

HOLLINGS

Winter 2013

HOLLINGS

The Newsletter of Hollings Cancer Center
Medical University of South Carolina

HORIZONS

OUR PATIENTS ARE OUR HEROES

“When I was diagnosed with stage-III breast cancer, I felt a clinical trial was the best option for me. As a mother, a survivor, and a scientist, I am going to fight this disease with everything I’ve got.”

*-Ann Ramsdell, PhD (pictured, bottom right)
Hollings Clinical Trial Participant
Breast Cancer Survivor, Breast Cancer Researcher*



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A National Cancer Institute
Designated Cancer Center

Medical University of South Carolina
Charleston, South Carolina

Hollings Cancer Center
<http://hcc.musc.edu>
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Hollings patients, like the ones pictured above who participate in clinical trials, are heroes in the fight against cancer. They help answer some of the disease’s most difficult questions - such as which treatments work best for different types of cancer. Hollings researchers and physicians are applying what they learn from patients and what they know about cancer’s molecular complexities to develop therapies tailored to each patient. *This is where cancer genomics and the promise of personalized medicine meet.*

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■ From the Director

It saddens me to share news of the death of a true leader at MUSC and Hollings, Dr. Carolyn E. Reed.

Dr. Reed died of pancreatic cancer in November after 26 years of service here. Without her herculean efforts, there would be no Hollings Cancer Center. A renowned thoracic surgeon, she scaled back her thriving practice from 2000-2004 to serve as director of the Cancer Center at a critical time.

She worked tirelessly with others to establish Hollings as a contender for National Cancer Institute (NCI) designation, which we attained in 2009. Our standing today is a testament to her perseverance, and we feel her loss greatly.

Dr. Reed knew that our cancer center is only as good as the people who work here, and she insisted upon standards of excellence that helped shape MUSC and Hollings into the institutions they are today. To that end, her legacy is evident as I share news of some talented people who joined us in 2012.

The Medical University of South Carolina welcomed Don C. Rockey, MD, as the new chair of the Department of Medicine. Dr. Rockey came from the University of Texas Southwestern where he served as professor of internal medicine and chief of the Division of Digestive and Liver Diseases. He brings strong leadership and vision to MUSC based on a lengthy record of achievements in the clinical, research, teaching, and administrative arenas.

We also had a great year in recruiting physician-scientists and scientists to the cancer center. To name a few, we welcomed Carolyn D. Britten, MD, to lead our Phase I clinical trials unit; Ann-Marie Broome, PhD, a molecular- and small- animal imaging expert; Tony Cheung, PhD, whose focus is on functional genomics; Michael B. Lilly, MD, an expert in prostate cancer and targeted therapeutics; and Xue-Zhong Yu, MD, one of the country's leading researchers in immune stem cell and bone marrow transplant. We are pleased to announce that Dr. Britten and Dr. Yu will hold endowed chairs in South Carolina's Smart-State Centers of Economic Excellence Program.

This year promises to be a busy one for Hollings. We are preparing for the renewal of our NCI designation and look forward to having the evaluation team back in the fall. Also, this year marks the 20th anniversary of the Hollings Cancer Center. We will have more news on that soon. In the meantime, on behalf of everyone here, I would like to wish all a happy new year. May 2013 be filled with health, happiness and prosperity for you and your family.

Sincerely,

Andrew S. Kraft, MD
 Director, Hollings Cancer Center
 William H. Folk, MD, Chair in
 Experimental Oncology



Hollings Cancer Center Director Andrew S. Kraft, MD, and Carolyn E. Reed, MD

CANCER GENOMICS:

Why isn't there a cure for cancer?

Physicians and researchers across the globe hear this question often. While the immediate answer is simple, its implications are not. In the 41 years since the National Cancer Act ushered in the "war on cancer," scientists continue to discover that cancer is far more complex than anyone imagined in 1971.

