinated significant advances in multiple areas of bioengineering, wound healing, vascular biology, orthopedic materials science and cardiac development as part of a broad effort to construct a biofabricated blood vessel network. This Center plays a major role in the $20M statewide NSF grant awarded in July 2009 for tissue/organ biofabrication. Two research contracts have been developed with Synthes USA. A startup company, FirstString, has been created, which features new wound repair technology and which has generated more than $1.2M in revenue.

Rehabilitation and Reconstruction Sciences

Extramural Research Above Matching Requirement: $15 million
Award Date: 2007 **Award Amount:** $5 million **Institution:** USC
Chair: USC will recruit a SMARTSTATE ENDOWED CHAIR IN RECONSTRUCTIVE METHODOLOGIES AND MATERIALS.

The Center is focused on medical and public health needs in the area of orthopedic disorders, exercise and sports-related injury prevention, treatment and rehabilitation. Collaboration among the four intellectual cores, Cellular Engineering; Rehabilitation and Performance Sciences; Epidemiology and Clinical Translation; and Education, translate basic science to bed-side care. The Center investigates the biologics of tissue-engineered materials and implantable devices to find solutions to musculoskeletal maladies. The Biologics & Spine division of global medical company Smith & Nephew invested a $5M match.

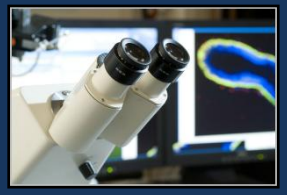
Renal Disease Biomarkers

Award Date: 2008 **Award Amount:** $5 million **Institution:** MUSC
Extramural Research Above Matching Requirement: $4 million
Chairs: MUSC is recruiting a CHAIR IN RENAL BIOMARKERS and a CHAIR IN TRANSLATIONAL NEPHROLOGY RESEARCH.

This Center addresses the need for reliable and prognostic biomarkers and biological indicators for acute kidney injury and chronic renal (kidney) failure. Accurate and sensitive biomarkers are essential for early disease detection and treatment. This area of research is especially relevant in South Carolina: diabetes is the leading cause of kidney failure, and South Carolina has a two percent higher rate of diabetes than the U.S. average.

Center faculty are partnered with the Southern Acute Kidney Injury Network (SAKInet), which includes researchers from Duke University, George Washington University, University of Tennessee system, and the MD Anderson Cancer Center (TX) to facilitate biomarker discovery. Investigators have published a manuscript which identifies a set of proteins in urine that can distinguish between two common acute kidney diseases, which are difficult to diagnose clinically; this discovery may lead to developing a crucial clinical test. This Center has acquire specialized equipment to accelerate biomarker identification.

BIOTECHNOLOGY CONT'D.



Advanced Tissue Biofabrication

Award Date: 2008 **Award Amount:** $5 million **Institutions:** MUSC/USC/Clemson
MUSC Chair: MUSC is recruiting an ENDOWED CHAIR IN BIOFABRICATION BIOLOGY.
USC Chair: USC is recruiting an ENDOWED CHAIR IN BIOFABRICATION ENGINEERING.
Clemson: Clemson will recruit an ENDOWED CHAIR IN BIOFABRICATION ENGINEERING.

The vision for this Center involves industrial production of complex tissues and organs for the repair, replacement or restoration of diseased cells, tissues and organs. Researchers focus on "bioprinting," assembling human tissues and organs by layering living cells and a hydrogel. This Center plays a major role in the 2009 statewide $20M NSF grant; the project's mission is to build tissue and organs from the inside-out, a unique approach. In 2011, Center director and Regenerative Medicine SmartState Chair Dr. Richard Swaja and AT&T SC President Pamela Lackey (then SmartState Review Board Chair) interviewed by local NBC news about the SmartState Program and the benefits of regenerative biofabrication.

Tissue Systems Characterization

Award Date: 2009 **Award Amount:** $3 million **Institution:** Clemson
Extramural Research Above Matching Requirement: $796,000
Chair: Clemson will recruit the SMARTSTATE ENDOWED CHAIR IN TISSUE SYSTEMS CHARACTERIZATION.

Part of a larger Clemson initiative, the Institute for Biological Interfaces of Engineering (IBIOE), this Center expands on Clemson's expertise in tissue engineering and biomaterials to provide alternatives to animal testing. This Center also allows Clemson researchers to further explore new tissue-based technologies that could serve as diagnostic or therapeutic products. The Endowed Chair will lead the cell biology component of IBIOE, creating a strategic research program for the analysis of cell mechanisms and behaviors, resulting in 3D tissue systems.

Technology Center to Advance Healthful Lifestyles

Approval Date: June 2009 **Award Amount:** $3 million Institutions: USC/MUSC
Extramural Research Above Matching Requirement: $12.8 million
Endowed Chair in Technology Applications to Prevent and Manage Disease and Reduce Risk at MUSC: Frank Treiber
USC Chair: USC is recruiting a SMARTSTATE ENDOWED CHAIR IN TECHNOLOGY APPLICATION FOR HEALTH BEHAVIORS CHANGE.

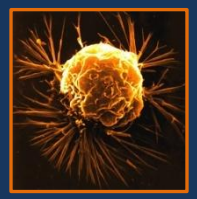
This Center focuses on health problems caused by physical inactivity, poor diets, and other poor health behaviors to develop and test lifestyle interventions for improving health, preventing illness, and managing chronic health problems. Successful components will be translated into cost-effective programs and new products that will be marketed in clinical care, public health, worksites, and other community settings. Chair Dr. Frank Treiber has developed software that uses a video camera as a photoplethysmograph through a smartphone platform to monitor heart rate and provide biofeedback as part of a breathing meditation stress reduction program that manages hypertension.

Inflammation & Fibrosis Research

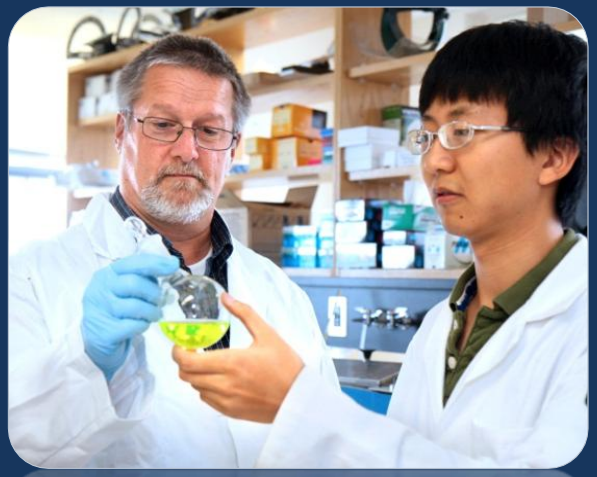
Award Date: 2010 **Award Amount:** $5 million **Institution:** MUSC **Extramural Research:** $5 million
Chairs: MUSC was awarded a SMARTSTATE ENDOWED CHAIR IN INFLAMMATION RESEARCH and a KITTY TRASK HOLT SMARTSTATE ENDOWED CHAIR FOR SCLERODERMA RESEARCH.

The Center and its two Chairs will address the need for novel anti-inflammatory and anti-fibrotic drug therapies by supporting a program that aligns clinical and basic science investigators with the common goal of developing effective treatment for inflammatory and fibrosing diseases. Inflammation and fibrosis are fundamental aspects of disease exemplified by two connective tissue diseases (CTD), lupus and scleroderma, each having pathobiologic pathways relevant to other diseases. The Center recently recruited a junior faculty member from Wake Forest University with an expertise in genetic analysis.

CANCER



7 CENTERS
17 SMARTSTATE CHAIRS



Dr. Patrick Woster, SmartState Endowed Chair in the Cancer Drug Discovery Center of Economic Excellence and graduate student Youxuan Li examine the product of a recently completed chemical reaction.

Translational Cancer Therapeutics

Award Date: 2004 **Amount:** $5 million **Institutions:** MUSC/USC
Extramural Research Above Matching Requirement: $12.2 million
John C. West Chair in Cancer Research: Dr. Kenneth Tew (MUSC)
Endowed Chair in Translational Cancer Therapeutics: Dr. Igor Roninson (USC)

Center Chair Dr. Tew has an international reputation as a cancer drug researcher and developer. His research was pivotal in the design of treatment for hormone refractory prostate cancer. Tew's research has also proven instrumental in the late-stage clinical testing of two promising drugs for ovarian and lung cancer and another that serves as a modifier of bone marrow-mediated immune function. Dr. Tew was named Chairman Elect, Drug Discovery Development & Regulatory Affairs, American Society for Pharmacology and Experimental Therapeutics. This Center appointed SmartState Endowed Chair Dr. Roninson in April 2011. His company, Senex Biotechnology, relocated to Columbia as the result of his appointment.

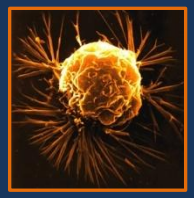
Cancer Drug Discovery

Award Date: 2005 **Amount:** $5 million **Institutions:** MUSC/USC
Extramural Research Above Matching Requirement: $18 million
Charles & Carol Cooper Chair in Pharmacy: Dr. Charles Smith (MUSC)
GlaxoSmithKline Distinguished Endowed Chair: Dr. John Lemasters (MUSC)
Endowed Chair in Medicinal Chemistry: Dr. Patrick Woster (MUSC)
Additional Chairs: MUSC is recruiting a CHAIR IN STRUCTURAL BIOLOGY.

This Center provides mechanisms for target identification and generation of lead compounds in the drug discovery process, creating a productive interface between academics and biotechnology/pharmaceutical industries. This Center also utilizes research approaches in structural biology for designing drug candidates and compound screening strategies.

Using a drug screening core with chemical libraries of 50,000 compounds, Chair Dr. Charles Smith and another colleague identified compounds which inhibit PIM kinase enzymes which are over-expressed in cancer; this led to the formation of a startup company, Vortex Biotechnology Corporation. Four startup companies are related to this Center. Dr. Lemasters has identified a potential new therapy for the treatment of hemorrhagic injury, for which he has received Department of Defense funding. Center personnel Drs. Schnellmann and Beeson have launched a project to develop new drugs to promote mitochondrial biogenesis.

CANCER CONT'D.



GI Cancer Diagnostics

Award Date: 2005 **Award Amount:** $5 million **Institution:** MUSC
Extramural Research Above Matching Requirement: $14.7 million
Grace E. DeWolff Chair in Medical Oncology: Dr. Melanie B. Thomas
Additional Chair: MUSC is recruiting a SMARTSTATE ENDOWED CHAIR IN GI MALIGNANCY DIAGNOSTIC & THERAPEUTIC TRIALS.

