



notes

WINTER 2011

New Duke Cancer Institute to Transform Patient Care

Duke physicians, researchers, educators, and staff devoted to cancer research and care have been reorganized into a single, integrated, patient-centered team known as the Duke Cancer Institute (DCI).

The DCI is the first of its kind at Duke—an entity that will provide a seamless integration of all cancer care and research—from basic science laboratories to patient care in the clinic—within a single organizational structure.

More than 300 clinicians and basic and clinical researchers in addition to 500 nurses and staff will comprise teams that will address the unique challenges of all types of cancer.

Under the new organizational structure, clinicians and research scientists will work even more closely to speed the pace of discovery and to enhance patients' experience as they move from diagnosis and treatment to recovery.

“The Duke Cancer Institute represents Duke’s highest commitment to the transformation of cancer care and research,” says Victor J. Dzaou, MD, chancellor for health affairs and CEO of Duke University Health System. “Our vision for the Duke Cancer Institute is to accelerate research advances related to cancer so that Duke is able to translate these discoveries into the most advanced care for patients more efficiently than ever before.”



“The Duke Cancer Institute represents Duke’s highest commitment to the transformation of cancer care and research.” — Victor J. Dzaou, MD

Duke has made a \$400 million commitment to advancing cancer research and care. That commitment includes creation of the DCI, construction of the new 267,000-square-foot Duke Cancer Center building scheduled to open in 2012, as well as expansion of clinical services, investment in state-of-the-art technologies, and the recruitment of more world-class physicians and scientists.

“We want to revolutionize the way we marshal Duke’s efforts in the war on

cancer,” Dzaou says. “The investments and organizational changes we are making speak to our unwavering commitment to patients and to our communities.”

A nationwide search for an executive director of the DCI has already begun. In the interim, Anthony Means, PhD, chair of the Department of Pharmacology and Cancer Biology, and Chris Willett, MD, chair of the Department of Radiation Oncology, have been named co-directors. ▀

Topping-Out Ceremony Marks New Building Milestone

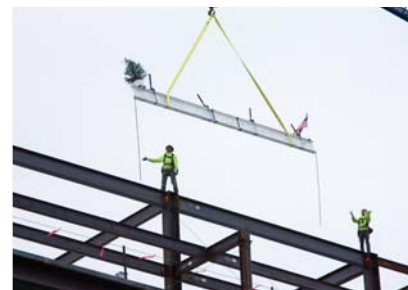
Construction of Duke’s new Cancer Center building took an important symbolic step forward on November 4, 2010, when the final beam for the steel skeleton of the seven-story building was hoisted amid cheers, applause, and the pop of confetti cannons.

The new center, scheduled to open to the public in 2012, is the first building at Duke dedicated solely to the care of patients with cancer. It will include 267,000 square feet of space dedicated

to patient-focused cancer care, including more spacious treatment rooms, a rooftop terrace and gardens, quiet spaces for conversation or reflection, and a cafe. The new building will centralize services such as chemotherapy and imaging that have been spread throughout the medical center in the past.

“This is, indeed, a significant milestone in the creation of what we believe will be one of the finest cancer treatment facilities in the nation,” says Victor J. Dzaou, MD, chancellor for health affairs and CEO of Duke University Health System. “It represents a bold move being taken in the interests of cancer patients throughout North Carolina, the region, and the nation, who depend on the innovative and leading-edge treatment provided every day by our faculty and health care teams.”

Duke Medicine faculty and employees, patients, board members, and community leaders attended the topping-out festivities, held just outside the Morris Cancer Clinic. In the days leading up to the ceremony, and as part of the event itself, approximately 1,000 people



Workers place the final beam on top of the new Cancer Center building.

signed their names on the special white beam, which was adorned with the blue-and-white Duke Medicine shield, an American flag, and a traditional topping-off symbol: an evergreen tree. Some signed the beam in memory of a loved one or in honor of a patient fighting cancer.

In addition to Dzaou, also speaking at the event were Carolyn Carpenter, associate vice president

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DUKE IN-DEPTH
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Cancer Clinics
Address Patients’
Unique Needs



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Duke Cancer Institute

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TOPPING OUT CEREMONY

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for oncology services; Kevin Sowers, president, Duke University Hospital; and Joseph Moore, MD, oncologist. In addition, cancer survivor Harry Rhoads Jr., a patient of Moore, gave a powerful talk about his battle with the disease, giving credit to the doctors and nurses at Duke who helped him through his battle.