One of the most important discoveries is that cancer is really several hundred diseases. Once a cancer is classified according to where it originates in the body, such as breast, lung, liver, *etc.*, things quickly get complicated. Each type of cancer has multiple subtypes with unique molecular profiles that contribute to its development. One subtype of breast cancer, for example, behaves differently from another, which helps explain why one subtype responds well to a drug, while another subtype is resistant.

"Cancer is a genomic disease, and everything else flows from that," said Stephen P. Ethier, PhD, a noted researcher in breast cancer biology and cancer genomics. "To make progress, we must realize that every person's cancer is different at the genetic level. We can use an understanding of these differences to improve the mode of therapy for cancer patients."

■ Hiu Wing "Tony" Cheung Awarded Prestigious V Foundation Grant

Tony Cheung, PhD, assistant professor of Pathology & Laboratory Medicine, was named a 2012 V Scholar by The V Foundation for Cancer Research.

Dr. Cheung's studies aim to unravel the genetic underpinnings of ovarian cancer, one of the most lethal gynecologic cancers.

The V Foundation was established by legendary basketball coach Jim Valvano to support cancer research. Valvano died of cancer in 1993.

Since awarding the first grant in 1994, The V Foundation has funded more than 450 grants to the brightest physicians and scientists pioneering techniques to make breakthroughs in cancer research. Grants are awarded by a scientific advisory board through a competitive process. Only cancer research projects with the most potential are funded.



LOOKING FOR THE DRIVER ONCOGENES

Genomics: Fulfilling the Promise of Personalized Therapy

Cancer genomics is a new frontier in cancer research and is a significant focus of the Hollings Cancer Center research enterprise via its Cancer Genes and Molecular Regulation (CGMR) program, led by Ethier. The field of cancer genomics investigates how a cell's molecular machinery drives cancer initiation, development and metastasis.

The endgame of genomics research is to realize the promise of personalized medicine, which is treatment tailored to the individual patient based on genetic and other information. According to Ethier, major breakthroughs in personalized medicine for cancer have come in the treatment of certain leukemias, certain types of breast cancer, and more recently in lung cancer and melanoma. Today, patients are treated with new targeted drugs when their cancers contain specific driver cancer genes, and these drugs are rapidly changing the course and outcome of these diseases.

Researchers in Hollings' CGMR program focus their efforts on identifying novel genetic alterations and assessing their functions and the proteins they encode. These genes and proteins then become new targets to examine for potential intervention through improved diagnostics or better therapies.

"There is a lot of noise going on inside cancer cells. They can contain thousands of alterations, and our work is to figure out which ones are the driver oncogenes powering the cancer, and which ones are merely passenger genes unlikely to do any harm," explained researcher and CGMR program member Hiu Wing "Tony" Cheung, PhD. "When we find the drivers, we can aim new or existing drugs at them to find out how they respond."

"To make progress against cancer, we must realize that every person's cancer is different at the genetic level. We can use an understanding of these differences to improve the mode of therapy for cancer patients."

- Stephen P. Ethier, PhD



Dr. Cheung said the caliber of the CGMR team and the investment MUSC and Hollings are making in genomics technology, as well as a large assay library of chemicals to test against targets, put the institution at the leading edge of genomics research. For example, MUSC has invested in sophisticated high-throughput equipment that allows researchers to conduct tens of thousands of genetic, chemical or pharmacological tests in a short period of time, significantly accelerating the discovery timeline.

"The goal is to understand the genome information obtained from each tumor," Dr. Cheung added. "We only know that a handful of genetic alterations, if present in tumors, would provide actionable therapeutic option to cancer patients. We definitely want to identify many more such targets. That's why we're doing this in a high-powered way at MUSC."

Circos plots, like this one containing data from lung and skin cancer samples, offer a complete genomic portrait of a cancer patient. This information helps scientists develop personalized therapies.

"There is a lot of noise going on inside cancer cells. They can contain thousands of alterations, and our work is to figure out which ones are the driver oncogenes powering the cancer, and which ones are merely passenger genes unlikely to do any harm."