This Center researches translational medicine for gastrointestinal (GI) cancer patients in order to decrease cancer mortality and morbidity. Areas of research include molecular profiling, therapeutic targets, screening technologies, therapy and population studies, with particular emphasis on esophageal cancer, which is prevalent in South Carolina. Partners for this Center include Roche Carolina and Bank of America. Through the leadership of SmartState Endowed Chair Dr. Melanie Thomas, also Associate Director of Clinical Investigations at the Hollings Cancer Center, this Center has initiated numerous clinical trials of novel biologic anti-cancer agents for patients with malignancies in all sites in the GI tract. The spectrum of clinical trials she currently leads includes investigator-initiated, Southwest Oncology Group, industry sponsored, and CTEP-sponsored Phase I, II and randomized Phase II trials.

Tobacco-Related Malignancies

Award Date: 2007 **Award Amount:** $5 million **Institution:** MUSC
Extramural Research Above Matching Requirement: $37.7 million
The Burtschy Family Distinguished SmartState Endowed Chair in Lung Cancer Research at MUSC: Dr. George R. Simon
Chair: MUSC is recruiting the BMW ENDOWED CHAIR IN CANCER RESEARCH.

This Center is devoted to discovering tobacco-related malignancy biomarkers. Hollings Cancer Center (HCC) has used revenue from a statewide cigarette tax to expand clinical trials availability. In all, the center has more than $37 million in cancer research funding and more than 1,000 people are currently participating in a HCC clinical trial. As a result of the HCC National Cancer Institute designation, a collaborative project, NAVIGATE, has been initiated between HCC, Spartanburg Regional Healthcare System, and St. Joseph's/Candler Hospital (Savannah), to elucidate specific barriers experienced by thoracic and esophageal cancer patients when seeking timely treatment options.

Cancer Disparities

Award Date: 2008 **Award Amount:** $3.6 million **Institutions:** MUSC/USC/South Carolina State University
Extramural Research Above Matching Requirement: $15 million
MUSC Chairs: MUSC is actively recruiting two SmartState Endowed Chairs in Cancer Disparities.
USC Chair: USC is actively recruiting a SmartState Endowed Chair in Cancer Disparities.

This Center will increase prostate cancer screening and early detection among African-American men. Despite the fact that prostate cancer mortality rates in South Carolina are three times greater for African-Americans than for Caucasians, African-Americans are significantly underrepresented in prostate cancer clinical trials. A common barrier to the development of new knowledge for medical problems affecting racially and ethnically diverse populations is the ability to enroll diverse patients in medical research. The SmartState Chairs will conduct prostate cancer clinical trials and examine aspects of obesity and lifestyle modifications as contributing factors to prostate cancer. They will also examine factors that influence the screening and treatment of African-American men. The AT&T Foundation provided a $1 million gift to MUSC to provide free prostate cancer screenings and treatment advice and education to 500 African-Americans in South Carolina.

Undergraduate students from the three HBCUs will participate in research intensive summer internships in the laboratories of senior prostate cancer research scientists at Hollings Cancer Center.

Cancer Stem Cell Biology & Therapy

Extramural Research Above Matching Requirement: $8.6 million

Award Date: 2008 **Award Amount:** $5 million **Institutions:** MUSC/Clemson

The Abney Chair Remembering Sally Abney Rose: Dr. Zihai Li

Chairs: MUSC is recruiting a SMARTSTATE ENDOWED CHAIR IN BIOMEDICAL ENGINEERING.

This Center focuses on developing new technologies for isolating, growing and manipulating cancer stem cells. Cancer stem cells are adult stem cells that have the ability to reproduce themselves and develop into cancer cells. The Center will find ways to use adult stem cells from bone marrow or organs to treat cancer. The work of this Center generates further understanding of cancer stem cells and ways to eradicate them without harming healthy cells. Research could also lead to the engineering of healthy adult stem cells that can replace cancerous cells in the body.

This Center will seek to add a repository of adult cancer stem cells to the Health Sciences South Carolina tissue repository for use in further research across South Carolina. Center senior researcher Dr. Bryan Toole is studying the use of hyaluronan, a compound which resides on the surface of cancer stem-like cells, as a treatment for glioblastoma tumors. Hyaluronan, along with two other substances, regulate the activities of cancer stem-like cells. The Center recently recruited a University of Connecticut microbiologist with an expertise in stem cell-based cancer vaccine development.

Newly appointed SmartState Endowed Chair Dr. Zihai Li of the Cancer Stem Cell Biology & Therapy Center of Economic Excellence.

Lipidomics, Pathobiology & Therapy

Extramural Research Above Matching Requirement: $20 million

Award Date: 2009 **Amount:** $5 million **Institution:** MUSC

Chairs: MUSC is recruiting a SMARTSTATE ENDOWED CHAIR IN LIPIDOMICS AND PATHOBIOLOGY and a SMARTSTATE ENDOWED CHAIR IN LIPIDOMICS DRUG DISCOVERY.

This Center will translate basic lipidomics research into an understanding of how lipids play a role in health problems such as cancer, inflammation, and diabetes. Researchers will identify new targets for diagnostics or treatments.

The American Society for Biochemistry and Molecular Biology has named Center senior personnel Dr. Yusuf Hannun the winner of the 2010 Avanti Award in Lipids. The award recognizes Hannun's work on bioactive sphingolipids, a class of lipids that have emerged as critical regulators of a multitude of cell functions and, when defective, can cause disorders with significant medical effects.

In 2011, the Center organized the Sixth International Charleston Ceramide Conference in Switzerland. The Conference featured over 130 international attendees. This conference was established to promote collaboration between faculty worldwide.

(l to r) Clemson President James Barker, MUSC President Raymond Greenberg, and USC President Harris Pastides. The state's three senior research presidents serve as ex-officio, non-voting members of the SmartState Review Board.













SmartState Review Board

Top Row: Regan Voit (Chair), Melvin Williams (Vice Chair), Keith Munson (Secretary).

Second Row: Bobby Pearce, Patricia Wilson, J. Lyles Glenn.

Third Row: Michael Couick, Lisa Main, Catherine Heigel, Patrick Turner.

The South Carolina Centers of Economic Excellence Council of Chairs

Top Row: Robert Adams, Gary Aston-Jones, Brian Benicewicz, Charles Bennett, Marc Chimowitz, Richard Drake, Todd Hubing.

Second Row: Louis Guillette, Mark Helpern, Simon Hudson, Eric Johnson, Steve Kresovich, Tom Kurfess (FY 2011 Council Chair), Jochen Lauterbach, John Lemasters, Sue Levkoff, Zihai Li, Scott Mason.

Third Row: Martin Morad, Jay Moskowitz, Gavin Naylor, Jihad Obeid, Iain Sanderson, John Regalbuto, Kenneth Reifsnider, Igor Roninson, Chris Rorden, John Schaefer, Souvik Sen.

Fourth Row: George Simon, Charles Smith, Rita Snyder, Richard Swaja, Kenneth Tew, Melanie Thomas, Frank Treiber, Paul Venhovens, Richard Webb, Xuejun Wen, Patrick Woster.

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South Carolina Commission on Higher Education
1122 Lady Street Suite 300 Columbia, SC 29201

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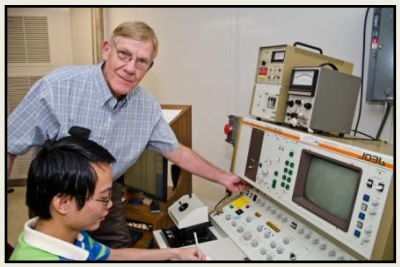

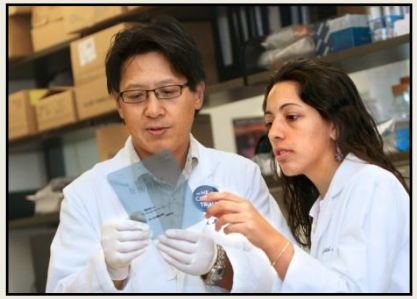

SmartState Program Mission Statement

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, and enhance economic opportunities and improve the quality of life for the people of South Carolina.

The *2010-2011 SmartState Program Annual Report to the South Carolina General Assembly and the South Carolina Budget & Control Board Report* is published annually by the SmartState Review Board and the South Carolina Commission on Higher Education in accordance with S.C. 2-75-10.

PUBLICATION DATE: November 30, 2011

SmartState™
SC Centers of Economic Excellence

Clemson's Optical Materials Center Director, Dr. John Ballato, works with Center staff member Courtney Kucera to make light-emitting nanoparticles.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE

FINANCIAL AND COMPLIANCE REPORT

JUNE 30, 2011

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
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YEAR ENDED JUNE 30, 2011

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
REVIEW BOARD
JUNE 30, 2011

NAME	POSITION	APPOINTMENT
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 2010-2011

The following discussion and analysis has been prepared by staff from the Commission on Higher Education to provide an overview of the activities of the South Carolina Centers of Economic Excellence (SmartState) Program for fiscal year 2010-2011. This discussion and analysis should be read in conjunction with the financial statement and accompanying notes to the financial statement. The financial statement has been prepared by an independent auditor (Derrick, Stubbs & Stith, L.L.P.) in accordance with S.C. 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[1] 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, and Medical University of South Carolina. 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.

[1] The General Assembly appropriated $30 million per year in the state budget for fiscal years 2003 through 2008. The General Assembly appropriated $0 for fiscal years 2009 through 2011.

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 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. The 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 Commission on Higher Education staff. The Commission approves the operational budget for the program.

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 as many as 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 realized (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 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 Commission on Higher Education staff 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 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 become effective January 1, 2011. The SmartState Review Board issued an RFP for awards in FY 2011, yet did not make any SmartState Commerce Awards during 2011.

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 the three clusters of future fuels, the 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, CoEE Endowed Chair at MUSC's Clinical Effectiveness and Patient Safety Center, has noted that such academic collaboration rarely exists—not even at Harvard and Yale. The lure of bonded research partnerships serves as an enticing recruiting tool to the renowned scientists required to lead each Center.

At the end of FY 2011, the program consisted of 49 Centers and 87 approved SmartState Endowed Chairs (31 appointed). [As of November 2011, a total of 41 SmartState Endowed Chairs have been appointed.] As envisioned by the General Assembly, the SmartState Program has become a successful boost to the state's knowledge-based economy. By the end of FY 2011, of the $197.6 million[2] in SmartState awards granted by the Board, $187.2 million in matching pledges was committed by non-state sources, with more than $167.7 million of these pledges realized and $160.5 million in state funds drawn down by the research institutions.

