



SmartState
SC Centers of Economic Excellence

Research Stars



RESEARCH • INNOVATION • INVESTMENT

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www.smartstatesc.org

The Mission Statement of South Carolina's SmartState Program

The SmartState Program serves the public interest by creating incentives for the state's research universities, in cooperation with other institutions of higher education in the state, to raise capital from non-state sources to fund endowments for specialized research professorships.

These professorships in turn serve as the nucleus for unique, university-based research centers which cultivate critical, public-private industrial partnerships, expand the state's knowledge base, create well-paying jobs, enhance economic opportunities, and improve the quality of life for the people of South Carolina.

South Carolina's Major Research Universities



South Carolina's Economy Thrives on Innovation and Entrepreneurship.

The State's Visionary SmartState Program Is Leading the Way.

The SmartState Program was created by the South Carolina General Assembly in 2002. The visionary program has enabled the State of South Carolina to recruit top researchers, engineers, and scientists from across the globe in industries critical to the state, the nation and to the world at large.

These “research stars” lead SmartState Centers of Economic Excellence, world-class research, innovation and education programs located at Clemson University, the Medical University of South Carolina and the University of South Carolina. The research stars are igniting the state in these ways:

- Creating innovative technology for commercialization,
- Educating the next generation of leaders, entrepreneurs, physicians and researchers;
- Consulting with and performing collaborative research with businesses; and
- Contributing mightily to the state's economy and quality of life.

The SmartState Program has had a return on investment of \$2.8 billion, attracted investment from more than 40 companies and foundations, resulted in nearly 100 startup companies and corporate relocations, and is responsible for the creation of more than 15,000 high-paying jobs. And, the SmartState Program and its research stars are just getting started!

The SmartState Program's Research Stars Align with Six Industry Clusters.

74 of the Brightest Minds in the World Call South Carolina Home.

SmartState Program has 51 industry-focused Centers of Economic Excellence. What is unique about the SmartState Centers is that they are not always specific to one university. Centers can include research stars—the SmartState Endowed Chairs—from multiple universities whose research interests complement each others, leveraging the impact and making this a true state effort to benefit all of South Carolina.

Research stars collaborate with colleagues in other SmartState Centers as well as with industry on specific research and development projects. They also mentor and teach undergraduate, graduate and doctoral students, creating a rich brain trust and future workforce. SmartState Endowed Chairs and their Centers fall into these six industry clusters:



**Advanced
Materials &
Nanotechnology**



**Automotive &
Transportation**



**Biomedical
Research**



**Energy &
Alternative
Fuels
Research**



**Information
Science
Research**



**Pharmaceutical
Research**



Dr. John Ballato

J.E. Serrine Textile Foundation

Endowed Chair in Optical Fiber

SmartState Center for Optical Materials/Photonics

Clemson University

■ Nearly 30 years advancing the science, engineering, education, and application of light; 400 technical articles and 34 U.S. and foreign patents.

■ Established the premiere academic optical fiber fabrication and materials research capability in the United States through COMSET at Clemson University.

■ Fellow, Institute of Electrical and Electronics Engineers, Optical Society of America, International Society of Optical Engineering, and American Ceramic Society; elected member, World Academy of Ceramics and U.S. National Academy of Inventors.



Dr. Brian Benicewicz

Endowed Chair in Polymer Nanocomposites

SmartState Center for Polymer Nanocomposites

University of South Carolina

- Specializes in high-temperature fuel cell membranes and hydrogen pumps, polymer synthesis, designed chemistry on the surface of nanoparticles, and polymer nanocomposites.
- Works with South Carolina and international industries to develop new products and improve existing ones.
- Research supported by National Science Foundation, U.S. Department of Energy, U.S. Department of Defense, and various industries.
- Developed-high temperature fuel cell membrane commercialized by BASF and used in devices for portable and stationary power devices, and hydrogen purification and recycling applications.



Dr. Jamie Lead

Endowed Chair in Nanoenvironmental Science

*SmartState Center for Environmental
Nanoscience & Risk*

University of South Carolina

■ Research focus is to understand nanoscale phenomena in the environment, including natural nanomaterials, manufactured nanomaterials, and the interaction of natural and manufactured nanomaterials.

■ Fellow, Royal Society of Chemistry, the Institute of Nanotechnology and the International Union of Pure and Applied Chemistry.

■ Former director of the Facility for the Environmental Nanoparticle Analysis and Characterization and professor in Environmental Nanoscience, University of Birmingham, United Kingdom.



Dr. Marek W. Urban

*J.E. Serrine Textile Foundation Endowed Chair
in Advanced Fiber-Based Materials*

*SmartState Center for Advanced
Fiber-Based Materials*

Clemson University

- Internationally recognized for groundbreaking studies on self-healing and stimuli-responsive polymers and materials.
- Research supported by National Science Foundation, U.S. Department of Energy, U.S. Department of Defense, and various industries.
- Recipient of numerous awards, including Roon Foundation Award, Megger's Award, Board of Trustees Award for Excellence, Chemical Pioneer Award; and University Research, Scholarship and Artistic Achievement Award.
- Fellow, Royal Society of Chemistry, the American Chemical Society PMSE Division, and the American Institute of Chemists.



Dr. Zoran Filipi

Timken Endowed Chair in Vehicle System Design

*SmartState Center for Automotive
Design & Development*

Clemson University

- A leader in the field of advanced engine concepts and alternative powertrains, including electric and hydraulic hybrids.
- Research addresses energy security and greenhouse gas emissions and develops paths towards achieving sustainable transportation systems.
- Collaborated with South Carolina startup company EcoDual on natural gas for heavy-duty engines; developed a major proposal for a U.S. original equipment manufacturer; and launched three vehicle hybridization research projects.
- Fellow, Society of Automotive Engineers (SAE); recipient, SAE Forest R. McFarland Award, IMechE Donald Julius Groen Award; and editor-in-chief of the *SAE Journal of Alternative Powertrains*.



Dr. Venkat N. Krovi

*Michelin Endowed Chair in
Vehicle Electronic Systems Integration
SmartState Center for
Vehicle Electronic Systems Integration
Clemson University*

- Research at the Clemson University International Center for Automotive Research (CU-ICAR) focuses on empowering human-autonomy synergy for on-road, off-road and manufacturing shop floor applications.
- Life-cycle treatment methods (design, modeling, analysis, control, implementation and verification) for intra-vehicle and vehicle-to-x (v2x) automation to enhance safety, performance, reliability, and robustness.
- Fellow, American Society of Mechanical Engineers, editor-in-chief of *ASME Journal of Mechanisms and Robotics*; member, Executive Committee of IEEE Robotics and Automation Society; and leadership for the ARM ManufacturingUSA Institute.



Dr. Scott Mason

Fluor Endowed Chair in

Supply Chain Optimization & Logistics

SmartState Center for

Supply Chain Optimization & Logistics

Clemson University

- An expert in the modeling and analysis of supply chain, manufacturing, services, and renewable energy systems.
- Formulate and solve strategic supply chain models for the United States' tritium supply.
- Developing novel optimization models and solution methodologies for routing fleets of unmanned vehicles tasked with target detection and information collection as well as seeking ways to minimize economic losses resulting from repairing and resuming operation of a transportation system within a major city due to major climatic events.
- Awarded over \$6 million in research funding and authored some 100 refereed articles and papers.