Duke's goal is to raise \$75 million to offset the costs of construction of the building. Pledges have already been made from donors across the country including George and Susan Beischer, Tom and Janet Kean, William Caler, and Donna A. Bernstein and her son, Sam Bernstein.

"This is an incredible moment in the life of Duke Medicine, because today demonstrates our ongoing commitment to our community and to the hope we bring to the patients and families we serve each and every day," says Sowers. ♥



The signed beam being raised, with Victor Dzau, MD; Chris Willett, MD; H. Kim Lyerly, MD; and Mary Ann Fuchs, RN, DNP, chief nursing and patient services officer, Duke University Health System, looking on with patients, staff, and donors.



Mary Ann Fuchs, RN, DNP; H. Kim Lyerly, MD; Tony Means, PhD; Chris Willett, MD; Nancy Andrews, MD, PhD, dean, Duke University School of Medicine; William Fulkerson Jr., MD, executive vice president, Duke University Health System



Kevin Sowers; Harry Rhoads Jr.; Joseph Moore, MD

Duke Awarded \$30M from National Cancer Institute

The National Cancer Institute (NCI) has renewed the Duke Cancer Institute's core grant which will provide \$30 million over five years to support a broad range of clinical and research programs and 17 resources designed to advance cancer research and care to benefit patients with cancer in North Carolina and throughout the country and the world. H. Kim Lyerly, MD, is the principal investigator of the core grant.

The renewal of this award from the NCI means that the Duke Cancer Institute (DCI), formerly known as the Duke Comprehensive Cancer Center, retains its elite designation as one of only 40 "comprehensive" cancer centers in the country recognized by the NCI. Recognition as an NCI-designated

comprehensive cancer center requires a rigorous, periodic peer review. To qualify, a cancer center must demonstrate significant programs in clinical care, research, and community outreach and education.

Duke has benefited from continuous recognition and funding from the NCI since 1973, when it was named as one of the original eight comprehensive cancer centers.

"This renewal comes at an exciting and transformative time in the history of cancer research, treatment and teaching within Duke Medicine and supports Duke's national reputation for excellence in cancer care," says Victor J. Dzau, MD, chancellor of health affairs and CEO of Duke University Health System. ♥

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Duke Offers Promising New Treatments for Children with Neuroblastoma

In recent years, dramatic progress has been made in improving the odds for children with cancer. The overall cure rate for pediatric cancers now tops 70 percent. Unfortunately, the outcomes for young patients with neuroblastoma—the third most common cancer in children—still lag behind. In neuroblastoma, a tumor develops in nerve tissue in the neck, chest, abdomen or pelvis of an infant or young child and can spread to organs and bones.



Michael Armstrong, MD, PhD; Susan Kreissman, MD; Dan Wechsler, MD, PhD; Tim Driscoll, MD; Raymond Barfield, MD, PhD

“When we can catch neuroblastoma early, before it spreads, the cure rates are about 90-95 percent,” explains Dan Wechsler, MD, PhD, chief of Duke’s Division of Pediatric Hematology-Oncology. “But in half of our patients, by the time the disease shows itself, the cancer has already spread. For those children, the chance of curing the disease is reduced to only 35-40 percent. Our goal is to bring the cure rates for neuroblastoma in line with other childhood cancers.”

In an effort to improve those cure rates, Duke has built a pediatric neuroblastoma program that

not only delivers cutting-edge clinical care, but also pursues basic science research to understand the disease and develop new therapeutic approaches. Wechsler works closely with pediatric oncologist Susan Kreissman, MD, Duke’s principal investigator for the Children’s Oncology Group—a group of pediatric oncology hospitals, and a nationally regarded expert in advanced stage neuroblastoma. They and their colleagues—Tim Driscoll, MD, who specializes in bone marrow transplants for neuroblastoma patients; Michael Armstrong, MD, PhD, who conducts basic science neuroblastoma research; and Raymond Barfield, MD, PhD, who has expertise in developing an anti-neuroblastoma antibody—are excited about two promising new treatments for advanced stage neuroblastoma. These therapies work in conjunction with conventional cancer treatments: chemotherapy, radiation therapy, surgery, and bone marrow transplantation.