[2] To date, the SmartState Review Board has obligated $18.6 million in accrued program interest for the awarding of additional proposals, as is permitted by statute. To date, the Review Board has used $17.6 million in accrued interest to fund proposals in the 2008-2009 and 2009-2010 award cycle.

Summary of Approved SmartState Program Centers of Economic Excellence (2003-2011)

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		**11**	**$29 million**

* Revised to three chairs by act of the SmartState Review Board on January 12, 2009.
** Revised to three chairs by act of the SmartState Review Board on February 23, 2010.
*** 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.

SmartState Program Funded Proposals (continued)

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	Renewable Fuel Cells	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**

Funding Year 2005-2006

Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson	Supply Chain Optimization & Logistics	1	$2 million
Clemson	Urban Ecology and Restoration	1	$2 million
Clemson	Advanced Fiber-Based Materials	1	$4 million
Clemson	Molecular Nutrition [WITHDRAWN]	—	[$2 million]
USC	Solid Oxide Fuel Cells	1	$3 million
USC/MUSC	Childhood Neurotherapeutics	3	$5 million
MUSC	Molecular Proteomics in Cardiovascular Disease & Prevention	2	$5 million
MUSC/USC	Clinical Effectiveness & Patient Safety†	3	$5 million
Total Awarded in 2005-2006		**12**	**$26 million**

Funding Year 2006-2007

Institution (fiscal institution first)	Proposal Title	Endowed Chairs	Proposal Amount
Clemson/MUSC	Health Facilities Design & Testing	2	$5 million
USC	Rehabilitation & Recon Science	1	$5 million
USC	Strategic App to Gen. of Electricity	1	$5 million
USC/MUSC/Clemson	Healthcare Quality	2	$5 million
USC/Clemson	Senior SMART™ Center ±	3	$5 million
MUSC	Tobacco-Related Malignancy	2	$5 million
MUSC/USC	Stroke	3	$5 million
Total Awarded in 2006-2007		**14**	**$35 million**

* 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.
** Increased from one to two by act of the SmartState Review Board on September 8, 2008.
† 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.
± The SeniorSMART Center of Economic Excellence was approved in 2007-2008. Funding was provided from 2006-2007 dollars.

SmartState Program 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	Nanoenvironmental Research & Risk Assessment	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	1	$3 million
USC	General Atomics Center for Development of Transformational Nuclear Technologies	1	$3 million
USC/MUSC	Healthful Lifestyles**	2	$3 million
MUSC	Lipidomics, Pathobiology and Therapy	2	$5 million
Total Awarded in 2008-2009		**6**	**$14 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**

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

Program Totals	
TOTAL LOTTERY APPROPRIATIONS (2003-2008)	**$180 million**
ACCRUED PROGRAM INTEREST USED FOR ADDITIONAL AWARDS *	**$17.6 million**
TOTAL FUNDS AWARDED (2003-2010)	**$197.6 million**

* As permitted by S.C. 2-75-30(A).

Research Institution Totals				
Institution	**Centers Awarded**	**Chairs Created**	**Chairs Appointed (to be Apptd) ***	**State Funds Drawn**
Clemson University	13	16	7 (9)	$38,078,998
University of South Carolina	17	29	14 (15)	$54,252,175
Medical University of South Carolina	19	42	20 (22)	$68,141,139
TOTALS	49	87	41 (46)	$160,472,312

* Figures in this column reflect appointments through October 2011.

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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, 2011, 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.

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.

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, 2011, in conformity with accounting principles generally accepted in the United States of America.

In accordance with *Government Auditing Standards*, we have also issued a report dated November 18, 2011, 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. 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.

The Management's Discussion and Analysis on pages 2 - 9 is not a required part of the basic financial statements but is supplementary information required by the Governmental Accounting Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding methods of measurement and presentation of the required supplementary information. However, we did not audit the information and do not express an opinion on it.

Derrick Stubbs + Stith LLP

November 18, 2011

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
PROGRAM REVENUES AND EXPENDITURES - CONSOLIDATED SUMMARY
YEAR ENDING JUNE 30, 2011

	Clemson University					Medical University of South Carolina				
	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	$ 2,755,500	$ -	$ -	$ -	**$ 2,755,500**	$ 13,650,228	$ -	$ -	$ -	**$ 13,650,228**
Non-state matching funds	-	2,600,157	-	-	**2,600,157**	-	2,588,005	2,183,154	-	**4,771,159**
Total contribution revenue	2,755,500	2,600,157	-	-	**5,355,657**	13,650,228	2,588,005	2,183,154	-	**18,421,387**
Investment Income										
Realized gain (loss)	-	-	-	(91,002)	**(91,002)**	-	-	-	(29,410)	**(29,410)**
Unrealized gain	-	-	-	12,329,779	**12,329,779**	-	-	-	11,710,059	**11,710,059**
Endowment income	-	-	-	537,887	**537,887**	-	-	-	1,304,992	**1,304,992**
Total investment income	-	-	-	12,776,664	**12,776,664**	-	-	-	12,985,641	**12,985,641**
Total revenue	2,755,500	2,600,157	-	12,776,664	**18,132,321**	13,650,228	2,588,005	2,183,154	12,985,641	**31,407,028**
Expenditures										
Personal services	-	-	-	272,959	**272,959**	-	-	808,571	534,924	**1,343,495**
Fringe	-	-	-	66,419	**66,419**	-	-	232,766	161,658	**394,424**
Travel	-	-	-	44,556	**44,556**	-	-	7,671	21,799	**29,470**
Supplies	-	-	-	140,903	**140,903**	-	-	145,220	1,285	**146,505**
Contractual	-	-	-	-	**-**	-	-	63,400	164,444	**227,844**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	-	**-**	-	-	21,653	711,739	**733,392**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	46,902	41,346	**88,248**
Facilities	-	-	-	-	**-**	-	-	119,668		**119,668**
Equipment	-	-	913,498	10,538	**924,036**	-	-	311,612	150,725	**462,337**
Total expenditures	-	-	913,498	535,375	**1,448,873**	-	-	1,757,463	1,787,920	**3,545,383**
Program net income	2,755,500	2,600,157	(913,498)	12,241,289	**16,683,448**	13,650,228	2,588,005	425,691	11,197,721	**27,861,645**
Transfers	-	(913,498)	913,498	-	**-**	-	(500,000)	671,722	(77,474)	**94,248**
Cumulative Program Net Income										
Beginning	34,889,299	30,683,703	561,219	(2,911,665)	**63,222,556**	54,490,911	26,893,582	7,048,201	(795,125)	**87,637,569**
Ending	$ 37,644,799	$ 32,370,362	$ 561,219	$ 9,329,624	**$ 79,906,004**	$ 68,141,139	$ 28,981,587	$ 8,145,614	$ 10,325,122	**$ 115,593,462**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
PROGRAM REVENUES AND EXPENDITURES - CONSOLIDATED SUMMARY
YEAR ENDING JUNE 30, 2011