Dr. Laine Mears

*BMW Endowed Chair in Automotive Manufacturing
SmartState Center for Automotive Manufacturing
Clemson University*

- Specializes in control systems for automotive manufacturing processes, especially model-based control for improving quality and throughput for machining, forming, joining, and assembly of vehicles, with extensive research grants from government and industry.
- Leads the Clemson Technology-Human Integrated Knowledge, Education and Research (THINKER), a five-year, \$3 million National Science Foundation program on integrating humans to the Internet of Things.
- Head the Clemson Vehicle Assembly Center, an exploratory factory for assembly operations spanning consumer goods, aerospace subassemblies, and full vehicle building for education and research.
- Fellow, SME and American Society of Mechanical Engineers; editor-in-chief, *SME Manufacturing Letters Journal*; recipient of numerous awards such as the Society of Automotive Engineers Ralph R. Teetor Educational Award and the South Carolina Governor's Young Researcher Award for Excellence.



Dr. Chris Paredis

*BMW Endowed Chair in
Automotive Systems Integration
SmartState Center for
Automotive Systems Integration
Clemson University*

- Research focuses on systems engineering and design, combining aspects of decision theory, information technology, simulation, and systems theory to support the design of complex engineered systems.
- Establishing an internationally recognized research and education program at CU-ICAR around the design and realization of complex systems, with the automobile as the demonstration platform.
- Fellow, American Society of Mechanical Engineers (ASME) and co-editor of the ASME book series, *Advances in Computers and Information in Engineering Research*.
- Prior to joining Clemson University, Paredis worked with the National Science Foundation (NSF), where he served as the program director for Engineering and Systems Design, Systems Science and Design of Engineering Material Systems.



Dr. Robert J. Adams

Endowed Chair in Stroke

SmartState Center for Stroke

Medical University of South Carolina

- Established a network of 30 sites in South Carolina that receive expert stroke consultation via telemedicine. Since 2008, REACH MUSC has facilitated emergency care of over 20,000 South Carolinians in the network, greatly improving access to expert stroke care in rural areas, particularly among African Americans.
- In 2011, began developing a smaller, less expensive telemedicine platform to be worn by medical technicians. Applications include home care, tele-presentation of stroke patients from the ambulance, use in PTSD, and by the U.S. Army for treating head injuries. Commercialization of the now patented platform was made possible with support from the SmartState Center for Stroke, SCRA and private investment.
- Research in the prevention of stroke in children with sickle cell disease (SCD). The so-called STOP protocol is used in the United States and now in Sub-Saharan Africa where most children with SCD live. It is responsible for an almost 70 percent reduction in black-white stroke disparities in children.



Dr. Leonardo Bonilha

Endowed Chair in Brain Imaging

SmartState Center for Brain Imaging

Medical University of South Carolina

- Research focuses on understanding structural and functional network adaptations to brain injury, particularly regarding language impairments (aphasia) after stroke and its recovery.
- Studies neuronal networks associated with epilepsy and its response to treatment.
- Collaborated with neuroscientists and SmartState Endowed Chairs at the University of South Carolina and the Medical University of South Carolina (MUSC) on a study on aphasia that led to a large clinical trial and published in the *Journal of Neurology* in 2018.
- Research is supported by the National Institutes of Health and the American Heart Association.



Dr. John Brooks

*Endowed Chair in Effectiveness Research
in Orthopedics*

*SmartState Center for Effectiveness
Research in Orthopedics*

University of South Carolina

- Health economist who measures treatment effectiveness using observational healthcare databases.
- Innovative comparative effectiveness research in orthopedics assesses whether the treatment mix across patients with musculoskeletal conditions can be changed to improve outcomes or lower costs.
- Worked with Prisma Health to develop the national Orthopedic Patient Data Repository that follows patients, collecting information on patient preferences and beliefs, diagnostic information relevant to treatment choice and outcomes, treatments and patient-centered outcomes.
- Created the Secondary School Athlete Repository to prevent and reduce injuries, improve injury treatment, and reduce related costs to school districts.



Dr. Manuel Casanova

*Endowed Chair in Translational Clinical Research
SmartState Center for Childhood Neurotherapeutics
Medical University of South Carolina*

- Recent research projects have examined brain abnormalities in patients with neurodevelopmental disorders, including autism spectrum disorders and dyslexia.
- His studies of the autonomic nervous system in autistic individuals found that the sympathetic branch of the autonomic nervous system is overactive in autistic children, leading to higher levels of anxiety. He believes transcranial magnetic stimulation and neurofeedback can reduce autonomic dysfunction that is linked to certain foods.
- Founding board member, National Alliance for Autism Research (Autism Speaks) and the Autism Tissue Board. Member, multiple boards of directors or scientific advisory boards, including the Autism Research Institute, Generation Rescue, On Mental Health, Families for Effective Autism Treatment, and Clearly Present Foundation; and is on the editorial boards of 15 medical journals.
- Has published over 200 articles in peer-reviewed journals and 85 book chapters.



Dr. Kenneth R. Catchpole

*Endowed Chair in Clinical Practice & Human Factors
SmartState Center for Health Facilities Design & Testing
Medical University of South Carolina*

- Use analytical methods to understand how individuals, teams, tasks, technologies, environments, and organizational configurations contribute to clinical performance; apply and evaluate improvements.
- Work closely with physicians, nurses, and other health professionals to identify needs, understand complex problems, develop solutions, and translate findings into practice.
- Sample projects include improving information sharing for trauma and transplant patients; training protective equipment protocols for highly infectious diseases; designing ambulatory surgery operating rooms to maximize efficiency, function, and safety; and reducing anesthesia medication errors.
- Awarded over \$4.5 million in research grants and published some 80 papers.



Dr. Marc I. Chimowitz

*Countess Alicia Palozzi Chair
in Translational Neurology*

SmartState Center for Stroke

Medical University of South Carolina

- Designed large multicenter clinical trials to test treatments for preventing stroke in patients with atherosclerotic intracranial arterial stenosis, one of the most common causes of stroke worldwide.
- Over the last 17 years, has led three large, consecutive NIH/NINDS-funded multicenter clinical studies that have changed the standard of care worldwide for patients with intracranial atherosclerosis and have guided FDA and Medicare decisions regarding the approval and reimbursement of stenting for this disease.
- Currently collaborating with other investigators at the Medical University of South Carolina and the University of Florida in designing a large clinical trial that will include genetic testing and evaluate novel anti-clotting medications for preventing stroke in patients with intracranial atherosclerosis.



Dr. Cynthia Corbett

Endowed Chair in Chronic Care Management

*SmartState Center for Clinical Effectiveness
& Patient Safety*

University of South Carolina

- Research focuses on strategies to improve chronic illness management and patient safety.
- The American Society of Health System Pharmacists' Research and Education Foundation, the Robert Wood Johnson Foundation, the Agency for Healthcare Research and Quality, National Institutes of Health, and the Patient Centered Outcomes Research Institute (PCORI) have funded her medication safety research.
- Principal investigator on a study funded by the National Institute on Aging evaluating the effect of a chronic care management intervention on participants' abilities to engage in self-management and on their pattern of acute care use. She and her team are also evaluating a medication safety tool kit developed from a PCORI-funded study.
- Co-authored more than 60 peer-reviewed publications.