- Hiu Wing "Tony" Cheung, PhD

*Image created by Martin Krzywinski, Staff Scientist
Canada's Michael Smith Genome Sciences Centre BC Cancer Research Centre*

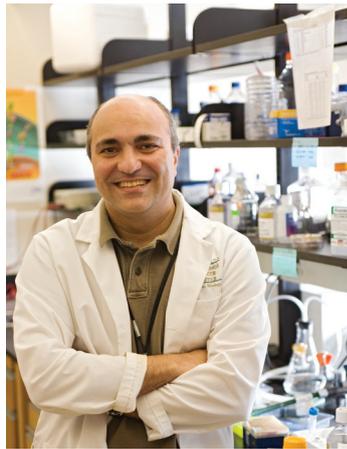
■ Highlights

ETHIER NAMED INTERIM DIRECTOR OF NEW CENTER FOR GENOMIC MEDICINE

Stephen P. Ethier, PhD, professor of Pathology and Laboratory Medicine and leader of Hollings' Cancer Genetics and Molecular Regulation program, has been appointed interim director of MUSC's new Center for Genomic Medicine. The center's mission is to support basic and clinical research and training in genetic and genomic influences on human health and disease, and to translate these discoveries into clinical practice.

OGRETMEN TEAM PUBLISHES IN PRESTIGIOUS JOURNAL

The findings of a team of researchers led by Besim Ogretmen, PhD, professor of Biochemistry & Molecular Biology, have been published in *Nature Chemical Biology*, one of the top journals for biological sciences. Journal editors said the paper, "Ceramide Targets Autophagosomes to Mitochondria and Induces Lethal Mitophagy," provided important evidence about the tumor-suppressing activity of the C18-ceramide lipid that could lead to the development of new anti-cancer therapies. The article was one of the most downloaded articles of the year.



HUGHES-HALBERT JOINS NCI BOARD

Chanita Hughes-Halbert, PhD, program leader of Hollings' Cancer Prevention and Control program, has been appointed to the National Cancer Institute's Board of Scientific Advisors.

Dr. Hughes-Halbert is the first researcher in South Carolina to be appointed to this board. The board's role is to provide scientific advice on a wide variety of matters concerning program policy, progress and future direction of the NCI's extramural research programs, and concept review of extramural program initiatives.



ROBERT WOOD JOHNSON FOUNDATION HONORS BRYANT



U.S. Congressman James Clyburn, Dr. Debbie Bryant, and MUSC President Dr. Raymond S. Greenberg

Debbie Bryant, DNP, RN, assistant professor of Nursing and assistant director of Cancer Prevention and Control and Outreach at Hollings, was named a 2012 recipient of the Robert Wood Johnson Foundation's Community Health Leader Award.

The award honors exceptional men and women who have overcome significant obstacles to tackle some of the most challenging health and health care problems facing their communities. The Robert Wood Johnson Foundation has honored more than 200 community health leaders since 1993. Bryant was one of only ten recipients chosen from hundreds of nominees and is the first South Carolinian to receive this award.

Janice Ford Griffin, national program director for Community Health Leaders, said the selection committee honored Dr. Bryant for her perseverance in creating and executing strategies that treat patients as active participants in improving their health.

Hollings Cancer Center Director Andrew S. Kraft, MD, said Bryant's leadership is crucial to the center's mission of providing care to all South Carolinians regardless of where they live.

"In her role at Hollings, Dr. Bryant and her team are tasked with important work – helping as many people as possible in rural and underserved communities obtain access to screening, cancer care and information about cancer," Dr. Kraft said. "From the Mobile Unit to community training programs, Dr. Bryant's team is achieving great results and changing the health outlook for many of our citizens."

As a child growing up in South Carolina during the end of segregation, Dr. Bryant was the only African American in her classroom and said she was often ignored by teachers. Her family helped her believe in herself. Nursing is her second career, and she says she never would have completed graduate school and her doctorate without her family's encouragement. She also believes that family is the key to promoting healthy behaviors.