	University of South Carolina					Total - Consolidated Summary				
	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	$ 17,406,613	$ -	$ -	$ -	**$ 17,406,613**	$ 33,812,341	$ -	$ -	$ -	**$ 33,812,341**
Non-state matching funds	-	2,121,305	7,875,075	-	**9,996,380**	-	7,309,467	10,058,229	-	**17,367,696**
Total contribution revenue	17,406,613	2,121,305	7,875,075	-	**27,402,993**	33,812,341	7,309,467	10,058,229	-	**51,180,037**
Investment Income										
Realized gain (loss)	-	-	-	813,043	**813,043**	-	-	-	692,631	**692,631**
Unrealized gain	-	-	-	1,335,909	**1,335,909**	-	-	-	25,375,747	**25,375,747**
Endowment income	-	-	-	2,089,223	**2,089,223**	-	-	-	3,932,102	**3,932,102**
Total investment income	-	-	-	4,238,175	**4,238,175**	-	-	-	30,000,480	**30,000,480**
Total revenue	17,406,613	2,121,305	7,875,075	4,238,175	**31,641,168**	33,812,341	7,309,467	10,058,229	30,000,480	**81,180,517**
Expenditures										
Personal services	-	-	1,838,594	237,381	**2,075,975**	-	-	2,647,165	1,045,264	**3,692,429**
Fringe	-	-	187,461	20,536	**207,997**	-	-	420,227	248,613	**668,840**
Travel	-	-	147,799	4,627	**152,426**	-	-	155,470	70,982	**226,452**
Supplies	-	-	312,088	13,725	**325,813**	-	-	457,308	155,913	**613,221**
Contractual	-	-	1,084,865	21,235	**1,106,100**	-	-	1,148,265	185,679	**1,333,944**
Tuition assistance	-	-	13,255	1,828	**15,083**	-	-	13,255	1,828	**15,083**
Fixed charges	-	-	89,526	-	**89,526**	-	-	89,526	-	**89,526**
Indirect cost recovery	-	-	525,234	-	**525,234**	-	-	525,234	-	**525,234**
Administrative fees	-	-	-	234,407	**234,407**	-	-	21,653	946,146	**967,799**
Legal	-	-	107,066	-	**107,066**	-	-	107,066	-	**107,066**
Other	-	-	87,328	29,314	**116,642**	-	-	134,230	70,660	**204,890**
Facilities	-	-	-	-	**-**	-	-	119,668	-	**119,668**
Equipment	-	-	3,362,803	23,286	**3,386,089**	-	-	4,587,913	184,549	**4,772,462**
Total expenditures	-	-	7,756,019	586,339	**8,342,358**	-	-	10,426,980	2,909,634	**13,336,614**
Program net income	17,406,613	2,121,305	119,056	3,651,836	**23,298,810**	33,812,341	7,309,467	(368,751)	27,090,846	**67,843,903**
Transfers	-	525,500	(1,050,000)	500,000	**(24,500)**	-	(887,998)	535,220	422,526	**69,748**
Cumulative Program Net Income										
Beginning	33,910,962	16,122,578	5,781,058	2,509,653	**58,324,251**	123,291,172	73,699,863	13,390,478	(1,197,137)	**209,184,376**
Ending	$ 51,317,575	$ 18,769,383	$ 4,850,114	$ 6,661,489	**$ 81,598,561**	$ 157,103,513	$ 80,121,332	$ 13,556,947	$ 26,316,235	**$ 277,098,027**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Automotive Design and Development					Automotive Manufacturing Integration				
	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)	-	-	-	3,132	**3,132**	-	-	-	(16,457)	**(16,457)**
Unrealized gain (loss)	-	-	-	1,031,307	**1,031,307**	-	-	-	2,221,077	**2,221,077**
Endowment income	-	-	-	114,520	**114,520**	-	-	-	58,774	**58,774**
Total investment income	-	-	-	1,148,959	**1,148,959**	-	-	-	2,263,394	**2,263,394**
Total revenue	-	-	-	1,148,959	**1,148,959**	-	-	-	2,263,394	**2,263,394**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	89,845	**89,845**
Fringe	-	-	-	-	**-**	-	-	-	20,804	**20,804**
Travel	-	-	-	-	**-**	-	-	-	18,501	**18,501**
Supplies	-	-	-	-	**-**	-	-	-	57,361	**57,361**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	913,498	-	**913,498**	-	-	-	-	**-**
Total expenses	-	-	913,498	-	**913,498**	-	-	-	186,511	**186,511**
Program net income (loss)	-	-	(913,498)	1,148,959	**235,461**	-	-	-	2,076,883	**2,076,883**
Transfers	-	(913,498)	913,498	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	5,000,000	4,221,056	-	(334,573)	**8,886,483**	5,000,000	5,000,000	-	(670,510)	**9,329,490**
Ending	$ 5,000,000	$ 3,307,558	$ -	$ 814,386	**$ 9,121,944**	$ 5,000,000	$ 5,000,000	$ -	$ 1,406,373	**$ 11,406,373**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Automotive Systems Integration					Optical Materials				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	-	-	-	**-**	-	-	-	-	**-**
Total contribution revenue	-	-	-	-	**-**	-	-	-	-	**-**
Investment Income										
Realized gain (loss)	-	-	-	(17,818)	**(17,818)**	-	-	-	(15,175)	**(15,175)**
Unrealized gain (loss)	-	-	-	2,438,614	**2,438,614**	-	-	-	1,569,087	**1,569,087**
Endowment income	-	-	-	64,469	**64,469**	-	-	-	54,771	**54,771**
Total investment income	-	-	-	2,485,265	**2,485,265**	-	-	-	1,608,683	**1,608,683**
Total revenue	-	-	-	2,485,265	**2,485,265**	-	-	-	1,608,683	**1,608,683**
Expenditures										
Personal services	-	-	-	144,136	**144,136**	-	-	-	-	**-**
Fringe	-	-	-	35,237	**35,237**	-	-	-	-	**-**
Travel	-	-	-	10,487	**10,487**	-	-	-	-	**-**
Supplies	-	-	-	54,600	**54,600**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	10,538	**10,538**	-	-	-	-	**-**
Total expenses	-	-	-	254,998	**254,998**	-	-	-	-	**-**
Program net income (loss)	-	-	-	2,230,267	**2,230,267**	-	-	-	1,608,683	**1,608,683**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	5,000,000	5,000,000	-	327,017	**10,327,017**	5,000,000	3,050,852	32,321	(539,950)	**7,543,223**
Ending	$ 5,000,000	$ 5,000,000	$ -	$ 2,557,284	**$ 12,557,284**	$ 5,000,000	$ 3,050,852	$ 32,321	$ 1,068,733	**$ 9,151,906**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Vehicle Electronic Systems					Supply Chain Optimization and 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	$ -	$ -	$ -	$ -	**$ -**	$ 300,000	$ -	$ -	$ -	**$ 300,000**
Non-state matching funds	-	-	-	-	**-**	-	300,000	-	-	**300,000**
Total contribution revenue	-	-	-	-	**-**	300,000	300,000	-	-	**600,000**
Investment Income										
Realized gain (loss)	-	-	-	(10,291)	**(10,291)**	-	-	-	(2,915)	**(2,915)**
Unrealized gain (loss)	-	-	-	1,098,403	**1,098,403**	-	-	-	588,734	**588,734**
Endowment income	-	-	-	29,596	**29,596**	-	-	-	24,309	**24,309**
Total investment income	-	-	-	1,117,708	**1,117,708**	-	-	-	610,128	**610,128**
Total revenue	-	-	-	1,117,708	**1,117,708**	300,000	300,000	-	610,128	**1,210,128**
Expenditures										
Personal services	-	-	-	38,978	**38,978**	-	-	-	-	**-**
Fringe	-	-	-	10,378	**10,378**	-	-	-	-	**-**
Travel	-	-	-	15,568	**15,568**	-	-	-	-	**-**
Supplies	-	-	-	28,942	**28,942**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenses	-	-	-	93,866	**93,866**	-	-	-	-	**-**
Program net income (loss)	-	-	-	1,023,842	**1,023,842**	300,000	300,000	-	610,128	**1,210,128**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	3,000,000	2,000,000	-	(336,210)	**4,663,790**	1,700,000	1,700,000	-	(461,231)	**2,938,769**
Ending	$ 3,000,000	$ 2,000,000	$ -	$ 687,632	**$ 5,687,632**	$ 2,000,000	$ 2,000,000	$ -	$ 148,897	**$ 4,148,897**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Urban Ecology and Restoration					Advanced Fiber-Based 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	$ -	$ -	$ -	$ -	**$ -**	$ 130,500	$ -	$ -	$ -	**$ 130,500**
Non-state matching funds	-	-	-	-	**-**	-	130,000	-	-	**130,000**
Total contribution revenue	-	-	-	-	**-**	130,500	130,000	-	-	**260,500**
Investment Income										
Realized gain (loss)	-	-	-	(5,558)	**(5,558)**	-	-	-	(9,130)	**(9,130)**
Unrealized gain (loss)	-	-	-	785,236	**785,236**	-	-	-	1,326,146	**1,326,146**
Endowment income	-	-	-	20,679	**20,679**	-	-	-	40,479	**40,479**
Total investment income	-	-	-	800,357	**800,357**	-	-	-	1,357,495	**1,357,495**
Total revenue	-	-	-	800,357	**800,357**	130,500	130,000	-	1,357,495	**1,617,995**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenses	-	-	-	-	**-**	-	-	-	-	**-**
Program net income (loss)	-	-	-	800,357	**800,357**	130,500	130,000	-	1,357,495	**1,617,995**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	2,000,000	2,000,000	-	(669,104)	**3,330,896**	3,282,500	3,116,000	28,898	(414,210)	**6,013,188**
Ending	$ 2,000,000	$ 2,000,000	$ -	$ 131,253	**$ 4,131,253**	$ 3,413,000	$ 3,246,000	$ 28,898	$ 943,285	**$ 7,631,183**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Health Facilities Design and Testing					Optoelectronics				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ 125,000	$ -	$ -	$ -	**$ 125,000**
Non-state matching funds	-	-	-	-	**-**	-	125,000	-	-	**125,000**
Total contribution revenue	-	-	-	-	**-**	125,000	125,000	-	-	**250,000**
Investment Income										
Realized gain (loss)	-	-	-	(9,405)	**(9,405)**	-	-	-	913	**913**
Unrealized gain (loss)	-	-	-	542,303	**542,303**	-	-	-	391,265	**391,265**
Endowment income	-	-	-	51,551	**51,551**	-	-	-	36,963	**36,963**
Total investment income	-	-	-	584,449	**584,449**	-	-	-	429,141	**429,141**
Total revenue	-	-	-	584,449	**584,449**	125,000	125,000	-	429,141	**679,141**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenses	-	-	-	-	**-**	-	-	-	-	**-**
Program net income (loss)	-	-	-	584,449	**584,449**	125,000	125,000	-	429,141	**679,141**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	2,000,000	2,000,000	-	321,195	**4,321,195**	1,506,799	1,506,799	-	(74,998)	**2,938,600**
Ending	$ 2,000,000	$ 2,000,000	$ -	$ 905,644	**$ 4,905,644**	$ 1,631,799	$ 1,631,799	$ -	$ 354,143	**$ 3,617,741**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Cyber-Institute					Sustainable Development				
	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	$ 600,000	$ -	$ -	$ -	**$ 600,000**	$ 1,600,000	$ -	$ -	$ -	**$ 1,600,000**
Non-state matching funds	-	-	-	-	**-**	-	2,045,157	-	-	**2,045,157**
Total contribution revenue	600,000	-	-	-	**600,000**	1,600,000	2,045,157	-	-	**3,645,157**
Investment Income										
Realized gain (loss)	-	-	-	(9,446)	**(9,446)**	-	-	-	1,148	**1,148**
Unrealized gain (loss)	-	-	-	119,939	**119,939**	-	-	-	217,668	**217,668**
Endowment income	-	-	-	28,172	**28,172**	-	-	-	13,604	**13,604**
Total investment income	-	-	-	138,665	**138,665**	-	-	-	232,420	**232,420**
Total revenue	600,000	-	-	138,665	**738,665**	1,600,000	2,045,157	-	232,420	**3,877,577**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenses	-	-	-	-	**-**	-	-	-	-	**-**
Program net income (loss)	600,000	-	-	138,665	**738,665**	1,600,000	2,045,157	-	232,420	**3,877,577**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	1,400,000	1,088,996	500,000	(59,091)	**2,929,905**	-	-	-	-	**-**
Ending	$ 2,000,000	$ 1,088,996	$ 500,000	$ 79,574	**$ 3,668,570**	$ 1,600,000	$ 2,045,157	$ -	$ 232,420	**$ 3,877,577**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
CLEMSON UNIVERSITY
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Total - Clemson University				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue					
State funds	$ 2,755,500	$ -	$ -	$ -	**$ 2,755,500**
Non-state matching funds	-	2,600,157	-	-	**2,600,157**
Total contribution revenue	2,755,500	2,600,157	-	-	**5,355,657**
Investment Income					
Realized gain (loss)	-	-	-	(91,002)	**(91,002)**
Unrealized gain (loss)	-	-	-	12,329,779	**12,329,779**
Endowment income	-	-	-	537,887	**537,887**
Total investment income	-	-	-	12,776,664	**12,776,664**
Total revenue	2,755,500	2,600,157	-	12,776,664	**18,132,321**
Expenditures					
Personal services	-	-	-	272,959	**272,959**
Fringe	-	-	-	66,419	**66,419**
Travel	-	-	-	44,556	**44,556**
Supplies	-	-	-	140,903	**140,903**
Other	-	-	-	-	**-**
Equipment	-	-	913,498	10,538	**924,036**
Total expenses	-	-	913,498	535,375	**1,448,873**
Program net income (loss)	2,755,500	2,600,157	(913,498)	12,241,289	**16,683,448**
Transfers	-	(913,498)	913,498	-	**-**
Cumulative Program Net Income					
Beginning	34,889,299	30,683,703	561,219	(2,911,665)	**63,222,556**
Ending	$ 37,644,799	$ 32,370,362	$ 561,219	$ 9,329,624	**$ 79,906,004**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Proteomics					Neurosciences				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	-	90,945	-	**90,945**	-	-	-	-	**-**
Total contribution revenue	-	-	90,945	-	**90,945**	-	-	-	-	**-**
Investment Income										
Realized gain (loss)	-	-	-	(9,931)	**(9,931)**	-	-	-	(9,143)	**(9,143)**
Unrealized gain (loss)	-	-	-	729,833	**729,833**	-	-	-	576,107	**576,107**
Endowment income	-	-	-	79,187	**79,187**	-	-	-	61,112	**61,112**
Total investment income (loss)	-	-	-	799,089	**799,089**	-	-	-	628,076	**628,076**
Total revenue	-	-	90,945	799,089	**890,034**	-	-	-	628,076	**628,076**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	109,583	9,942	**119,525**
Fringe	-	-	-	-	**-**	-	-	23,191	3,042	**26,233**
Travel	-	-	788	-	**788**	-	-	-	-	**-**
Supplies	-	-	(1,852)	-	**(1,852)**	-	-	-	-	**-**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	50,363	**50,363**	-		-	42,273	**42,273**
Other	-	-	9,842	-	**9,842**	-	-	-	-	**-**
Facilities	-	-	90,945	-	**90,945**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	150,725	**150,725**
Total expenditures	-	-	99,723	50,363	**150,086**	-	-	132,774	205,982	**338,756**
Program net income (loss)	-	-	(8,778)	748,726	**739,948**	-	-	(132,774)	422,094	**289,320**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	4,000,000	1,254,266	800,567	(157,527)	**5,897,306**	3,000,000	900,000	825,453	39,576	**4,765,029**
Ending	$ 4,000,000	$ 1,254,266	$ 791,789	$ 591,199	**$ 6,637,254**	$ 3,000,000	$ 900,000	$ 692,679	$ 461,670	**$ 5,054,349**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
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	Marine Genomics					Regenerative Medicine				
	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)	-	-	-	(7,390)	**(7,390)**	-	-	-	31,511	**31,511**
Unrealized gain (loss)	-	-	-	838,092	**838,092**	-	-	-	1,084,935	**1,084,935**
Endowment income	-	-	-	143,932	**143,932**	-	-	-	40,712	**40,712**
Total investment income (loss)	-	-	-	974,634	**974,634**	-	-	-	1,157,158	**1,157,158**
Total revenue	-	-	-	974,634	**974,634**	-	-	-	1,157,158	**1,157,158**
Expenditures										
Personal services	-	-	-	197,958	**197,958**	-	-	154,465	-	**154,465**
Fringe	-	-	-	58,818	**58,818**	-	-	44,988	-	**44,988**
Travel	-	-	-	-	**-**	-	-	2,967	-	**2,967**
Supplies	-	-	-	-	**-**	-	-	84,547	-	**84,547**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	48,050	**48,050**	-	-	-	31,368	**31,368**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	12,692	-	**12,692**
Total expenditures	-	-	-	304,826	**304,826**	-	-	299,659	31,368	**331,027**