Dr. Christopher W. Cowan

William E. Murray Endowed Chair in Neuroscience

SmartState Center for Neurosciences

Medical University of South Carolina

- Study multiple brain molecules that are recruited by illicit drug use and participate in maladaptive brain changes that are associated with drug addiction and the long-lasting propensity for relapse.
- Research has uncovered key brain development roles for several genes that are linked to risk for multiple neurodevelopmental disorders, including autism, intellectual disability and schizophrenia in humans.
- Recipient of several major research grants from the National Institute of Mental Health and National Institute on Drug Abuse.



Dr. Nancy DeMore

BMW Chair in Cancer Research

SmartState Center for Tobacco-Related Malignancy

Medical University of South Carolina

- Research focus is on angiogenesis as it relates to tumor progression and development of novel angiogenesis inhibitors.
- Characterized the role of SFRP2 in angiogenesis and developed a monoclonal antibody that inhibits tumor growth in pre-clinical models. This research is being translated into the clinic.
- Clinical interests at the MUSC Hollings Cancer Center focus on all aspects of breast cancer, including breast cancer in young women, locally advanced and inflammatory breast cancer, breast sarcomas, and oncoplastic surgery.
- Co-authored more than 40 peer-reviewed publications.



Dr. Thomas G. DiSalvo

Volpe Endowed Chair in Cardiovascular Biomarker Development for Diagnosis & Prevention

SmartState Center for Molecular Proteomics in Cardiovascular Disease & Prevention

Medical University of South Carolina

- Nationally known for his research in heart failure.
- Research focuses on the prognosis of advanced heart failure, clinical outcomes of heart failure, selected aspects of the clinical pathophysiology of heart failure, including epigenetics, heart transplantation and cardiovascular health services.
- Author of numerous book chapters and more than 80 peer-reviewed articles in medical journals.
- Serves as the director of the Medical University of South Carolina's Division of Cardiology.



Dr. Richard Drake

Endowed Chair in Proteomics

SmartState Center for Proteomics

Medical University of South Carolina

- Expert in the proteomics analysis of clinical tissue and fluid samples related to prostate, kidney, colon, and breast cancers; developing new assays for imaging the uptake and distribution of drugs in organs and tumors.
- Director, MUSC Proteomic Center, one of the most advanced, state-of-the-art proteomic mass spectrometry resources in South Carolina.
- Extensive translational center research experience and involvement in sample biorepositories.
- Economic development emphasis on generating biomedical-related biomarker tests for cancer, neurological and metabolic diseases.



Dr. Stephen Duncan

*Endowed Chair in Regenerative
Medicine & Cell Biology*

*SmartState Center for Regenerative Medicine
Medical University of South Carolina*

■ The number of livers for transplant is limited, while demand continues to increase. It has been proposed that cell transplant therapy may offer an alternative to organ transplant.

■ Research focuses on the use of mice and stem cells to understand the contribution of transcription factors to embryonic development and function of the liver, pancreas and heart.

■ Has developed technologies to control the differentiation of stem cells into cells with hepatocyte (liver cell) characteristics. He is also using these cells to model inborn errors in liver metabolism and as a platform for drug discovery.

■ Chair, Medical University of South Carolina's Department of Regenerative Medicine and Cell Biology.



Dr. Carol Feghali-Bostwick

*Kitty Trask-Holt Endowed Chair
for Scleroderma Diseases*

*SmartState Center for Inflammation
& Fibrosis Research*

Medical University of South Carolina

- World-renowned researcher in fibrosis and systemic sclerosis who continues to lead the discovery of anti-fibrotic molecules.
- Holds several patents describing potential therapies for organ fibrosis.
- Established a human tissue organ model for testing pro- and anti-fibrotic factors.
- Has received awards recognizing her mentoring and innovation.



Dr. Marvella Ford

Endowed Chair in Cancer Disparities

*SmartState Center for Prostate
Cancer Disparities*

Medical University of South Carolina

- Recognized expert in health disparities and cancer prevention research.
- The first SmartState Endowed Chair at South Carolina State University, a historically black university. Ford also has a faculty appointment at the Medical University of South Carolina.
- Leads research addressing prostate cancer disparities in South Carolina, where African-American men are three times more likely to die from this disease than whites. She is developing and testing interventions to improve prostate cancer outcomes for African-American men.
- Since joining MUSC in 2005, Ford has been awarded more than \$27.5 million in grants from the National Cancer Institute, National Institute on Minority Health and Health Disparities, U.S. Department of Defense, and Centers for Disease Control and Prevention.



Dr. Julius Fridriksson

Endowed Chair in SmartBRAIN™

SmartState Center for SENIORSMART®

University of South Carolina

■ Internationally renowned authority on aphasia, a communication disorder resulting from stroke or a brain injury that impacts a person's ability to speak, listen, read and/or write, but does not affect intelligence.

■ Research focuses on cognitive health and post-stroke communication.

■ Directs the Aphasia Laboratory at the University of South Carolina Arnold School of Public Health, which houses the Center for Aphasia Recovery—an \$11.1 million project funded by National Institutes of Health.

■ Serves as an editor for a new journal, *Neurobiology of Language* sponsored by the Society for the Neurobiology of Language and is funded by the National Science Foundation and MIT Libraries.



Dr. Bruce Z. Gao

Endowed Chair in Biofabrication Engineering

SmartState Center for Advanced

Tissue Biofabrication

Clemson University

- Studying cell-cell interactions under biofabricated microenvironments, concentrating on cardiac, neuronal, cancer, and stem cells.
- Developing biomedical research devices, such as laser-guidance cell-micropatterning system, nonlinear and coherence optics-based bioimaging system, and microfluidics-based biochips.
- Funded by the National Science Foundation, National Institutes of Health and other government agencies.
- Awarded over \$5 million in research grants and published over 100 peer-reviewed manuscripts.



Dr. Jeremy L. Gilbert

*Hansjörg Wyss Endowed Chair in Bioengineering
SmartState Center for Regenerative Medicine
Clemson University*

- Research interests involve the study of biomaterials science, emphasizing the electrochemical behavior of medical alloys and their interaction with the biological system; the role of reduction reactions on biocompatibility; the mechanical-electrochemical interactions at metal-oxide-solution interfaces; and the development of novel mechanical, electrochemical, and polymeric test methodologies for orthopedic, spinal, dental, and cardiovascular medical devices and biomaterials.
- Member, Medical Devices Committee of the Food and Drug Administration for Orthopedic and Rehabilitation Devices.
- Holds 11 patents with six pending; published over 175 peer-reviewed manuscripts and book chapters.
- Consults with medical device companies as a technical engineering expert.



Dr. Chanita Hughes-Halbert

*AT&T Distinguished Endowed Chair
in Cancer Equity in Cancer Disparities*

*SmartState Center for Prostate Cancer Disparities
Medical University of South Carolina*

- National expert in minority health, health equity, and cancer prevention and control.
- Conducts trans-disciplinary research to translate findings about determinants of minority health and health disparities into sustainable interventions in community and clinical settings.
- Collaborates with academic and community-based organizations to enhance the capacity and impact of public health strategies, health promotion programs, and clinic-based intervention.
- Develops and evaluates programs to enhance workforce development and diversity.



Dr. Michael G. Janech

Endowed Chair in Bioinformatics

SmartState Center for Marine Genomics

Medical University of South Carolina

■ Research focuses on mass spectrometry as an analytical tool to study comparative mechanisms underlying physiology and pathophysiology at the level of proteins. These studies are complemented by the use of proteomics, which is the study of many proteins at one time and their post-translational modifications.

■ His laboratory is a lead participant in the NIST COMPARE project, which is a multi-institutional effort to characterize proteome differences between mammals to identify proteins that correlate with unique physiological adaptations.

