Testimony
Before the
Special Committee on Aging
United States Senate

Statement of
Thomas Sellers, MPH, Ph.D.
Executive Vice President and Center Director
H. Lee Moffitt Cancer Center and Research Institute
Tampa, Florida

Wednesday May 7, 2014

Chairman Nelson, Ranking Member Collins, and the Members of the Committee:

Good afternoon. My name is Dr. Thomas Sellers; I serve as the Executive Vice President and Director of the Moffitt Cancer Center in Tampa, FL. I am an active scientist and have maintained funding from the National Cancer Institute for nearly 25 years. I am also a proud member of, and until very recently served on the Board of Directors for, the American Association for Cancer Research (AACR). The AACR is the world's oldest and largest organization dedicated to advancing cancer research and its mission to prevent and cure cancer.

Thank you, Chairman Nelson and Ranking Member Collins, for convening this important hearing and recognizing that cancer research is critical to making and translating the discoveries needed to reduce the toll that cancer takes on the people and the economy of our Nation. It is my pleasure to be here today to talk to you about some of the outstanding scientific advancements we have made recently in the field of cancer research, as well as the challenges we face as we continue to advance the field for the benefit of the millions of Americans and their loved ones who face a cancer diagnosis.

Impact of aging and cancer on the state of Florida

One of the most defining socio-demographic changes ongoing in the United States is the dramatic increase in the number of older adults. Florida has nearly 20 million residents. Over 18% are older than 65 years, compared to 13.7% nationally. That is the highest percentage in the country and why some refer to Florida as "Heaven's Waiting Room." This age group is forecast to represent 24.1 percent of Florida's population in 2030. Most cancers are strongly associated with increased age. With the aging of our population, there will be a dramatic increase in the number of cancer diagnoses and mortalities, which some have referred to as a "cancer tsunami." Although Florida is the fourth most populous state, it is second in the nation in overall cancer incidence and mortality with over

17,000 residents diagnosed with cancer per year. Within the state, cancer is the leading cause of death. The growth rate of Florida is roughly 300,000 new residents per year, and many of those are coming to retire there. Over the next two decades, Florida's older population (age 60 and older) will account for most of Florida's population growth, representing 55.2 percent of the gains. These trends suggest we will soon rank first in the country in terms of cancer incidence and mortality. Thus, aging and cancer is a significant concern for the entire country, but especially acute for the state I live in.

The Moffitt Cancer Center and our efforts

Since its inception in 1986, the Moffitt Cancer Center has had a single mission: to contribute to the prevention and cure of cancer. Our 206-bed cancer hospital and outpatient clinics are among the busiest in the U.S., treating more than 50,000 cancer patients per year from all 50 states and 78 countries around the world. We have been ranked on U.S. News and World Reports "America's Best Hospitals" list since 1999. In addition, Moffitt is a major economic engine that employs 4,300 people and generates more than $1.7 billion in direct economic output.

In addition to taking care of cancer patients, we have a thriving research enterprise, representing about 20% of the workforce and supported by more than $50 million in research grants and contracts, the vast majority of which is supported by the National Cancer Institute (NCI), the largest Institute at the National Institutes of Health (NIH). In fact, Moffitt is the only NCI-designated comprehensive cancer center based in Florida, and one of only 41 in the country. The comprehensive cancer center designation by the NCI is awarded through a competitive peer-review process and based on our research in the population, in the laboratory, and at the bedside. The NCI-designated Cancer Centers are a major source of discovery of the nature of cancer and of the development of more effective approaches to cancer prevention, diagnosis, and therapy. In addition, they also deliver medical advances to patients and their families, educate health-care professionals and the public, and reach out to underserved populations. Many view the NCI Centers as the nexus for the creation of therapies that will lead to the cure of cancer. From the window of my office, I see hundreds of cars lining up each day, filled with patients, family and friends who are coming to us for one reason – hope. Their hope often lies in the opportunity to participate in clinical trials of novel interventions. At our institution alone that means access to more than 400 clinical trials testing therapies that lead to new standards of care, including, very recently, groundbreaking success in the treatment of melanoma.