Program net income (loss)	-	-	-	669,808	**669,808**	-	-	(299,659)	1,125,790	**826,131**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	4,000,000	1,500,000	300,878	390,282	**6,191,160**	5,000,000	2,000,000	870,500	(441,269)	**7,429,231**
Ending	$ 4,000,000	$ 1,500,000	$ 300,878	$ 1,060,090	**$ 6,860,968**	$ 5,000,000	$ 2,000,000	$ 570,841	$ 684,521	**$ 8,255,362**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
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	Translational Cancer Therapeutics					Drug Discovery in Cancer				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	-	-	-	**-**	-	-	333,334	-	**333,334**
Total contribution revenue	-	-	-	-	**-**	-	-	333,334	-	**333,334**
Investment Income										
Realized gain (loss)	-	-	-	(10,841)	**(10,841)**	-	-	-	(12,184)	**(12,184)**
Unrealized gain (loss)	-	-	-	1,018,312	**1,018,312**	-	-	-	908,120	**908,120**
Endowment income	-	-	-	130,073	**130,073**	-	-	-	97,111	**97,111**
Total investment income (loss)	-	-	-	1,137,544	**1,137,544**	-	-	-	993,047	**993,047**
Total revenue	-	-	-	1,137,544	**1,137,544**	-	-	333,334	993,047	**1,326,381**
Expenditures										
Personal services	-	-	-	154,078	**154,078**	-	-	187,380	-	**187,380**
Fringe	-	-	-	46,877	**46,877**	-	-	55,264	-	**55,264**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	3,864	-	**3,864**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	76,719	**76,719**	-	-	-	66,885	**66,885**
Other	-	-	-	-	**-**	-	-	176	-	**176**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	-	277,674	**277,674**	-	-	246,684	66,885	**313,569**
Program net income (loss)	-	-	-	859,870	**859,870**	-	-	86,650	926,162	**1,012,812**
Transfers	-	-	(47,764)	47,764	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	5,000,000	1,998,095	47,764	228,495	**7,274,354**	5,000,000	1,604,510	128,569	(396,587)	**6,336,492**
Ending	$ 5,000,000	$ 1,998,095	$ -	$ 1,136,129	**$ 8,134,224**	$ 5,000,000	$ 1,604,510	$ 215,219	$ 529,575	**$ 7,349,304**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
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	Gastrointestinal Cancer Diagnostics					Vision Science				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	-	-	-	**-**	-	2,500	116,086	-	**118,586**
Total contribution revenue	-	-	-	-	**-**	-	2,500	116,086	-	**118,586**
Investment Income										
Realized gain (loss)	-	-	-	(13,684)	**(13,684)**	-	-	-	(11,588)	**(11,588)**
Unrealized gain (loss)	-	-	-	1,003,771	**1,003,771**	-	-	-	863,614	**863,614**
Endowment income	-	-	-	107,286	**107,286**	-	-	-	92,356	**92,356**
Total investment income (loss)	-	-	-	1,097,373	**1,097,373**	-	-	-	944,382	**944,382**
Total revenue	-	-	-	1,097,373	**1,097,373**	-	2,500	116,086	944,382	**1,062,968**
Expenditures										
Personal services	-	-	126,993	-	**126,993**	-	-	15,844	-	**15,844**
Fringe	-	-	38,860	-	**38,860**	-	-	4,848	-	**4,848**
Travel	-	-	-	-	**-**	-	-	2,083	-	**2,083**
Supplies	-	-	-	-	**-**	-	-	7,749	-	**7,749**
Contractual	-	-	-	-	**-**	-	-	45,565	63,729	**109,294**
Administrative fees	-	-	-	73,907	**73,907**	-	-	804	-	**804**
Other	-	-	-	-	**-**	-	-	922	-	**922**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	19,124	-	**19,124**
Total expenditures	-	-	165,853	73,907	**239,760**	-	-	96,939	63,729	**160,668**
Program net income (loss)	-	-	(165,853)	1,023,466	**857,613**	-	2,500	19,147	880,653	**902,300**
Transfers	-	-	176,308	(9,641)	**166,667**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	5,000,000	2,000,000	306,015	39,691	**7,345,706**	4,367,192	1,881,274	446,487	(349,112)	**6,345,841**
Ending	$ 5,000,000	$ 2,000,000	$ 316,470	$ 1,053,516	**$ 8,369,986**	$ 4,367,192	$ 1,883,774	$ 465,634	$ 531,541	**$ 7,248,141**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
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	Clinical Effectiveness and Patient Safety					Molecular Proteomics in Cardiovascular Disease and Prevention				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ 718,025	$ -	$ -	$ -	**$ 718,025**
Non-state matching funds	-	-	-	-	**-**	-	33,891	214,266	-	**248,157**
Total contribution revenue	-	-	-	-	**-**	718,025	33,891	214,266	-	**966,182**
Investment Income										
Realized gain (loss)	-	-	-	(14,274)	**(14,274)**	-	-	-	(11,562)	**(11,562)**
Unrealized gain (loss)	-	-	-	1,000,009	**1,000,009**	-	-	-	960,054	**960,054**
Endowment income	-	-	-	106,453	**106,453**	-	-	-	103,745	**103,745**
Total investment income (loss)	-	-	-	1,092,188	**1,092,188**	-	-	-	1,052,237	**1,052,237**
Total revenue	-	-	-	1,092,188	**1,092,188**	718,025	33,891	214,266	1,052,237	**2,018,419**
Expenditures										
Personal services	-	-	-	44,725	**44,725**	-	-	44,757	-	**44,757**
Fringe	-	-	-	13,686	**13,686**	-	-	13,743	-	**13,743**
Travel	-	-	-	19,263	**19,263**	-	-	-	-	**-**
Supplies	-	-	(12,814)	-	**(12,814)**	-	-	28,466	-	**28,466**
Contractual	-	-	-	73,364	**73,364**	-	-	-	-	**-**
Administrative fees	-	-	-	-	**-**	-	-	1,250	72,688	**73,938**
Other	-	-	-	19,304	**19,304**	-	-	-	-	**-**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	(12,814)	170,342	**157,528**	-	-	88,216	72,688	**160,904**
Program net income (loss)	-	-	12,814	921,846	**934,660**	718,025	33,891	126,050	979,549	**1,857,515**
Transfers	-	-	-	-	**-**	-	-	16,227	(16,227)	**-**
Cumulative Program Net Income										
Beginning	5,000,000	2,000,000	(12,814)	(165,954)	**6,821,232**	4,060,470	3,235,606	916,936	(713,654)	**7,499,358**
Ending	$ 5,000,000	$ 2,000,000	$ -	$ 755,892	**$ 7,755,892**	$ 4,778,495	$ 3,269,497	$ 1,059,213	$ 249,668	**$ 9,356,873**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
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	Tobacco-Related Malignancy					Stroke				
	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	$ -	$ -	$ -	$ -	**$ -**	$ 2,576,626	$ -	$ -	$ -	**$ 2,576,626**
Non-state matching funds	-	101,000	100,050	-	**201,050**	-	-	436,308	-	**436,308**
Total contribution revenue	-	101,000	100,050	-	**201,050**	2,576,626	-	436,308	-	**3,012,934**
Investment Income										
Realized gain (loss)	-	-	-	(16,295)	**(16,295)**	-	-	-	1,232	**1,232**
Unrealized gain (loss)	-	-	-	1,054,258	**1,054,258**	-	-	-	730,450	**730,450**
Endowment income	-	-	-	112,227	**112,227**	-	-	-	86,937	**86,937**
Total investment income (loss)	-	-	-	1,150,190	**1,150,190**	-	-	-	818,619	**818,619**
Total revenue	-	101,000	100,050	1,150,190	**1,351,240**	2,576,626	-	436,308	818,619	**3,831,553**
Expenditures										
Personal services	-	-	10,536	128,221	**138,757**	-	-	133,644	-	**133,644**
Fringe	-	-	3,097	39,235	**42,332**	-	-	40,996	-	**40,996**
Travel	-	-	-	2,536	**2,536**	-	-	-	-	**-**
Supplies	-	-	1,493	1,285	**2,778**	-	-	511	-	**511**
Contractual	-	-	5,003	464	**5,467**	-	-	8,257	-	**8,257**
Administrative fees	-	-	-	60,938	**60,938**	-	-	16,092	55,245	**71,337**
Other	-	-	35,962	21,709	**57,671**	-	-	-	-	**-**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	6,466	-	**6,466**
Total expenditures	-	-	56,091	254,388	**310,479**	-	-	205,966	55,245	**261,211**
Program net income (loss)	-	101,000	43,959	895,802	**1,040,761**	2,576,626	-	230,342	763,374	**3,570,342**
Transfers	-	-	-	-	**-**	-	-	104,485	(104,485)	**-**
Cumulative Program Net Income										
Beginning	5,000,000	1,470,812	728,373	781,962	**7,981,147**	2,269,607	2,500,000	473,824	369,488	**5,612,919**
Ending	$ 5,000,000	$ 1,571,812	$ 772,332	$ 1,677,764	**$ 9,021,908**	$ 4,846,233	$ 2,500,000	$ 808,651	$ 1,028,377	**$ 9,183,261**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
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	Renal Disease Biomarker					Cancer Stem Cell Biology and Therapy				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ 3,949,219	$ -	$ -	$ -	**$ 3,949,219**	$ 2,806,358	$ -	$ -	$ -	**$ 2,806,358**
Non-state matching funds	-	273,837	355,599	-	**629,436**	-	93,472	241,424	-	**334,896**
Total contribution revenue	3,949,219	273,837	355,599	-	**4,578,655**	2,806,358	93,472	241,424	-	**3,141,254**
Investment Income										
Realized gain (loss)	-	-	-	15,147	**15,147**	-	-	-	8,064	**8,064**
Unrealized gain (loss)	-	-	-	138,204	**138,204**	-	-	-	481,898	**481,898**
Endowment income	-	-	-	29,040	**29,040**	-	-	-	62,014	**62,014**
Total investment income (loss)	-	-	-	182,391	**182,391**	-	-	-	551,976	**551,976**
Total revenue	3,949,219	273,837	355,599	182,391	**4,761,046**	2,806,358	93,472	241,424	551,976	**3,693,230**
Expenditures										
Personal services	-	-	25,369	-	**25,369**	-	-	-	-	**-**
Fringe	-	-	7,779	-	**7,779**	-	-	-	-	**-**
Travel	-	-	1,833	-	**1,833**	-	-	-	-	**-**
Supplies	-	-	33,256	-	**33,256**	-	-	-	-	**-**
Contractual	-	-	4,575	26,887	**31,462**	-	-	-	-	**-**
Administrative fees	-	-	615	-	**615**	-	-	2,071	42,079	**44,150**
Other	-	-	-	-	**-**	-	-	-	333	**333**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	273,330	-	**273,330**	-	-	-	-	**-**
Total expenditures	-	-	346,757	26,887	**373,644**	-	-	2,071	42,412	**44,483**
Program net income (loss)	3,949,219	273,837	8,842	155,504	**4,387,402**	2,806,358	93,472	239,353	509,564	**3,648,747**
Transfers	-	(500,000)	422,466	-	**(77,534)**	-	-	-	5,115	**5,115**
Cumulative Program Net Income										
Beginning	-	1,548,875	35,295	(47,384)	**1,536,786**	2,193,642	1,414,139	1,101,678	(179,758)	**4,529,701**
Ending	$ 3,949,219	$ 1,322,712	$ 466,603	$ 108,120	**$ 5,846,654**	$ 5,000,000	$ 1,507,611	$ 1,341,031	$ 334,921	**$ 8,183,563**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
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	Advanced Tissue Biofabrication					Medication Safety and Efficacy				
	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	-	300,000	28,723	-	**328,723**	-	-	250,000	-	**250,000**
Total contribution revenue	-	300,000	28,723	-	**328,723**	-	-	250,000	-	**250,000**
Investment Income										
Realized gain (loss)	-	-	-	6,347	**6,347**	-	-	-	486	**486**
Unrealized gain (loss)	-	-	-	12,219	**12,219**	-	-	-	146,344	**146,344**
Endowment income	-	-	-	3,133	**3,133**	-	-	-	16,843	**16,843**
Total investment income (loss)	-	-	-	21,699	**21,699**	-	-	-	163,673	**163,673**
Total revenue	-	300,000	28,723	21,699	**350,422**	-	-	250,000	163,673	**413,673**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	1,566	**1,566**	-	-	-	10,711	**10,711**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Facilities	-	-	28,723	-	**28,723**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	28,723	1,566	**30,289**	-	-	-	10,711	**10,711**
Program net income (loss)	-	300,000	-	20,133	**320,133**	-	-	250,000	152,962	**402,962**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	-	-	75,000	-	**75,000**	600,000	600,000	-	(54,661)	**1,145,339**
Ending	$ -	$ 300,000	$ 75,000	$ 20,133	**$ 395,133**	$ 600,000	$ 600,000	$ 250,000	$ 98,301	**$ 1,548,301**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Prostate Cancer Disparities					Lipidomics, Pathobiology and Therapy				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ 3,600,000	$ -	$ -	$ -	**$ 3,600,000**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	1,077,000	3,819	-	**1,080,819**	-	550,200	-	-	**550,200**
Total contribution revenue	3,600,000	1,077,000	3,819	-	**4,680,819**	-	550,200	-	-	**550,200**
Investment Income										
Realized gain (loss)	-	-	-	24,361	**24,361**	-	-	-	128	**128**
Unrealized gain (loss)	-	-	-	37,865	**37,865**	-	-	-	(932)	**(932)**
Endowment income	-	-	-	18,232	**18,232**	-	-	-	78	**78**
Total investment income (loss)	-	-	-	80,458	**80,458**	-	-	-	(726)	**(726)**
Total revenue	3,600,000	1,077,000	3,819	80,458	**4,761,277**	-	550,200	-	(726)	**549,474**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	191	59,354	**59,545**	-	-	-	2,510	**2,510**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Facilities	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	191	59,354	**59,545**	-	-	-	2,510	**2,510**
Program net income (loss)	3,600,000	1,077,000	3,628	21,104	**4,701,732**	-	550,200	-	(3,236)	**546,964**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	-	3,000	3,676	258	**6,934**	-	-	-	-	**-**
Ending	$ 3,600,000	$ 1,080,000	$ 7,304	$ 21,362	**$ 4,708,666**	$ -	$ 550,200	$ -	$ (3,236)	**$ 546,964**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
MEDICAL UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Inflammation and Fibrosis					Total - Medical University of South Carolina				
	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	$ -	$ -	$ -	$ -	**$ -**	$ 13,650,228	$ -	$ -	$ -	**$ 13,650,228**
Non-state matching funds	-	156,105	12,600	-	**168,705**	-	2,588,005	2,183,154	-	**4,771,159**
Total contribution revenue	-	156,105	12,600	-	**168,705**	13,650,228	2,588,005	2,183,154	-	**18,421,387**
Investment Income										
Realized gain (loss)	-	-	-	206	**206**	-	-	-	(29,410)	**(29,410)**
Unrealized gain (loss)	-	-	-	126,906	**126,906**	-	-	-	11,710,059	**11,710,059**
Endowment income	-	-	-	14,521	**14,521**	-	-	-	1,304,992	**1,304,992**
Total investment income (loss)	-	-	-	141,633	**141,633**	-	-	-	12,985,641	**12,985,641**
Total revenue	-	156,105	12,600	141,633	**310,338**	13,650,228	2,588,005	2,183,154	12,985,641	**31,407,028**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	808,571	534,924	**1,343,495**
Fringe	-	-	-	-	**-**	-	-	232,766	161,658	**394,424**
Travel	-	-	-	-	**-**	-	-	7,671	21,799	**29,470**
Supplies	-	-	-	-	**-**	-	-	145,220	1,285	**146,505**
Contractual	-	-	-	-	**-**	-	-	63,400	164,444	**227,844**
Administrative fees	-	-	630	17,083	**17,713**	-	-	21,653	711,739	**733,392**
Other	-	-	-	-	**-**	-	-	46,902	41,346	**88,248**
Facilities	-	-	-	-	**-**	-	-	119,668	-	**119,668**
Equipment	-	-	-	-	**-**	-	-	311,612	150,725	**462,337**
Total expenditures	-	-	630	17,083	**17,713**	-	-	1,757,463	1,787,920	**3,545,383**
Program net income (loss)	-	156,105	11,970	124,550	**292,625**	13,650,228	2,588,005	425,691	11,197,721	**27,861,645**
Transfers	-	-	-	-	**-**	-	(500,000)	671,722	(77,474)	**94,248**
Cumulative Program Net Income										
Beginning	-	983,005	-	(138,971)	**844,034**	54,490,911	26,893,582	7,048,201	(795,125)	**87,637,569**
Ending	$ -	$ 1,139,110	$ 11,970	$ (14,421)	**$ 1,136,659**	$ 68,141,139	$ 28,981,587	$ 8,145,614	$ 10,325,122	**$ 115,593,462**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	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	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	150	-	-	**150**	-	-	-	-	**-**