■ Co-author of more than ten peer-reviewed publications in scientific journals.



Dr. Anjali Joseph

*Endowed Chair in Architecture
& Health Research*

*SmartState Center for Health
Facilities Design & Testing
Clemson University*

- An internationally recognized expert in research on the design of healthcare environments to improve patient safety and healthcare quality.
- Research focuses on developing tools and resources to support translation of built environment research into practical application.
- Leads a multi-disciplinary patient-safety learning lab on safer operating room design in collaboration with the Medical University of South Carolina that resulted in the design of new ambulatory surgical centers.
- Builds collaborations and partnerships with academic and healthcare organizations as well as industry partners to conduct meaningful applied research on healthcare environments.



Dr. Leslie A. Lenert

Endowed Chair in Medical Bioinformatics

SmartState Center for Healthcare Quality

Medical University of South Carolina

- Primary care physician with a 20-year history of research and development work in biomedical informatics and predictive analytics, pioneering the development of web-based systems for patients and online research studies.
- Changing what is possible by helping the Medical University of South Carolina create the infrastructure for a campus-wide learning health system.
- In response to 9-11 attacks, led a team of engineers and computer scientists that developed the first wireless location aware electronic health record system for first responders.
- Founding director, National Center for Public Health Informatics at the Centers of Disease Control and Prevention managing key national biodefense computer systems.



Dr. Sue Levkoff

*Endowed Chair in Community
& Social Support-SmarHOME™*

SmartState Center for SENIORSMART®

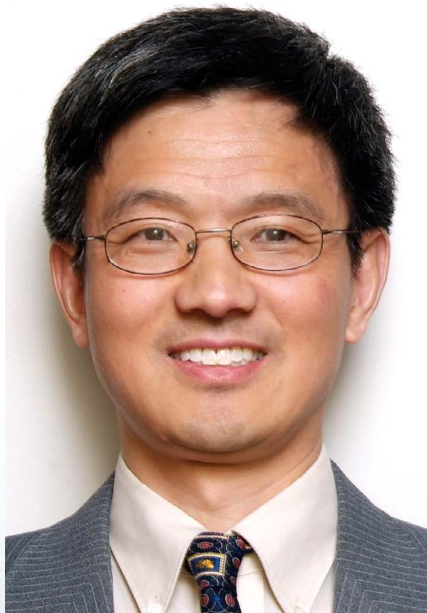
University of South Carolina

■ Specializes in gerontology, gerontechnology and Alzheimer's disease.

■ Technology-based research to monitor medication adherence among older HIV+ African Americans, remote monitoring to prevent hospital readmissions of older African Americans with congestive heart failure, and mHealth to improve sleep in older adults with Alzheimer's disease and related disorders.

■ Principal investigator, two National Institute on Aging grants establishing the South Carolina-Advancing Diversity in Aging Research program to prepare undergraduates from South Carolina's historically black colleges to become researchers and the Carolina Center on Alzheimer's Disease and Minority Research to understand the determinants of Alzheimer's disease and related dementias outcomes among minority populations.

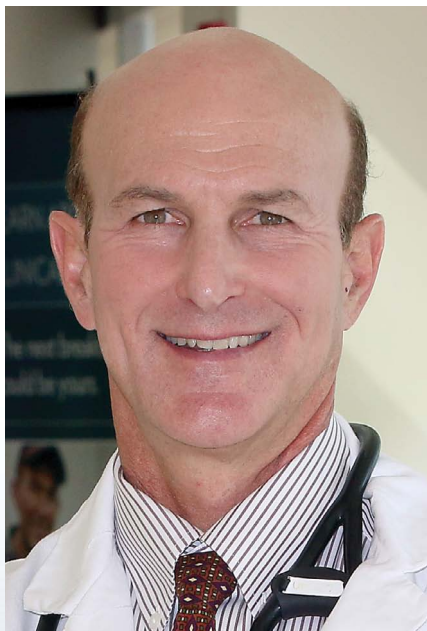
■ Editor-in-chief, *Ageing International*; associate editor, *International Journal of Gerontechnology* and *Frontiers in Public Health and Health Promotion*.



Dr. Xiaoming Li

*Endowed Chair in Translational Clinical Research
SmartState Center for Healthcare Quality
University of South Carolina*

- Internationally recognized leader in HIV prevention, intervention, and other psychosocial and behavioral aspects of HIV/AIDS.
- Serves as principal investigator (PI) or site PI on six extramurally funded projects, including five funded by the National Institutes of Health to study HIV-related stigma, treatment gaps, and implementation science in U.S. and international settings.
- Identified as the world's most active author in AIDS-related stigma and discrimination (1980-2017).
- Instituted and administers a junior scholar program that has successfully trained 23 doctoral students from different disciplines across the University of South Carolina (2016- 2019).



Dr. Sheldon Litwin

Countess Alicia Spaulding Palozzi

Chair in Cardiovascular Imaging

*SmartState Center for Molecular
Proteomics in Cardiovascular
Disease & Prevention*

Medical University of South Carolina

- Preventive cardiology with focus on weight management.
- Diagnosis and treatment of heart failure with preserved ejection fraction (HFpEF) using lifestyle measures, device therapy, cell-based therapy, and pharmacological therapy
- Use cardiac imaging techniques for diagnosis and characterization of heart failure.
- Interaction of fatty liver disease and cardiovascular diseases



Dr. Hesheng Liu

Endowed Chair in Imaging Science

SmartState Center for Brain Imaging

Medical University of South Carolina

- Research focuses on developing novel neuroimaging and computational tools to reveal brain functional architecture in individual subjects, with a major goal of localizing brain networks using functional MRI to guide surgical intervention.
- Identify personalized neuromodulation targets for brain disorders such as Parkinson's disease and depression, and study functional changes after neuromodulation treatments.
- Research is supported by multiple National Institutes of Health grants.
- Published over 70 papers in scientific journals such as *Nature Neuroscience*, *Neuron*, *PNAS*, *JAMA Psychiatry*, and *Molecular Psychiatry*.



Dr. Anand S. Mehta

Endowed Chair in Proteomic Biomarkers

SmartState Center for Proteomics

Medical University of South Carolina

- Expert in the analysis of protein-linked carbohydrates, glycoproteomics, biomarker discovery and development; and the field of hepatocellular carcinoma and viral hepatitis.
- Extensive translational research experience and involvement in starting and working with early stage companies, focusing on biomedical-related biomarker tests for cancer detection, prognosis and treatment.
- Founding scientist of three companies, GlycoTest, LLC; GlycoPath, LLC; and N-Zyme Scientific.
- Have biomarkers in commercial development in the United States with others available clinically in other parts of the world.



Dr. Stephane M. Meystre

*Endowed Chair in Translational
Biomedical Informatics*

*SmartState Center for Translational
Biomedical Informatics*

Medical University of South Carolina

■ Physician informaticist focused on solving the global healthcare dilemma of reusing unstructured clinical data.

■ Expert in natural language processing, which combines the disciplines of computer science, artificial intelligence, and computational linguistics to enable computers to derive meaning from human or natural language input such as the data found in electronic health record systems.

■ Research funded by the National Cancer Institute, National Science Foundation and many others, with over 100 peer-reviewed publications on topics that include automated processes to discover patients eligible for specific clinical trials, detect patients with congestive heart failure not treated according to guidelines, and de-identifying patient records.

■ Fellow, American College of Medical Informatics.