But because of federal budget cuts and a shrinking pool of money at the NCI and NIH, funding for this critical program, as well as many other essential programs at the NCI, has been declining for the past decade when factoring in the rate of biomedical inflation. These budget cuts could not be coming at a worse time - a

time of unprecedented opportunity to translate the science that exists today into improved care for cancer patients.

How does Moffitt meet the needs of elderly cancer patients?

The Senior Adult Oncology Program at Moffitt Cancer Center is the first comprehensive geriatric oncology program created in the United States. This program includes a multidisciplinary team of experts with the longest worldwide experience in the treatment of older cancer patients. Great strides have been made, based on rigorous and empirical clinical research, in learning how to tailor cancer treatments to each patient based on their biological age, rather than their chronological age. This has led to important advancements that help older people with cancer, including teaching us how to factor in the high prevalence of chronic conditions and other health problems experienced by elderly patients when they come to us, which are independent of their cancer prognosis.

For example, Moffitt's Senior Adult Oncology group has developed the Comprehensive Geriatric Assessment, which is now being used at academic medical centers throughout the world. This is a tool to evaluate an individual's tolerance to chemotherapy and other cancer treatments. With it, we are able to modify treatments to produce better results while minimizing harmful side effects.

Instead of "one size fits all" cancer treatments, we can choose less aggressive approaches for less healthy patients. On the flip side, we can also identify patients in their seventies who are as fit as people twenty years younger and can do just as well as younger people with aggressive cancer therapy.

An NIH-funded clinical trial currently underway at Moffitt bears this out, by showing that many patients in their seventies, long thought to be too old to receive blood and bone marrow transplants, can actually qualify for this lifesaving therapy if they meet certain criteria.

Progress and challenges

We find ourselves at a propitious moment in our country's long struggle to cure and prevent cancer. We are in an incredibly exciting and promising time in science and cancer research, and the good news is that we have made significant progress. The cancer death rate has declined by 1 percent each year for the past two decades, resulting in more than 1 million lives saved. The number of Americans living with, through or beyond a cancer diagnosis has almost tripled since the 1970s.

According to the most recent AACR *Cancer Progress Report*, 13 new drugs to treat a variety of cancers; six new uses for previously approved cancer drugs; and three new imaging technologies have been approved in just the past 18 months. Moreover, there are now 41 FDA-approved therapies that target specific

molecules involved in cancer, compared with 17 five years ago, and just five 10 years ago.

These advances in cancer research and cancer care are the direct result of the past investments our country has made in the National Institutes of Health (NIH) and the National Cancer Institute (NCI). These investments have accelerated the pace of discovery and the development of new and better ways to prevent, detect, diagnose, and treat cancer in all age groups.

A significant milestone for cancer research -- which NCI funding made possible -- was the discovery that cancer develops as a result of alterations in the genetic material of cells. Research in genomics has propelled technological innovations that are making it possible to efficiently read every known component of the DNA from an individual's cancer. These discoveries are changing the way doctors view cancers, categorizing them increasingly by the genetic changes that drive them and less by where they originate—in the breast, brain, lung, or liver, for example. In fact, by continuing to invest in how different cancers share molecular features and applying the knowledge learned across many different types of cancers, we are optimistic that this will most notably improve the treatments for patients whose cancers have 5-year survival rates at less than 50 percent, such as in the case of small-cell lung cancer, a disease whose five-year survival rate is less than 15 percent.

At Moffitt we have an ambitious research protocol, called Total Cancer Care, that seeks to consent every cancer patient who comes through the door to provide access to their medical record, permit us to analyze their tumor to understand the molecular changes that have accumulated, and to follow them for the rest of their journey with cancer. We had to create a health research information platform to integrate the data, as nothing like it had ever been built. We even had to create new departments to deal with data quality, data governance, and educate the clinical, research, and administrative workforce on the myriad of potential applications. We have enrolled more than 100,000 patients in this unique partnership.