Total contribution revenue	-	150	-	-	**150**	-	-	-	-	**-**
Investment Income										
Realized gain (loss)	-	-	-	81,554	**81,554**	-	-	-	100,002	**100,002**
Unrealized gain (loss)	-	-	-	182,763	**182,763**	-	-	-	224,122	**224,122**
Endowment income	-	-	-	255,657	**255,657**	-	-	-	259,800	**259,800**
Total investment income	-	-	-	519,974	**519,974**	-	-	-	583,924	**583,924**
Total revenue	-	150	-	519,974	**520,124**	-	-	-	583,924	**583,924**
Expenditures										
Personal services	-	-	10,775	30,000	**40,775**	-	-	-	49,719	**49,719**
Fringe	-	-	1,393	-	**1,393**	-	-	-	-	**-**
Travel	-	-	3,607	-	**3,607**	-	-	-	-	**-**
Supplies	-	-	681	291	**972**	-	-	-	-	**-**
Contractual	-	-	2,573	17,295	**19,868**	-	-	-	-	**-**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	7,211	-	**7,211**	-	-	-	-	**-**
Administrative fees	-	-	-	21,298	**21,298**	-	-	-	26,116	**26,116**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	16,342	806	**17,148**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	42,582	69,690	**112,272**	-	-	-	75,835	**75,835**
Program net income (loss)	-	150	(42,582)	450,284	**407,852**	-	-	-	508,089	**508,089**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	4,000,000	1,632,855	52,262	384,863	**6,069,980**	5,000,000	2,089,589	-	105,053	**7,194,642**
Ending	$ 4,000,000	$ 1,633,005	$ 9,680	$ 835,147	**$ 6,477,832**	$ 5,000,000	$ 2,089,589	$ -	$ 613,142	**$ 7,702,731**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Polymer Nanocomposites					Hydrogen Fuel Cell Economy				
	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	$ 656,862	$ -	$ -	$ -	**$ 656,862**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	141,155	-	-	**141,155**	-	-	719,635	-	**719,635**
Total contribution revenue	656,862	141,155	-	-	**798,017**	-	-	719,635	-	**719,635**
Investment Income										
Realized gain (loss)	-	-	-	54,879	**54,879**	-	-	-	-	**-**
Unrealized gain (loss)	-	-	-	186,116	**186,116**	-	-	-	-	**-**
Endowment income	-	-	-	205,830	**205,830**	-	-	-	136,848	**136,848**
Total investment income	-	-	-	446,825	**446,825**	-	-	-	136,848	**136,848**
Total revenue	656,862	141,155	-	446,825	**1,244,842**	-	-	719,635	136,848	**856,483**
Expenditures										
Personal services	-	-	-	112,662	**112,662**	-	-	264,334	-	**264,334**
Fringe	-	-	-	16,211	**16,211**	-	-	29,526	-	**29,526**
Travel	-	-	-	-	**-**	-	-	57,993	-	**57,993**
Supplies	-	-	-	13,381	**13,381**	-	-	67,136	-	**67,136**
Contractual	-	-	-	3,940	**3,940**	-	-	14,399	-	**14,399**
Tuition assistance	-	-	-	1,828	**1,828**	-	-	13,255	-	**13,255**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	-	-	**-**	-	-	95,187	-	**95,187**
Administrative fees	-	-	-	16,897	**16,897**	-	-	-	-	**-**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	8,283	**8,283**	-	-	14,805	-	**14,805**
Equipment	-	-	-	23,286	**23,286**	-	-	145,550	-	**145,550**
Total expenditures	-	-	-	196,488	**196,488**	-	-	702,185	-	**702,185**
Program net income (loss)	656,862	141,155	-	250,337	**1,048,354**	-	-	17,450	136,848	**154,298**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	2,843,138	1,287,627	-	322,934	**4,453,699**	2,500,000	-	-	378,754	**2,878,754**
Ending	$ 3,500,000	$ 1,428,782	$ -	$ 573,271	**$ 5,502,053**	$ 2,500,000	$ -	$ 17,450	$ 515,602	**$ 3,033,052**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Tourism and Economic Development					Renewable Fuel Cells				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ 426,400	$ -	$ -	$ -	**$ 426,400**	$ 880,454	$ -	$ -	$ -	**$ 880,454**
Non-state matching funds	-	-	15,333	-	**15,333**	-	860,000	-	-	**860,000**
Total contribution revenue	426,400	-	15,333	-	**441,733**	880,454	860,000	-	-	**1,740,454**
Investment Income										
Realized gain (loss)	-	-	-	47,519	**47,519**	-	-	-	98,365	**98,365**
Unrealized gain (loss)	-	-	-	106,497	**106,497**	-	-	-	121,348	**121,348**
Endowment income	-	-	-	105,294	**105,294**	-	-	-	141,399	**141,399**
Total investment income	-	-	-	259,310	**259,310**	-	-	-	361,112	**361,112**
Total revenue	426,400	-	15,333	259,310	**701,043**	880,454	860,000	-	361,112	**2,101,566**
Expenditures										
Personal services	-	-	21,059	-	**21,059**	-	-	-	-	**-**
Fringe	-	-	6,083	-	**6,083**	-	-	-	-	**-**
Travel	-	-	9,036	-	**9,036**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Contractual	-	-	5,800	-	**5,800**	-	-	-	-	**-**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	15,422	-	**15,422**	-	-	-	-	**-**
Administrative fees	-	-	-	12,410	**12,410**	-	-	-	22,080	**22,080**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	138	-	**138**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	57,538	12,410	**69,948**	-	-	-	22,080	**22,080**
Program net income (loss)	426,400	-	(42,205)	246,900	**631,095**	880,454	860,000	-	339,032	**2,079,486**
Transfers	-	(24,500)	-	-	**(24,500)**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	1,573,600	1,218,600	42,292	187,933	**3,022,425**	2,119,546	340,000	-	242,427	**2,701,973**
Ending	$ 2,000,000	$ 1,194,100	$ 87	$ 434,833	**$ 3,629,020**	$ 3,000,000	$ 1,200,000	$ -	$ 581,459	**$ 4,781,459**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Solid Oxide Fuel Cells					Childhood Neurotherapeutics				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ 2,100,000	$ -	$ -	$ -	**$ 2,100,000**	$ 1,925,322	$ -	$ -	$ -	**$ 1,925,322**
Non-state matching funds	-	-	202,551	-	**202,551**	-	-	-	-	**-**
Total contribution revenue	2,100,000	-	202,551	-	**2,302,551**	1,925,322	-	-	-	**1,925,322**
Investment Income										
Realized gain (loss)	-	-	-	-	**-**	-	-	-	104,304	**104,304**
Unrealized gain (loss)	-	-	-	-	**-**	-	-	-	944	**944**
Endowment income	-	-	-	128,292	**128,292**	-	-	-	165,433	**165,433**
Total investment income	-	-	-	128,292	**128,292**	-	-	-	270,681	**270,681**
Total revenue	2,100,000	-	202,551	128,292	**2,430,843**	1,925,322	-	-	270,681	**2,196,003**
Expenditures										
Personal services	-	-	156,171	-	**156,171**	-	-	-	-	**-**
Fringe	-	-	9,074	-	**9,074**	-	-	-	-	**-**
Travel	-	-	11,785	-	**11,785**	-	-	-	-	**-**
Supplies	-	-	10,770	-	**10,770**	-	-	-	-	**-**
Contractual	-	-	704	-	**704**	-	-	-	-	**-**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	-	**-**	-	-	-	37,488	**37,488**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	188,504	-	**188,504**	-	-	-	37,488	**37,488**
Program net income (loss)	2,100,000	-	14,047	128,292	**2,242,339**	1,925,322	-	-	233,193	**2,158,515**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	800,000	800,000	(14,047)	121,954	**1,707,907**	3,074,678	2,500,000	-	153,959	**5,728,637**
Ending	$ 2,900,000	$ 800,000	$ -	$ 250,246	**$ 3,950,246**	$ 5,000,000	$ 2,500,000	$ -	$ 387,152	**$ 7,887,152**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Rehabilitation and Reconstruction Science					Strategic Approaches to Electricity Production from Coal				
	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	$ 1,000,000	$ -	$ -	$ -	**$ 1,000,000**	$ 1,000,000	$ -	$ -	$ -	**$ 1,000,000**
Non-state matching funds	-	-	500,000	-	**500,000**	-	-	-	-	**-**
Total contribution revenue	1,000,000	-	500,000	-	**1,500,000**	1,000,000	-	-	-	**1,000,000**
Investment Income										
Realized gain (loss)	-	-	-	14,770	**14,770**	-	-	-	137,928	**137,928**
Unrealized gain (loss)	-	-	-	(12,930)	**(12,930)**	-	-	-	309,121	**309,121**
Endowment income	-	-	-	56,269	**56,269**	-	-	-	210,057	**210,057**
Total investment income	-	-	-	58,109	**58,109**	-	-	-	657,106	**657,106**
Total revenue	1,000,000	-	500,000	58,109	**1,558,109**	1,000,000	-	-	657,106	**1,657,106**
Expenditures										
Personal services	-	-	37,500	-	**37,500**	-	-	85,088	20,000	**105,088**
Fringe	-	-	-	-	**-**	-	-	13,284	4,325	**17,609**
Travel	-	-	2,262	-	**2,262**	-	-	16,504	4,627	**21,131**
Supplies	-	-	-	-	**-**	-	-	43,475	53	**43,528**
Contractual	-	-	-	-	**-**	-	-	4,013	-	**4,013**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	3,340	-	**3,340**
Indirect cost recovery	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	2,077	**2,077**	-	-	-	36,020	**36,020**
Legal	-	-	6,818	-	**6,818**	-	-	-	-	**-**
Other	-	-	10,117	-	**10,117**	-	-	-	19,550	**19,550**
Equipment	-	-	-	-	**-**	-	-	316,750	-	**316,750**
Total expenditures	-	-	56,697	2,077	**58,774**	-	-	482,454	84,575	**567,029**
Program net income (loss)	1,000,000	-	443,303	56,032	**1,499,335**	1,000,000	-	(482,454)	572,531	**1,090,077**
Transfers	-	600,000	(600,000)	-	**-**	-	-	(500,000)	500,000	**-**
Cumulative Program Net Income										
Beginning	1,000,000	-	897,614	27,244	**1,924,858**	4,000,000	2,000,000	2,802,937	365,382	**9,168,319**
Ending	$ 2,000,000	$ 600,000	$ 740,917	$ 83,276	**$ 3,424,193**	$ 5,000,000	$ 2,000,000	$ 1,820,483	$ 1,437,913	**$ 10,258,396**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Healthcare Quality					Senior SMART™ Center				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ -	$ -	$ -	$ -	**$ -**
Non-state matching funds	-	-	2,970,315	-	**2,970,315**	-	-	-	-	**-**
Total contribution revenue	-	-	2,970,315	-	**2,970,315**	-	-	-	-	**-**
Investment Income										
Realized gain (loss)	-	-	-	82,606	**82,606**	-	-	-	-	**-**
Unrealized gain (loss)	-	-	-	748	**748**	-	-	-	-	**-**
Endowment income	-	-	-	215,065	**215,065**	-	-	-	102,872	**102,872**
Total investment income	-	-	-	298,419	**298,419**	-	-	-	102,872	**102,872**
Total revenue	-	-	2,970,315	298,419	**3,268,734**	-	-	-	102,872	**102,872**
Expenditures										
Personal services	-	-	337,210	25,000	**362,210**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	3,050	-	**3,050**	-	-	-	-	**-**
Supplies	-	-	1,758	-	**1,758**	-	-	-	-	**-**
Contractual	-	-	622,133	-	**622,133**	-	-	-	-	**-**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	29,690	**29,690**	-	-	-	-	**-**
Legal	-	-	100,248	-	**100,248**	-	-	-	-	**-**
Other	-	-	39,345	675	**40,020**	-	-	-	-	**-**
Equipment	-	-	1,866,571	-	**1,866,571**	-	-	-	-	**-**
Total expenditures	-	-	2,970,315	55,365	**3,025,680**	-	-	-	-	**-**
Program net income (loss)	-	-	-	243,054	**243,054**	-	-	-	102,872	**102,872**
Transfers	-	-	-	-	**-**	-	(50,000)	50,000	-	**-**
Cumulative Program Net Income										
Beginning	5,000,000	2,000,000	-	93,906	**7,093,906**	2,000,000	50,000	2,000,000	125,244	**4,175,244**
Ending	$ 5,000,000	$ 2,000,000	$ -	$ 336,960	**$ 7,336,960**	$ 2,000,000	$ -	$ 2,050,000	$ 228,116	**$ 4,278,116**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Nanoenvironmental Research and Risk Assessment					Nuclear Science and Energy				
	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	$ 3,000,000	$ -	$ -	$ -	**$ 3,000,000**	$ 1,417,575	$ -	$ -	$ -	**$ 1,417,575**
Non-state matching funds	-	1,000,000	1,489,251	-	**2,489,251**	-	110,000	1,171,592	-	**1,281,592**
Total contribution revenue	3,000,000	1,000,000	1,489,251	-	**5,489,251**	1,417,575	110,000	1,171,592	-	**2,699,167**
Investment Income										
Realized gain (loss)	-	-	-	63,948	**63,948**	-	-	-	3,169	**3,169**
Unrealized gain (loss)	-	-	-	143,320	**143,320**	-	-	-	29	**29**
Endowment income	-	-	-	17,698	**17,698**	-	-	-	359	**359**
Total investment income	-	-	-	224,966	**224,966**	-	-	-	3,557	**3,557**
Total revenue	3,000,000	1,000,000	1,489,251	224,966	**5,714,217**	1,417,575	110,000	1,171,592	3,557	**2,702,724**
Expenditures										
Personal services	-	-	413,883	-	**413,883**	-	-	431,702	-	**431,702**
Fringe	-	-	52,670	-	**52,670**	-	-	64,678	-	**64,678**
Travel	-	-	12,517	-	**12,517**	-	-	31,045	-	**31,045**
Supplies	-	-	99,130	-	**99,130**	-	-	86,577	-	**86,577**
Contractual	-	-	266,236	-	**266,236**	-	-	39,007	-	**39,007**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	60,252	-	**60,252**	-	-	25,934	-	**25,934**
Indirect cost recovery	-	-	80,009	-	**80,009**	-	-	286,997	-	**286,997**
Administrative fees	-	-	-	16,700	**16,700**	-	-	-	573	**573**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	3,566	-	**3,566**
Equipment	-	-	495,143	-	**495,143**	-	-	-	-	**-**
Total expenditures	-	-	1,479,840	16,700	**1,496,540**	-	-	969,506	573	**970,079**
Program net income (loss)	3,000,000	1,000,000	9,411	208,266	**4,217,677**	1,417,575	110,000	202,086	2,984	**1,732,645**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	-	-	-	-	**-**	-	-	-	-	**-**
Ending	$ 3,000,000	$ 1,000,000	$ 9,411	$ 208,266	**$ 4,217,677**	$ 1,417,575	$ 110,000	$ 202,086	$ 2,984	**$ 1,732,645**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Nuclear Science Strategies					Healthful Lifestyles				
	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**	State Endowment	Non-State Endowment	Non-State Expendable	Endowment Earnings	**Total**
Contribution Revenue										
State funds	$ -	$ -	$ -	$ -	**$ -**	$ 3,000,000	$ -	$ -	$ -	**$ 3,000,000**
Non-state matching funds	-	10,000	-	-	**10,000**	-	-	-	-	**-**
Total contribution revenue	-	10,000	-	-	**10,000**	3,000,000	-	-	-	**3,000,000**
Investment Income										
Realized gain (loss)	-	-	-	6,014	**6,014**	-	-	-	17,985	**17,985**
Unrealized gain (loss)	-	-	-	13,479	**13,479**	-	-	-	60,352	**60,352**
Endowment income	-	-	-	1,665	**1,665**	-	-	-	86,685	**86,685**
Total investment income	-	-	-	21,158	**21,158**	-	-	-	165,022	**165,022**
Total revenue	-	10,000	-	21,158	**31,158**	3,000,000	-	-	165,022	**3,165,022**
Expenditures										
Personal services	-	-	-	-	**-**	-	-	-	-	**-**
Fringe	-	-	-	-	**-**	-	-	-	-	**-**
Travel	-	-	-	-	**-**	-	-	-	-	**-**
Supplies	-	-	-	-	**-**	-	-	-	-	**-**
Contractual	-	-	-	-	**-**	-	-	-	-	**-**
Tuition assistance	-	-	-	-	**-**	-	-	-	-	**-**
Fixed charges	-	-	-	-	**-**	-	-	-	-	**-**
Indirect cost recovery	-	-	-	-	**-**	-	-	-	-	**-**
Administrative fees	-	-	-	1,571	**1,571**	-	-	-	11,487	**11,487**
Legal	-	-	-	-	**-**	-	-	-	-	**-**
Other	-	-	-	-	**-**	-	-	-	-	**-**
Equipment	-	-	-	-	**-**	-	-	-	-	**-**
Total expenditures	-	-	-	1,571	**1,571**	-	-	-	11,487	**11,487**
Program net income (loss)	-	10,000	-	19,587	**29,587**	3,000,000	-	-	153,535	**3,153,535**
Transfers	-	-	-	-	**-**	-	-	-	-	**-**
Cumulative Program Net Income										
Beginning	-	100,000	-	-	**100,000**	-	900,000	-	-	**900,000**
Ending	$ -	$ 110,000	$ -	$ 19,587	**$ 129,587**	$ 3,000,000	$ 900,000	$ -	$ 153,535	**$ 4,053,535**