"We are at our best - and can accomplish the most - when we take care of one another," Dr. Bryant said. "I am honored by this award and by the opportunities I have every day to do work that might change the lives of others in meaningful way."

MUSC MOURNS A FALLEN WARRIOR AGAINST CANCER: IN MEMORY OF DR. CAROLYN E. REED 1950-2012

Carolyn Elaine Reed, MD, an esteemed thoracic surgeon who held the Alice Ruth Reeves Folk Endowed Chair of Clinical Oncology at the Hollings Cancer Center, died November 16, 2012, of cancer. In her years at MUSC, Dr. Reed built a national and international reputation as a thoracic surgeon and oncologist with expertise in lung and esophageal cancer. Even though she succumbed to her great adversary, Dr. Reed's work helped countless others successfully fight cancer.

"Dr. Reed was the consummate clinician – dedicated to the complete care of her patients," said MUSC President Raymond S. Greenberg, MD, PhD. "Many of them developed close personal relationships with her, not just because she treated their life-threatening illnesses, but because she had compassion and understanding for them as people."

Dr. Reed was recruited to MUSC in 1985 by Dr. Fred A. Crawford Jr., MD, former chief of the Division of Cardiothoracic Surgery, to succeed Edward F. Parker, MD, the father of thoracic surgery in South Carolina.

Dr. Reed was named among the nation's Top Doctors every year from 1996-2012. She played a key role in helping develop Hollings Cancer Center, serving as its director from 2000-2004 and as associate director of Medical Affairs from 2004-2012.

"She was not only a skilled surgeon, but she had something extra – the ability to relate to her patients in such a way that they truly loved her," Dr. Crawford recalled.

"My patients are my inspiration. I believe too often we hide our emotion. I have promised myself that the day I no longer walk out of the hospital with tears in my eyes over the loss of a patient will be the day I quit medicine."

-From Dr. Reed's 2007 Presidential Address, Southern Thoracic Association

Dr. Reed had an impressive research record, having published 100 peer-reviewed articles and 20 book chapters. She was editor of *General Thoracic Surgery* (7th edition), widely recognized as the bible for general thoracic surgery.

A trailblazer, she was elected president of the Southern Surgical Association in 2006, the first woman to serve as president of a major thoracic surgical organization. She also was the first woman elected to the American Board of Thoracic Surgery, the accrediting body for thoracic surgeons, and the first woman to serve as its chair.

Layton McCurdy, MD, dean emeritus of MUSC's College of Medicine, remembered Dr. Reed telling him about the bond she forged with patients, "I like people, and I want to know about my patients' lives. I don't just operate and disappear."



In 2011, with retirement in mind, Dr. Reed donated \$500,000 to establish a chair to ensure the quality of thoracic surgery at MUSC. Gifts to the chair may be sent to:

The Carolyn E. Reed, MD
Distinguished Chair in Thoracic Surgical Oncology
c/o MUSC Foundation
18 Bee Street MSC 450
Charleston SC 29425-8610



■ "Carolyn Reed was known in the cancer center, in South Carolina, and around the country as the 'queen of lung cancer surgery.' There was not a patient she cared for, a referring physician, or a colleague in academics who would argue with that lofty title. New patients from rural communities would invariably bring news from their small towns of others she had saved, had laughed with, and those she had grieved for.

To watch her work her magic and see how patients put their immediate trust in her was something to marvel at. They knew they were in skilled hands and had someone to fight the good fight with them. Long live the memory of our queen."

Gerard A. Silvestri, MD, colleague



■ "When John was diagnosed with Stage III lung cancer, our world as we knew it came to a full stop. Then we came to Hollings and met Dr. Reed. She was one member of the team, but to John she was the general that was going to lead the fight and help him win. She reminded him often that he had a lot to live for and to keep going. Even when she discharged him from her care, she would still stop by and see him when he was at Hollings. Our family saw her as much more than his surgeon – she was an advocate and a friend."