The first new approach uses the compound MIBG (metaiodobenzylguanidine), which is taken up by neuroblastoma cells. A small amount of radioactive iodine is attached to MIBG, which is then injected into the patient. The MIBG travels through the blood stream, and when it reaches sites with neuroblastoma cells, it is taken up by those cancerous cells. Once inside, the MIBG delivers targeted radiation, killing the tumor cells. Duke is the only medical center in the southeastern United States that offers this novel therapy. Initial response rates to this new treatment have been

very promising, although long-term prognosis is still a concern.

“By delivering the radiation directly to the tumor and attacking it from within, we’re only exposing a small part of the body to radiation. That means the side effects are more minimal and tolerable, making this treatment an option for patients who have been resistant to conventional therapies,” Wechsler explains.

A second promising treatment offered at Duke uses immunotherapy as a follow-up to conventional treatments. Immunotherapy takes advantage of the patient’s own immune system to fight the cancer, and is an increasingly common cancer treatment. The drugs Avastin and Herceptin are examples of drugs used for adults that rely on the patient’s immune system. Using an intravenous (IV) line, patients receive an antibody that recognizes neuroblastoma cells and kills them. As reported in fall 2010 in the *New England Journal of Medicine*, patients with high-risk neuroblastoma who received this type of immunotherapy fared significantly better than those who only received standard therapy.

In addition to developing these two approaches to treating neuroblastoma, the Duke Pediatric Cancer Group was invited to join NANT (New Approaches to Neuroblastoma Therapy), a consortium of 15 institutions throughout North America committed to working together on basic science research and clinical trials of novel approaches to treating neuroblastoma. Because there are only approximately 600 new cases of neuroblastoma diagnosed each year (about half will be advanced stage), this collaboration is a powerful tool to amass the number of patients needed to conduct these clinical trials. ■

Scientists Decode Secrets of a Very Common Virus that Can Cause Cancer

About 90 percent of people are infected at some time in their lives with the Epstein-Barr virus (EBV), usually with no ill effects. But individuals with compromised immune systems, such as people with organ transplants or HIV infection, have a greater risk of cancer occurring because of this virus.

Scientists at the Duke Cancer Institute have discovered a pathway in the body that infected cells use to get rid of EBV infections, a finding that has implications for understanding the human response to cancer-causing viruses in general.

“Using cell culture studies, we have uncovered a major pathway that the infected host cell activates to prevent an oncogenic (tumor causing) virus from developing,” says senior author Micah Luftig, PhD, assistant professor of molecular genetics and microbiology at Duke. “We proposed that the cell was sensing that the virus is trying to take over. When this oncogenic stress response is activated, it keeps the virus in check, and now we know why.”

According to Luftig, these findings may eventually yield to better therapies to benefit

people who don’t have good immune systems and who need protection from a threatening EBV infection.

Luftig and his group, including lead authors Pavel Nikitin, MS, and Chris Yan, MS, found two enzymes, called kinases, which were critical in mediating the oncogenic stress response. When the scientists blocked the ATM and Chk2 kinases, the result was 10 times more infected cells. This burgeoning cell growth is related to several types of cancer.

“This finding can be extended to the general case of any oncogene being activated that might start the process of tumor formation,” Luftig says. “About 20 percent of all human cancers are caused by infectious agents, where about 80 percent of these infections are viral.” Another example of a viral infection leading to cancer is the human papillomavirus, implicated

in cervical cancer.

Epstein-Barr virus infection can take different courses for different people. In children four to five years old, a first infection with the virus may cause a mild illness, but if this primary infection happens during adolescence, the person may suffer a case of mononucleosis with heavy fatigue and other symptoms. In immune-compromised people, the virus can do much worse damage and cause forms of lymphoma.

This research appeared in the journal *Cell Host and Microbe*. Other authors include Eleonora Forte, PhD; Alessio Bocedi, PhD; Jay Tourign; Katherine Hu; Jing Guo; David Tainter; and Elena Rusyn, MD, PhD, of the Duke Department of Molecular Genetics and Microbiology, and Ameer Patel; Sandeep Dave, MD; and William Kim of the Duke Institute for Genome Sciences & Policy as well as Rob White, PhD, and Martin Allday, PhD, of the Imperial College London.