See notes to financial statements.

SOUTH CAROLINA CENTERS OF ECONOMIC EXCELLENCE
UNIVERSITY OF SOUTH CAROLINA
PROGRAM REVENUES AND EXPENDITURES
YEAR ENDING JUNE 30, 2011

	Data Analysis, Simulation, Imaging, and Visualization					Total - University of South Carolina				
	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	$ 2,000,000	$ -	$ -	$ -	**$ 2,000,000**	$ 17,406,613	$ -	$ -	$ -	**$ 17,406,613**
Non-state matching funds	-	-	806,398	-	**806,398**	-	2,121,305	7,875,075	-	**9,996,380**
Total contribution revenue	2,000,000	-	806,398	-	**2,806,398**	17,406,613	2,121,305	7,875,075	-	**27,402,993**
Investment Income										
Realized gain (loss)	-	-	-	-	**-**	-	-	-	813,043	**813,043**
Unrealized gain (loss)	-	-	-	-	**-**	-	-	-	1,335,909	**1,335,909**
Endowment income	-	-	-	-	**-**	-	-	-	2,089,223	**2,089,223**
Total investment income	-	-	-	-	**-**	-	-	-	4,238,175	**4,238,175**
Total revenue	2,000,000	-	806,398	-	**2,806,398**	17,406,613	2,121,305	7,875,075	4,238,175	**31,641,168**
Expenditures										
Personal services	-	-	80,872	-	**80,872**	-	-	1,838,594	237,381	**2,075,975**
Fringe	-	-	10,753	-	**10,753**	-	-	187,461	20,536	**207,997**
Travel	-	-	-	-	**-**	-	-	147,799	4,627	**152,426**
Supplies	-	-	2,561	-	**2,561**	-	-	312,088	13,725	**325,813**
Contractual	-	-	130,000	-	**130,000**	-	-	1,084,865	21,235	**1,106,100**
Tuition assistance	-	-	-	-	**-**	-	-	13,255	1,828	**15,083**
Fixed charges	-	-	-	-	**-**	-	-	89,526	-	**89,526**
Indirect cost recovery	-	-	40,408	-	**40,408**	-	-	525,234	-	**525,234**
Administrative fees	-	-	-	-	**-**	-	-	-	234,407	**234,407**
Legal	-	-	-	-	**-**	-	-	107,066	-	**107,066**
Other	-	-	3,015	-	**3,015**	-	-	87,328	29,314	**116,642**
Equipment	-	-	538,789	-	**538,789**	-	-	3,362,803	23,286	**3,386,089**
Total expenditures	-	-	806,398	-	**806,398**	-	-	7,756,019	586,339	**8,342,358**
Program net income (loss)	2,000,000	-	-	-	**2,000,000**	17,406,613	2,121,305	119,056	3,651,836	**23,298,810**
Transfers	-	-	-	-	**-**	-	525,500	(1,050,000)	500,000	**(24,500)**
Cumulative Program Net Income										
Beginning	-	1,203,907	-	-	**1,203,907**	33,910,962	16,122,578	5,781,058	2,509,653	**58,324,251**
Ending	$ 2,000,000	$ 1,203,907	$ -	$ -	**$ 3,203,907**	$ 51,317,575	$ 18,769,383	$ 4,850,114	$ 6,661,489	**$ 81,598,561**