Dr. Martin Morad

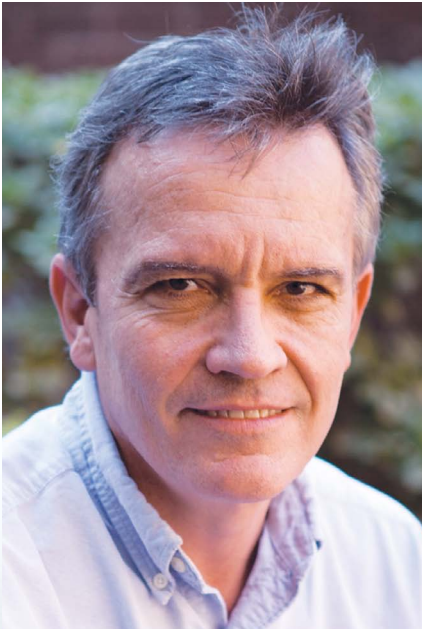
BlueCross BlueShield Foundation

Endowed Chair in Cardiovascular Health

SmartState Center for Regenerative Medicine

University of South Carolina

- Internationally recognized scientist with expertise in cardiac electrophysiology and calcium imaging.
- Research focuses on developing a tissue-based pacemaker for the heart using human cardiomyocytes derived from stem cells; molecular identification of oxygen sensor of the heart and implication to hypoxia; and unraveling the mechanism of congenital arrhythmia by CRISPR/Cas9 gene editing and its pharmacotherapy.
- Seminal contributions to the understanding of molecular processes regulating cardiac excitation contraction coupling, cardiac ion channels regulation and their pharmacology, mechanisms of calcium channel antagonists, and regulation of heart rhythm automaticity.
- Over 300 publications, 20 of which have appeared in *Science and Nature*.



Dr. Gavin Naylor

Endowed Chair in Bioinformatics

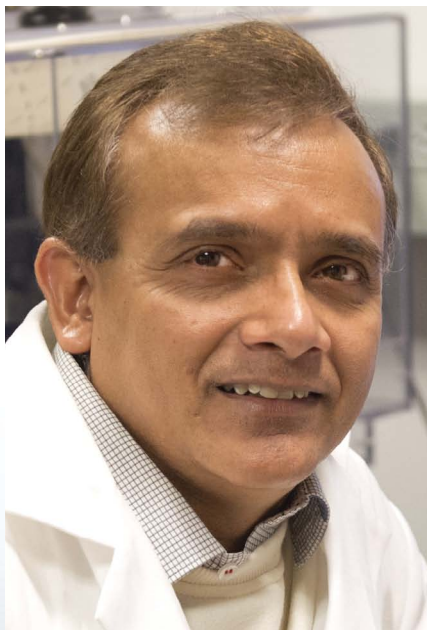
SmartState Center for Marine Genomics

Medical University of South Carolina

■ Research is aimed at leveraging observed patterns in molecular evolution to better understand the forces that shape and constrain the diversity of life from protein structures to organismal designs.

■ Recent work has focused on using DNA sequences to document biodiversity in sharks, skates, and rays with the discovery of several previously undetected species.

■ Earned Ph.D. in zoology from the University of Maryland; served as the Kalbfleisch Postdoctoral Fellow at the American Museum in New York, as a Sloan Fellow in the University of Michigan Department of Biology, and as a developmental genetics fellow at Yale University.



Dr. Deepak Nihalani

Endowed Chair in Renal Biomarkers

SmartState Center for Renal Disease Biomarkers

Medical University of South Carolina

■ Protein biochemist in the field of glomerular biology and glomerular disease actively engaged in applying his expertise in clinical translational research to identifying and developing pharmacological candidates for the treatment of various glomerular diseases.

■ President of InDepth Pharmaceuticals, a company he founded in 2017 that focuses on developing diagnostic assays and therapeutics to treat glomerular disease.

■ Engages nephrologists and researchers to develop novel research programs that will benefit nephrology, patients with kidney disease and advance academic careers.

■ Holds two global patents and published over 35 peer-reviewed articles.



Dr. Jihad S. Obeid

Endowed Chair in Biomedical Informatics

*SmartState Center for Clinical
Effectiveness & Patient Safety*

Medical University of South Carolina

- Pediatrician trained in medical informatics through a joint Harvard-MIT fellowship program.
- Research focuses on the secondary use of electronic health record (EHR) data for research, electronic consents, electronic research preferences, deep learning applications in clinical text, and analysis of researcher collaboration networks.
- Co-director, Biomedical Informatics Center at the Medical University of South Carolina (MUSC) and founder, course in biomedical informatics at MUSC.
- Leads multiple clinical and translational research informatics projects at MUSC such as the EHR Research Data Warehouse, i2b2, REDCap, and profiles research networking system.



Dr. Bärbel Rohrer

*Endowed Chair in Gene & Pharmaceutical
Treatment of Retinal Degenerative Diseases*

SmartState Center for Vision Science

Medical University of South Carolina

- Internationally recognized expert in retinal degeneration, emphasizing mechanisms of complement activation and energy metabolism in aging and age-related macular degeneration and retinitis pigmentosa.
- Research tests gene function in pathology, utilizing different imaging and functional modalities to examine phenotypes and biochemical, molecular and genetic readouts.
- Chief scientific officer and co-founder of MitoChem Therapeutics, a company advancing her inventions into therapies for patients with retinitis pigmentosa.
- Member, Association for Research in Vision & Ophthalmology and the Society for Neuroscience; fellow, National Academy of Inventors.



Dr. Chris Rorden

Endowed Chair in Neuroimaging

SmartState Center for Brain Imaging

University of South Carolina

- Research focuses on understanding the problems of language and perception following stroke injury.
- Employs state-of-the-art methods such as functional MRI, brain stimulation, scalp electrical recording, and sophisticated behavioral measures to understand brain function.
- Research is supported by the National Institutes of Health and includes a multi-institutional project for the Center for the Study of Aphasia Recovery (C-STAR) aimed at gaining a better understanding the speech and language impairments that are common consequences for brain injury with the ultimate goal of developing, validating and deploying new methods for prognosis and treatment.



Dr. Kenneth Ruggiero

*Endowed Chair in Technology Applications
for Disease Prevention, Management &
Risk Reduction*

*SmartState Center for Technology
to Enhance Healthful Lifestyles
Medical University of South Carolina*

- Research focused on developing and testing technology-enhanced interventions to improve access and quality of evidence-based health care to vulnerable populations.
- Developing implementation strategies to adapt and scale technology-enhanced interventions that address the needs of individuals who experience traumatic events and other major life stressors.
- Served as principal investigator for four grants funded by the National Institutes of Health and seven funded by the Department of Homeland Security and Veterans Administration.
- Published more than 140 scholarly publications and serves on the editorial boards of the *Journal of Traumatic Stress*, *Journal of Interpersonal Violence* and *Journal of Anxiety Disorders*.



Dr. John Schaefer

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

*SmartState Center for Clinical
Effectiveness & Patient Safety*

Medical University of South Carolina

- An international expert in healthcare simulation working to reduce patient injury and improve medical outcomes.
- Develop training, equipment, and software programs that has made South Carolina a leader in the medical simulation field.
- Co-founder of SimTunes, a simulation education company, which has sublicensed its technology to global manufacturer Laerdal Medical.
- Developed a statewide network of medical simulation centers in South Carolina that enable healthcare providers to practice their skills in a controlled, risk-free environment, rather than on actual patients.