Peggy Anthony, RN, wife of patient John Anthony (pictured above)

■ Philanthropy

A DAY IN THE LIFE OF AN ABNEY SCHOLAR

By *Allyson Bird*
Office of Development and Alumni Affairs

Her love of natural medicine brought her here, to a laboratory at Hollings Cancer Center, just floors above chemotherapy suites where cancer patients receive treatment.

Rebecca Knackstedt, a fifth-year MD/PhD student at the Medical University of South Carolina, focuses on chemoprevention, or delaying the onset and progression of cancer with drugs or supplements. She welcomes the proximity to patients.

“It’s easy to forget the reason behind this,” she said.

Rebecca’s research is possible because of funding from the National Institutes of Health, with help from The Abney Foundation. The private foundation based in Anderson provides financial assistance to a variety of organizations, most notably higher education.

The Abney Foundation began supporting MUSC students such as Rebecca more than 15 years ago with its Abney Foundation Scholarship program, which provides tuition support for students seeking a career in medical research.

“The funding environment is so hard, and research is so expensive,” Rebecca said. “There’s not a lot of funding for natural product research.”

Her work has two paths: One side of her research examines colitis, or colon inflammation, and the link between colitis and colon cancer. The other side to Rebecca’s research studies the effect of Vitamin D, which the human body produces when it soaks in sunshine or processes certain foods.

Science shows that Vitamin D reduces inflammation and prevents malignant cell growth. Rebecca looks at how tissue with colitis lacks normal levels of the receptor to which Vitamin D binds. She also examines how Vitamin D-deficient tissue develops worse colitis than control tissue.

Rebecca now finds herself on what she calls “the last leg of the journey,” which examines whether she can reverse colitis with a diet high in Vitamin D. Other research suggests



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that high levels of Vitamin D can cause high levels of calcium, which leads to muscle spasms and heart problems in laboratory studies. The discovery presents a hurdle that researchers must overcome before their work can apply to patients.

The Abney Foundation has supported more than 75 budding MUSC researchers exploring the properties and prevention of cancer since the Abney Scholar program began in 1996. Abney Foundation Trustee Carl T. Edwards said Sally Abney Rose, daughter of founder Susie Matthews Abney, visited the Hollings Cancer Center and made it one of her personal causes.

Members of The Abney Foundation now follow up with the scholars each year to understand how funding supports cancer research.

“What they’re doing is usually very, very complex,” Edwards said. “But we at least want them to know there’s a real live person interested and concerned with what they’re doing.”

Rebecca came to MUSC, in part, because she wanted to work with Dr. Mike Wargovich. The former MUSC professor, now

based in Texas, focuses on cancer chemoprevention and particularly the cancer-fighting properties of plants. He searches the world for healing plants and then studies exotic flora in the lab with the help of his students.

Today, after years of studying colitis in mice, Rebecca stands on the brink of ending this chapter of her own cancer research and contributing toward the knowledge base that moves closer toward a cure.

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CO-CHAIRS MAKING A DIFFERENCE

Timothy Walter

Citizens Advisory Council Co-Chair Timothy Walter and sons Price and Cooper wanted to do something to make a difference in the fight against cancer after losing their loving wife and mother, Darlene Westbury Walter, to lung cancer at the age of 51.

Darlene was a model in her teens and 20s with Stewart Models in New York and Japan. To honor her modeling career, Tim organized the inaugural Breath of Life, a benefit and fashion show to raise funds for lung cancer research at Hollings Cancer Center. Breath of Life raised \$22,000 and will be an annual event.



Heather Eichelberg, Price Walter, Tim Walter, former U.S. Senator Fritz Hollings, Cooper Walter, and Wendy Kinsella



Preston Covington, Natalie Hahn, and Natalie's father Baxter Hahn

Preston Covington

Citizens Advisory Council Co-Chair Preston Covington was The Pajama Run's top fundraiser in 2011, raising almost \$3,000 for cancers "below the waist" at Hollings. Just one year later, this cause took on a new meaning.