See notes to financial statements.

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.

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.

Notes to Financial Statements

Note 2. Summary of Significant Accounting Policies (Continued)

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, 2011, cash and investments maintained by the research institutions for program purposes was as follows:

Clemson University	$ 79,906,004
Medical University of South Carolina	115,593,462
University of South Carolina	81,598,561
Total	$ 277,098,027

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, 2011.

		Federal Grants used as Non-State Matching Funds	
Institution	Proposal	Total Qualifiying As Non-State Match	Amount Used As Non-State Match
Clemson	Optical Materials	$ 772,961	$ 772,961
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	268,520
MUSC	Advanced Tissue Biofabrication	1,739,507	1,450,042
USC	Nanostructures	1,444,820	1,444,820
USC	Brain Imaging	1,336,000	1,336,000
USC	Polymer Nanocomposites	2,020,110	1,868,060
USC	Hydrogen Fuel Cell Economy	661,451	661,451
USC	Renewable Fuel Cells	970,516	970,516
USC	Solid Oxide Fuel Cells	1,256,609	502,530
USC	Childhood Neurotherapeutics	1,243,106	1,168,428
USC	Data Analysis	533,444	533,444
		$ 37,416,306	$ 27,343,260

Note 5. Subsequent Events

Subsequent events have been evaluated through November 18, 2011, the date these financial statements were available to be issued. There were no material events that required recognition or additional disclosure in these financial statements.

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INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE AND ON INTERNAL CONTROL OVER FINANCIAL REPORTING 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, 2011, and have issued our report thereon dated November 18, 2011. 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.*

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.

Derrick Stubbs + Stith LLP

November 18, 2011