Dr. Souvik Sen

Endowed Chair in Clinical Neurology

SmartState Center for Stroke

University of South Carolina

- Researcher focused on understanding stroke risk factors and developing new approaches for treatment, recovery and prevention.
- Established first Joint Commission-certified comprehensive stroke center in the South Carolina Midlands. The center sees the highest number of stroke patients in the State of South Carolina.
- Established ACGME accredited Neurology Residency and Vascular Neurology fellowship to help train physicians caring for stroke patient in the South Carolina Midlands.
- Collaborations between the University of South Carolina schools of medicine, public health, and dentistry have resulted in more than \$11 million in research funding over five years.



Dr. Henry M. Sucov

Endowed Chair in Biofabrication Biology

*SmartState Center for Advanced
Tissue Biofabrication*

Medical University of South Carolina

- Pioneer in molecular/mechanistic studies of heart development and congenital heart defects, applying these insights to postnatal heart regeneration.
- Established a paradigm shift in the conception of adult heart regeneration. It was previously thought that the adult heart is non-regenerative after injury such as a heart attack. It is now recognized that heart regeneration is variable between individuals; some have much better intrinsic regenerative ability though most do not.
- Discovered specific genes that influence heart regenerative capacity. These are candidate targets to improve heart regeneration and recovery of heart function in all patients after a heart attack.



Dr. Bobby Thomas

*Endowed Chair in
Neurodevelopmental Disorders
SmartState Center for Childhood
Neurotherapeutics
Medical University of South Carolina*

- Work focuses on understanding the molecular mechanisms involved in the pathogenesis of childhood and age-related neurodegenerative disorders with an emphasis on mitochondrial dysfunction and stress signaling cascades involving oxidative stress and neuroinflammation.
- Research employs development of small molecule non-electrophilic Nrf2 activators and Bach1 inhibitors as therapeutic agents for neurodegenerative disorders.
- Co-founded NeuroPark Bioscience, a biotech company involved in the development of small molecule therapeutics.
- Research supported by the National Institutes of Health.



Dr. Betty Tsao

Endowed Chair in Inflammation Research

*SmartState Center for Inflammation
& Fibrosis Research*

Medical University of South Carolina

■ An internationally recognized researcher with expertise in the field of autoimmune rheumatic diseases.

■ Research focused on discovering genetic risk factors predisposed to the development of autoimmune rheumatic diseases, which can result in enhanced understanding of the disease pathogenesis as well as finding novel drug targets for improvement of disease management and patient outcomes.

■ Awarded more than \$6 million in federal research grants and has published more than 100 peer-reviewed research articles.



Dr. Jeffrey Twiss

*Endowed Chair in Child &
Adolescent Neurochemistry*

*SmartState Center for
Childhood Neurotherapeutics
University of South Carolina*

- Research interests encompass nerve growth and regeneration, neuroprotection focusing on gene expression and signal transduction. Our work concentrates on the neurons' intrinsic mechanisms for regeneration that we suspect can be utilized to accelerate regeneration and overcome growth inhibitory environments.
- Former director, Center for Translational Neurobiology and Histology Core Laboratory at Nemours Biomedical Research, Alfred I. DuPont Hospital for Children, Wilmington, Delaware.
- Research funded by the National Institutes of Health, U.S. Department of Defense/U.S. Army Medical Research Program), the U.S.-Israel Bi-national Science Foundation, and the Dr. Miriam and Sheldon G. Adelson Medical Research Foundation.



Dr. Delia West

*Endowed Chair in Technology
Applications for Health Behavior Change*

*SmartState Center for Technology
to Enhance Healthful Lifestyles*

University of South Carolina

- Research focus on behavioral interventions for weight management using technology to determine evidence-based obesity treatments that are applied in community settings.
- Her iReach studies examine internet-assisted obesity treatment, investigating key variables such as in-person versus online contexts, motivational interviewing and financial incentives that impact participant success.
- Has co-authored more than 125 peer-reviewed publications and served as principal investigator or investigator on more than 32 federally funded and foundation-sponsored research projects.
- Fellow, Society of Behavioral Medicine and serves on the National Institute of Diabetes and Digestive and Kidney Disorders Clinical Obesity Research Panel.



Dr. Theodore Besmann

Endowed Chair in Energy & Nuclear Security

*General Atomics Center for the Development
of Translational Nuclear Technology*

University of South Carolina

■ Research interests are related to thermochemical experiments and modeling for nuclear fuel development and in-reactor behavior, and development of advanced nuclear waste forms.

■ Director, General Atomics Center, which has four principal areas of research: nuclear fuel analysis and development, modeling and simulation, nuclear waste forms, and public policy.

■ The Center is funded, in part, through a \$900,000 gift from San Diego-based General Atomics, a leading nuclear technology company.

■ Currently exploring new approaches to nuclear fuel systems, modeling and simulation of nuclear fuel behavior, and nuclear waste storage to meet future energy needs.



Dr. Dan Gabriel Cacuci

*Endowed Chair in Nuclear Power
Advanced Materials*

*SmartState Center for Nuclear Science & Energy
University of South Carolina*

■ Internationally recognized research and development on optimally combining large-scale experimental and computational results for reducing uncertainties in validated predictive analyses of engineering systems, emphasizing traditional and innovative applications of nuclear reactors and energy.

■ Former editor, *Nuclear Science and Engineering*, the *Research Journal of the American Nuclear Society*; and *The Handbook of Nuclear Engineering* (2010, Springer).

■ ANS Fellow; holder of four honorary doctorates; U.S. Department of Energy E.O. Lawrence Award; ANS Compton Award; ANS Wigner Award; ANS Seaborg Medal; Germany's A.V. Humboldt Prize; honorary member of European Academies; former Scientific Director of CEA/France Nuclear Energy Sector.



Dr. Johan Enslin

*Duke Energy Smart Grid Technology Endowed Chair
SmartState Center for Smart Grid Technology
Clemson University*

- Nearly 40 years of leadership experience in industry and academia throughout the United States, Europe and South Africa.
- Research focused on building smarter, integrated power grid with a priority on technologies and approaches that support large-scale renewable energy integration and improve energy efficiency.
- Authored/co-authored more than 280 technical journal and conference papers and holds more than 21 provisional and final patents.
- Recipient of the 2014 *Charlotte Business Journal* Energy Leadership Award while director of the Energy Production and Infrastructure Center at the University of North Carolina, Charlotte.



Dr. Kevin Huang

Endowed Chair in Solid Oxide Fuel Cells

SmartState Center for Solid Oxide Fuel Cells

University of South Carolina

- Globally recognized scientist in the field of electrochemical materials, fuel cells, batteries, and membranes.
- Holds 12 U. S. patents and published 195 peer-reviewed journal papers.
- Winner of Breakthrough Leadership in Research, Educational Foundation Award for Research in Science, Mathematics and Engineering, College of Engineering and Computing Research Achievement Award, University of South Carolina Breakthrough Stars.
- Awarded \$3.2 million from the U.S. Advanced Research Projects Agency-Energy in 2014.



Dr. Jochen Lauterbach

*Endowed Chair in Strategic Approaches
to the Generation of Electricity (SAGE)*

SmartState Center for SAGE

University of South Carolina

- Research focuses on improving environmental control technologies and development of novel approaches for electricity generation as well as novel sensor materials for power applications.
- Develops new materials and processes for hydrocarbon reforming, for biofuels, and for carbon emissions capture, storage or use.
- Holds nine U.S. and international patents and three provisional patents; co-author of 120 peer-reviewed publications and nine book chapters.
- Research funded by DARPA, the National Science Foundation, the U.S. Department of Energy, and industry partners.