In July 2012, Natalie Hahn, a family friend, was diagnosed with ovarian cancer and sought treatment at Hollings Cancer Center. The Wofford College sophomore underwent surgery and chemotherapy and is in good health.

The Hahn family joined Preston at this year's Pajama Run to celebrate Natalie's victory.

SWING FOR A CURE RAISES FUNDS FOR SARCOMA RESEARCH

The Annual Swing for a Cure Party and Golf Tournament was organized by Carrie Branch and her brother-in-law Giles Branch. Held in memory of Travis Branch, Swing for a Cure raised more than \$20,000 for the sarcoma research program at Hollings Cancer Center.



Carrie Branch, Hollings sarcoma surgeon Dr. Lee Leddy, and Giles Branch

GOLF TOURNEY HITS THE SWEET SPOT FOR HOLLINGS

For the past 17 years, golfers have gathered to help cancer patients while playing a game they love. The Hollings Golf Tournament, organized by Hollings physicians Dr. Gerard Silvestri and Dr. Robert Fenning, has raised more than \$1.5 million for cancer research. The tournament takes place at the Kiawah Island Golf Resort. Hollings thanks tournament committee members Jess Cuthbert, Stephen Hargett, Ronnie Miller, Trisha Newitt, Bob Nigro, and Mark Shaffer.

Save the date for the 18th Annual Hollings Golf Tournament: September 16th, 2013!





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New Faculty



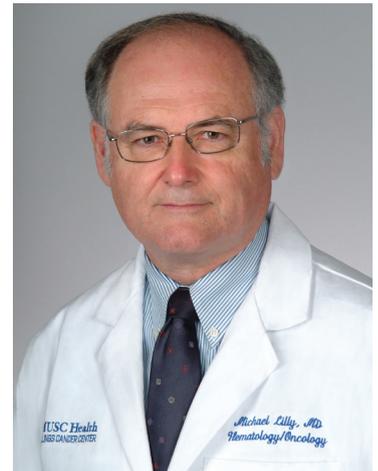
Carolyn D. Britten, MD, a noted scientist in cancer drug development, joined Hollings to serve as director of the center's Phase I Clinical Trials research unit. Known for her expertise in drug discovery and phase I trials, Dr. Britten works with clinicians, researchers and industry partners to develop early-phase treatment options and help transition promising laboratory research into the clinic. Dr. Britten, an associate professor of Medicine and a medical oncologist, was recruited from UCLA's Jonsson Comprehensive Cancer Center.



Ann-Marie Broome, PhD, joined as director of Molecular Imaging at MUSC's Center for Biomedical Imaging and director of Small Animal Imaging at Hollings. Molecular imaging is a cross-disciplinary field combining science, engineering and medicine, that bridges basic and clinically-translatable research. Its goal is to characterize and measure biological processes at the cellular and molecular levels. Dr. Broome's research utilizes bio-inspired nanotechnology to study cancer in its earliest stages of progression. She was recruited from Case Western Reserve University.



Hiu Wing "Tony" Cheung, PhD, an assistant professor of Pathology and Laboratory Medicine, joined MUSC from the Dana Farber Cancer Institute and the Broad Institute of MIT and Harvard. Dr. Cheung's research focuses on integrative approaches to characterizing cancer genomes and studying the impact of genetic alterations on a tumor's response to targeted therapeutics. As part of Hollings' Cancer Genes and Molecular Regulation research program, Dr. Cheung works to identify novel genetic alterations associated with cancer initiation, progression, metastasis, and assessing the functions of these genes.



Michael B. Lilly, MD, a noted translational cancer researcher and urologic oncologist, joined Hollings to co-lead translational research efforts. Dr. Lilly is a recognized expert in the field of targeted therapeutics. Specifically, he has focused on stress response pathways that are triggered in cancer cells and contribute to resistance to cancer therapy. His lab establishes Hollings as the headquarters of a nationwide consortium to carry out a clinical trial in men with castration-resistant prostate cancer previously treated with chemotherapy.