One of the ways that Moffitt's Total Cancer Care database accelerates the improvement of cancer care is that it allows us to identify genetic factors which cause some patients to respond differently to treatment than other patients. Knowing these factors can help us select the treatment best suited to each patient and their disease without the trial and error process that doctors have had to use in the past. The data are used by our researchers to identify targets for drug development and by clinical investigators to test new therapies on the subset of patients that would be predicted to benefit. This precision medicine approach is expected to further improve outcomes, reduce side effects, and eliminate the use of treatments that can be predicted to not work for that patient.

This approach is especially useful when treating cancer in older adults, who have a higher prevalence of chronic conditions unrelated to the cancer diagnosis. Standard treatment options, including chemotherapy, insufficiently account for the disease burden commonly attributed to these patients. Being able to recognize and manage these issues associated with the geriatric community has a dramatic effect on the way we treat older people with cancer.

The Total Cancer Care study was initiated with investment from the pharmaceutical industry and state and local government. This public-private partnership exemplifies how federal funds from the NIH and NCI can be leveraged at the state and local levels, as well as with the private sector.

Therefore, as a researcher and a cancer center director, it is extremely frustrating that at a time of increased scientific possibility and discovery, we are experiencing decreases in funding. Indeed, our ability to continue to deliver the promise of science to our patients is in great jeopardy. Despite the additional funds provided in the current fiscal year, the NIH and NCI budgets remain below fiscal year 2012 levels and below levels prior to sequestration. In addition, the NIH has lost more than 22 percent of its budget after inflation over the past decade, which is significantly impacting our Nation's ability to sustain the scientific momentum that has contributed so greatly to the successes in cancer prevention, detection, diagnosis and treatment.

These cuts not only have a negative impact on current biomedical researchers, but also they will impact future generations of scientific researchers and ultimately our citizens who are counting on us for a cure. For the first time in my career we are seeing fewer grants submitted to the NIH, especially by first-time investigators. The competition for the scarce grant dollars are driving many out of the field, often after years of graduate and post-graduate education, before they even get in the game. As I look around at my peers, I see all us getting older and starting to think about the next phases of our lives. I can't help but wonder who is going to be left to carry on the great tradition of biomedical research in this country. The loss of this generation not only affects our near term potential to create the knowledge that leads to new preventive and therapeutic strategies, but ultimately, to longer-term negative consequences for our nation's global competitiveness.

The future can be bright

There has been progress against cancer. The opportunity to make a significant impact based on recent discoveries and amazing technological advances is at our fingertips. The need is great: more than 1.6 million Americans are expected to receive a cancer diagnosis this year, and more than 580,000 Americans will lose their lives in 2014 to this devastating disease. That equates to one person losing their battle with cancer every minute of every day. Cancer is clearly not only a costly disease in terms of lives lost, but also in terms of dollars spent.

Annually, cancer costs our country more than $215 billion in direct and indirect costs.

The federal government has an irreplaceable role in supporting medical research. No other public, corporate, or charitable entity is willing or able to provide the broad and sustained funding for the cutting edge research necessary to yield new innovations and technologies for the cancer care of the future. It is because of past and current funding received from the NIH that cancer centers like Moffitt can attract and maximize funds from state and local governments, as well as from foundations and other private sources – not to mention thousands of community contributions, large and small.

Without increased funding now, the spectacular advancements we have witnessed in the past will not be there in the future. Without increased funding, the younger generations of academic researchers will be forced to leave science for other fields. With the loss of researchers we risk delaying breakthroughs and discoveries, which could translate to increased morbidities and mortalities associated with cancer. As a country we must set priorities at this difficult time in our history—and the federal government can do no better with its money than continue to invest in medical research.

Scientific momentum has ushered in the arrival of a new era in which we can develop even more effective interventions and save more lives. So this is not a time for the NIH and NCI budgets to be in retreat. Cancer researchers at Moffitt and other cancer centers across the country are on the verge of many other breakthroughs that will benefit cancer patients, but our ability to realize this potential will depend in large part on the level of NIH and NCI funding that will be available for cancer research in the future.

For this to occur we will require an unwavering and bipartisan commitment from Congress and the Administration to invest in our country's remarkably productive medical research enterprise. With robust support, research can help us to accomplish the ultimate goal once articulated by the late Dr. Ernst Wynder -“to help people die young, as late in life as possible”.

Thank you, and I look forward to answering any of your questions.