Dr. John Regalbuto

*Endowed Chair in Catalysis for Renewable Fuel
SmartState Center for Catalysis for Renewable Fuel
University of South Carolina*

- Conducting research to develop new liquid phase catalysts for producing from renewable sources alternative fuels that will decrease the rate of CO₂ emissions and meet U.S. Department of Energy targets.
- Current efforts involve the use and comparison of different methods for synthesis of a variety of catalysts especially using Strong Electrostatic Adsorption in producing catalysts with high dispersion.
- Holds six U.S. patents; co-authored nearly 120 peer-reviewed publications; author of *Catalyst Preparation: Science and Engineering* (2007).
- Former Catalysis and Biocatalysis Program Director, National Science Foundation, Directorate for Engineering.



Dr. Robert F. Baldwin

*Margaret H. Lloyd Endowed Chair in Urban Ecology
SmartState Center for Urban Ecology & Restoration
Clemson University*

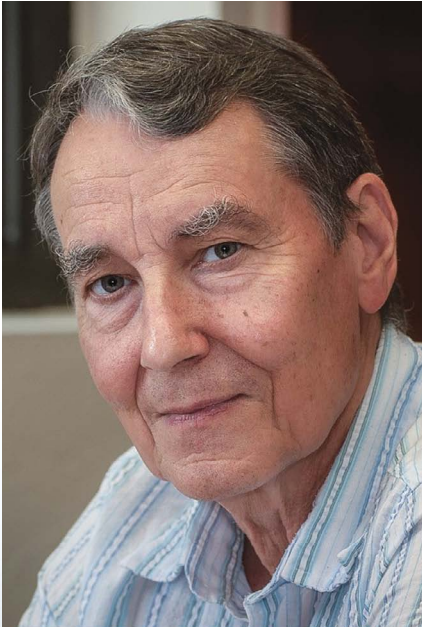
- Landscape ecologist designing sustainable land use using geospatial technologies and field study.
- Research on economic and social benefits of environmental conservation, illuminating competing land use interests of agriculture, forestry, water, wildlife, and urbanization.
- A founder of Palmetto Green, the statewide business-conservation partnership.
- Supported by the National Science Foundation, U.S. Department of Agriculture, Environmental Protection Agency, and other government and private sources.



Dr. Laura B. Cardinal

*Endowed Chair in Innovation + Commercialization
SmartState Center for Innovation + Commercialization
University of South Carolina*

- International expert on the implementation of innovation goals and strategies, including the effects of organizational control and coordination on innovation, research and development (R&D), new product development teams, product commercialization, and founding firm adaptation.
- A passionate advocate for technology born out of science, R&D, and teaching the next generation of innovation leaders.
- Best Paper Award, “An aspirational view of organizational control research,” *Academy of Management Annals* 2017 Volume.
- Former board member, Academy of Management and Strategic Management Society; grant panels for the *National Science Foundation*; and editorial board member, various professional journals.



Dr. Wolfgang Dahmen

*Williams-Hedberg-Hedberg Endowed Chair
in Mathematics*

*SmartState Center for Data Analysis,
Simulation, Imaging & Visualization*

University of South Carolina

■ Internationally recognized research in approximation theory, numerical and applied analysis.

■ Develop novel adaptive solution concepts for partial differential or singular integral equations and multi-scale modeling using wavelet type multi-scale concepts and problem-tailored stable variational formulations; certifiable methods for high-dimensional problems in the context of uncertainty quantification (UQ); reduced basis methods and their applications in UQ, data assimilation and parameter estimation; and integration of model-based and data driven methodologies.

■ Interdisciplinary collaborations in fluid mechanics, chemical engineering, and structural imaging.

■ Member of the German National Academy of Sciences; Isaac Newton Institute Scientific Steering Committee, Cambridge University; and the Board of Directors of Foundations of Computational Mathematics.



Dr. Simon Hudson

Endowed Chair in Tourism & Economic Development

SmartState Center for Tourism &

Economic Development

University of South Carolina

■ An internationally recognized tourism expert whose research focuses on tourism as a driver of economic development.

■ Recently completed two studies about South Carolina's tourism market. The first looked at African-American travelers and the second studied how well the state attracts retirees, a market with an economic impact estimated at nearly \$30 billion.

■ Author of nine books and more than 70 refereed journal articles and is a frequent keynote speaker at international tourism conferences.

■ Working to create a one-stop resource of advanced information and intelligence for tourism industry stakeholders and improve South Carolina's competitiveness as a tourism destination.



Dr. Eric G. Johnson

PalmettoNet Endowed Chair in Optoelectronics

SmartState Center for Optoelectronics

Clemson University

- Research at the Center for Optical Materials Science and Engineering Technologies (COMSET) focuses on ways to integrate new materials into optoelectronic devices and systems.
- Work centers on advanced design and manufacturing techniques for photonic devices used in sensing, imaging and communications.
- Leading the effort to establish advanced facilities for research, education, and industrial partnerships in optoelectronic device fabrication and integration.
- Fellow, Optical Society of America and the International Society for Optics and Photonics.



Dr. Mark Johnson

*Thomas F. Hash Endowed Chair
in Sustainable Development*

*SmartState Center for Sustainable Development
Clemson University*

■ Founding director of the Clemson University Center for Advanced Manufacturing, research and education programs in advanced manufacturing with the goal of igniting economic growth and job creation in South Carolina.

■ The Center for Advanced Manufacturing brings together several Clemson initiatives focused on research and education important to advanced manufacturers, including the Vehicle Assembly Center, the Advanced Robotics Manufacturing Center, the Clemson Composites Center, Product Life Cycle Management, the Clemson University Center for Workforce Development and the Center for Aviation and Automotive Technological Education Using Virtual E-Schools.

■ Former director, Office of Advanced Manufacturing in the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy.



Dr. Sally McKee

*C. Tycho Howle Endowed Chair in
Collaborative Computing Environments
SmartState Cyber Institute
Clemson University*

- Address computer systems problems, including processor, network, and memory systems architecture; high-performance/high-efficiency computing; performance/power analysis and optimization; and computer systems modeling.
- Expanding research into hardware/software approaches to computer security.
- Maintains ongoing collaborations in North America, Europe and Asia.
- Helped define the “Memory Wall,” which explains why it does not matter how fast a processor is if you cannot keep it fed with instructions and data. Many problems of import spanning in scientific computing, health, business and entertainment, are limited by memory latency and bandwidth.



Dr. Charles Bennett

Endowed Chair in Medication Safety & Efficacy

SmartState Center for Medication

Safety & Efficacy

University of South Carolina

- Hematologist and oncologist with research focus on preventing adverse drug events and improving drug safety.
- Founded Southern Network on Adverse Reactions (SONAR) and Research on Adverse Drug Events and Reports (RADAR), internationally regarded organizations that investigate and disseminate information about adverse drug and device reactions, and that have identified potentially fatal and previously unreported side effects associated with 43 drugs.
- Awarded more than \$4.2 million in federal research grants and published more than 100 manuscripts in peer-reviewed journals.