Funding for this study came from the American Cancer Society, the National Cancer Institute, the Duke Center for AIDS Research, the Duke Cancer Institute, and Golfers Against Cancer. ■



Micah Luftig, PhD

Specialized Breast Cancer Clinics Address Patients' Unique Needs

"Today we know that breast cancer is not just one type of cancer but many types of cancer affecting many groups of women and men. This means that different treatment plans are needed to address the unique needs of these different groups of patients," explains breast oncologist Kimberly Blackwell, MD. "These treatment plans must focus on defeating the disease but also address the many other issues and needs that cancer patients experience."

In March, Duke will open the first of three specialized breast cancer clinics planned for the Duke Cancer Institute. The first clinic is for women with inflammatory breast cancer (IBC). Blackwell, along with Neil Spector, MD, a breast oncologist and one of the nation's leading experts on IBC, will see patients in this clinic. The clinic team also consists of nurse Wanda G. Johnson, RN, who will help guide patients through the clinics.

"The main goal of this clinic is to improve clinical services for unique-need patients," says Blackwell. "We want to help women through their journey with breast cancer." Bringing patients with similar types of cancer together in one location increases our ability to attend to their unique needs, she says.

"IBC is different than other breast cancers and must be treated differently," says Spector, who is also founder of the International Alliance for IBC Research.

IBC occurs in fewer than 5 percent of all breast cancer patients and is different from other



Physicians and researchers for inflammatory breast cancer at Duke.
Back row: Leihua Liu; Wenle Xia, MD; Gay Devi, PhD; Sumin Zhao, MD, PhD
Front row: Neil Spector, MD; Kimberly Blackwell, MD; Wanda G. Johnson, RN

Patient Battles Inflammatory Breast Cancer

Anurse for more than 32 years, Sally Goin has lived a healthy life. She had never had any major medical problems and had always made sure to get her yearly mammogram.

But in 2008, a year after moving to Greensboro, NC, Goin visited a new gynecologist for a routine appointment. After the breast exam, Goin was in pain. When she returned home, her breast began to swell.

"What's going on?" she thought to herself. Although concerned, she felt certain the cause of the pain was not cancer. After all, the results of a mammogram she had just one month before had been clear.

But Goin did have cancer. A local physician performed a biopsy and diagnosed her with HER2 positive breast cancer and inflammatory breast cancer (IBC).

"I hadn't heard of either," she says. "And I freaked out."

Goin's husband lost his mother to cancer

when he was 15, and two years later, his brother died from a brain tumor just months after the diagnosis. They both feared that Goin would have the same fate.

"I am thrilled to be at Duke and only wish I had gone here for treatment from the beginning."

— Sally Goin, cancer patient

To fight the cancer, Goin's local oncologist prescribed a treatment regimen that included chemotherapy followed by Herceptin, a targeted therapy for HER2 positive breast cancer patients. The treatment was effective, and afterward scans revealed no cancer. Goin chose to undergo a double prophylactic or

"risk-reducing" mastectomy to reduce the risk of cancer recurrence. She also received 33 cycles of radiation.

But a month after she completed the radiation treatment, Goin developed a rash on her chest. Although a common sign for inflammatory breast cancer, her oncologist diagnosed the rash as an infection and suggested Goin use an over-the-counter anti-fungal cream to treat it. But the rash continued to spread and Goin demanded a biopsy, which confirmed her worst fear—the breast cancer had returned.

"My radiation oncologist urged me to seek treatment at Duke, so that's what I did," she says.

Goin came to Duke and met with breast oncologist Kimberly Blackwell, MD, who informed Goin of a clinical trial of the drug Tykerb and Votrient to treat the IBC. Goin agreed to participate in the trial.

"When I first met with Dr. Blackwell, she had so many possible treatment plans for me,"

types of breast cancer. It is aggressive and spreads more rapidly. IBC can be difficult to treat, with a five-year survival rate of 25-50 percent compared to almost 90 percent for other types of breast cancer. Few oncologists are experienced in treating women with this rare form of breast cancer.

The second specialized breast cancer clinic is scheduled to open later this year and will be for women under 45 with breast cancer. As with IBC, a smaller percentage—about 10 percent—of women under 45 develop breast cancer. Women under 45 usually have denser breasts which makes diagnosis more challenging. There is also a higher rate of recurrence of cancer after initial treatment.