Dr. J. Alan Diehl

Endowed Chair in Lipidomics & Pathobiology

*SmartState Center for Lipidomics,
Pathobiology & Therapy*

Medical University of South Carolina

- Leader in the analysis of the intersection of signal transduction and cell division.
- Work focuses on the role of E3 ubiquitin ligases in the maintenance of cyclin D1 levels and the physiological function of the E3 ligase in tumor suppression
- Research directed at the molecular mechanisms of cancer initiation and progression with specific focus on the regulation of cell division and post-translational in cancer.
- Howard Hughes Medical Institute Postdoctoral Fellow for St. Jude Children's Research Hospital.



Dr. Mark T. Hamann

*Charles & Carol Cooper Endowed Chair
in Pharmacy*

*SmartState Center for Cancer Drug Discovery
Medical University of South Carolina*

- Research focused on the discovery and development of novel therapeutics from plant and marine natural products.
- Use advanced chemotherapy and bioinformatics tools to identify and develop innovative drug leads quickly and have discovered molecules that have advanced into clinical development for the control of cancer.
- Hold more than a dozen U.S. and international patents and published over 200 papers and book chapters.
- Secured more than \$20 million in research funding from the National Institutes of Health, National Science Foundation, Environmental Protection Agency, NASA, and industry.



Dr. John LeMasters

GlaxoSmithKline Endowed Chair

SmartState Center for Cancer Drug Discovery

Medical University of South Carolina

■ Research focuses on techniques that allow scientists to see what happens inside an individual cell during re-oxygenation, the restoration of oxygen to an organ following oxygen deprivation, which sometimes occurs following a heart attack or stroke.

■ Pioneer in a cellular microscopy that allows scientists to view slices of an individual cell, much like CAT or MRI scans complement the more traditional X-ray by allowing doctors to view the body in layers.

■ Other research includes understanding the mechanisms through which the liver is injured by chronic alcohol use and donated organs are damaged while being held for transplant surgery.



Dr. Gustavo Leone

*Grace DeWolff Endowed Chair in
Medicinal Oncology*

*SmartState Center for Gastrointestinal
Cancer Diagnostics*

Medical University of South Carolina

- As director of the Hollings Cancer Center, oversee patient care and lead cancer-related research efforts to achieve and promote trans-disciplinary and translational collaborative research.
- Research focuses on identifying how disruption of critical cell cycle regulatory pathways contributes to uncontrolled cell growth, a hallmark of cancer.
- Author of more than 120 peer-reviewed publications and recipient of numerous recognitions for contributions to cancer research.



Dr. Mitzi Nagarkatti

Endowed Chair in Structural Biology

SmartState Center for Cancer Drug Discovery

University of South Carolina

- Research focus includes inflammation, cancer immunology and immunotherapy, biodefense, immunopharmacology, immunotoxicology, and complementary and alternative medicine.
- Drug development effects aimed at finding drugs based on plants that lead to an anti-inflammatory response. Today, patients have few options as drugs currently on the market have side effects toxic to the cardiovascular and gastrointestinal systems.
- Since joining the University of South Carolina in 2005, she has secured more than \$45 million in grants from the National Institutes of Health (NIH) and the Veterans Administration. This includes a \$10 million grant from the NIH to study dietary supplements and inflammation and a \$2.4 million NIH grant for inflammation and post traumatic stress disorder.



Dr. Besim Ogretmen

Endowed Chair in Lipidomics Drug Discovery

SmartState Center for Lipidomics,

Pathobiology & Therapy

Medical University of South Carolina

- Researcher at the Hollings Cancer Center focused on lipid metabolism in aging and cancer.
- Conduct research to develop mechanism-based novel therapeutics for the treatment of patients with advanced cancers with regards to sphingolipid metabolism and signaling.
- Received an \$8.9 million program project grant from the National Cancer Institute for the development of novel cancer therapeutics targeting sphingolipid signaling.
- Co-founder and chief scientific officer of a small biotech company, Lipo-Immuno Tech, LLC.



Dr. Igor Roninson

Endowed Chair in Drug Efficacy

*SmartState Center for Translational
Cancer Therapeutics*

University of South Carolina

- Internationally recognized cancer researcher known for his studies of multidrug resistance in cancer and chemotherapy-induced senescence in tumor cells.
- Winner of the American Association for Cancer Research (AACR) Award for Meritorious Achievement in Cancer Research and the Life Extension Prize from the Regenerative Medicine Secretariat.
- Founder, Senex Biotechnology, Inc., a drug discovery and development company.
- Holder of 39 U.S. patents; awarded \$1.55 million research grant from the National Cancer Institute in 2011.



Dr. Kenneth D. Tew

John C. West Endowed Chair in Cancer Research

*SmartState Center for Translational
Cancer Therapeutics*

Medical University of South Carolina

- An international leader in cancer drug discovery and development for pivotal research in testing three novel drug candidates in late stage clinical trial in myelodysplastic syndromes, lung and ovarian cancers.
- Awarded National Institute of General Medical Sciences COBRE grant for \$10.5 million.
- Fellow, American Association for the Advancement of Science; recipient, Astellas USA Foundation Award.
- Chair, Drug Discovery Development & Regulatory Affairs, American Society for Pharmacology and Experimental Therapeutics (2011-2013); chair, Section of Pharmaceutical Sciences, American Association for the Advancement of Science (2012-2015).



Dr. Patrick M. Woster

*Endowed Chair in Chemical Biology/
Medicinal Chemistry*

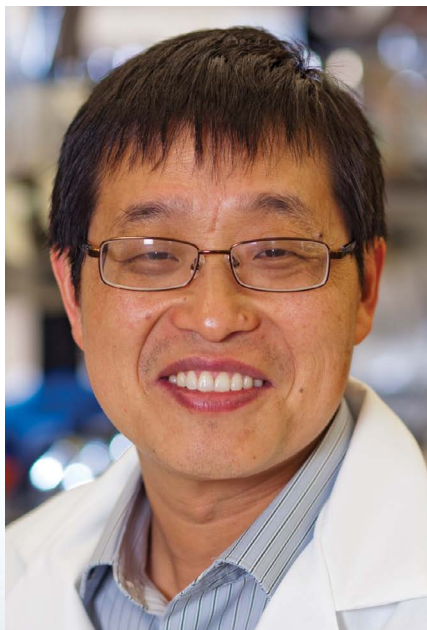
*SmartState Center for Cancer Drug Discovery
Medical University of South Carolina*

■ Leading cancer researcher whose work has the potential to advance the biosciences industry in South Carolina and increase the number of clinical trials in the state.

■ Director, Medical University of South Carolina Drug Design and Synthesis Core, a resource for optimization and scale-up of potential drug candidates.

■ Developing drugs that turn specific genes in tumor cells on or off, a process known as epigenetic modulation, which can increase effectiveness of anti-tumor medications.

■ Holds eight U.S. patents and working on new treatments for diseases such as malaria and other parasitic illnesses.



Dr. Xue-Zhong Yu

*Robert K. Stuart, MD, Distinguished
Endowed Chair in Hematology & Oncology
SmartState Center for Cancer Stem Cell
Biology & Therapy
Medical University of South Carolina*

- Leading expert in immunotherapy research, focused on hematopoietic stem cell transplantation as a therapy for hematologic malignancy.
- Associate director, Basic Science, Hollings Cancer Center.
- Research has made significant contributions to the understanding of how T-cell activation and differentiation impact graft-versus-host and graft-versus-leukemia responses. Within the scope of immunotherapy, research extends to micro-RNA regulation, complement, metabolism, and microbiota.
- Continuous and extensive funding from the National Institutes of Health.



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