“Our goal is to do everything we can to make treatment for all women as convenient and comprehensive as possible.” — Kimberly Blackwell, MD

“Our goal is to do everything we can to make treatment for all women as convenient and comprehensive as possible,” says Blackwell. “The key is getting the right group of care providers to the right patient.”

In addition to clinical care, Duke offers support programs and other services for patients with cancer through programs such as the Patient Support Program and the Hereditary Cancer Clinic. In the past it has been the responsibility of the patient to seek out these programs. Now, these services and more will be brought to the clinic for specific groups of breast cancer patients. For example, fertility specialists,

family and child counselors, and other specialists will be readily available for patients receiving treatment in the specialized clinic for younger women.

“I welcome the opportunity to assist by providing supportive care and services to the patients. Encouraging and acknowledging patient feedback will be instrumental in this effort,” says Johnson, who has helped organize these clinics. “Providing patient services in one location will streamline patient care and reduce stress.”

Blackwell hopes that this new way of caring for patients will also reduce the patients’ anxiety. During each clinic visit, patients will use a handheld e-tablet computer to report their level of anxiety and other psycho-social affects they are experiencing. The results of these surveys will be compared to results from similar patients who attend a traditional clinic to determine if in fact this new approach is helpful in reducing stress and anxiety.

The third planned specialized breast cancer clinic will be for women over the age of 70 and will include geriatricians as well as support specialists who have knowledge and expertise in geriatric issues. Duke is home to one of the leading geriatric programs in the country, according to *U.S. News & World Report*. This specialized clinic is scheduled to open later in 2011.

“We believe that these new specialty clinics are the best way to treat patients,” says P. Kelly Marcom, MD, breast oncologist and director of Duke’s Hereditary Cancer Clinic. “These clinics will ease the burdens and increase the services for patients. The clinics will also make it a lot easier for us to conduct breast cancer research.”

Physician-scientists working to understand how to better treat these diseases will have access to these special groups of patients as never before. Their research will focus on developing

new drugs to treat these types of cancer but also will provide an opportunity to learn more about who develops these diseases and why.

Physicians and researchers expect these new specialized clinics to accelerate translational research for these different types of breast cancer—bringing new discoveries and treatments into the clinic through clinical trials to benefit patients.

“The goal of the new Duke Cancer Institute is to seamlessly integrate patient care and research, which will ensure that the patient receives the best, most advanced care possible. That’s exactly the goal of these new specialized clinics,” says Blackwell.

“The new Duke Cancer Center building will also help these new specialty clinics function effectively,” says Blackwell. “We decided to open these clinics prior to the opening of our new facility so that patients can receive the best service possible now.” The new Cancer Center building is scheduled to open in 2012 and will be organized to increase the convenience for patients by consolidating services into one location. (To learn more about the new building visit dukemedicine.org/construction)

Spector believes the concept of specialty clinics will eventually move beyond just breast cancer. He would love to see other specialty clinics in the future, maybe for young men with prostate cancer or non-smokers who have lung cancer.

Participation in these clinics is optional. Patients can continue being treated by their current Duke physician. Current patients who do want to participate should discuss it with their current oncologist.

To learn more about the IBC breast cancer clinics, call 919-668-6688. More information about the other two clinics will be announced later this year. ■

says Goin. “I knew if the first plan didn’t work, that she had others to try. That made me feel confident.”

Goin is now taking Herceptin, Tykerb, and Xeloda. Because Goin’s body responds well to Herceptin, Blackwell has told her that she likely will be taking that drug for the rest of her life in hopes of preventing a recurrence. Goin is also receiving radiation treatment from Duke radiation oncologist Rachel Blitzblau, MD, PhD.

“I am thrilled to be at Duke and only wish I had gone here for treatment in the beginning,” says Goin. “I firmly believe that all patients diagnosed with cancer should get a second opinion, preferably from a major medical center like Duke—especially if they are diagnosed with a rare form of cancer.” (Read the accompanying article on page 4-5 about Duke’s new specialty clinics for women with IBC and for young women and older women with breast cancer.) ■



Sally Goin

New Nursing Care Delivery Model Gives Patients Convenient, Single Point of Contact

A new patient care system will now give all patients receiving treatment in the clinics a single point of contact for all of their medical care at the Duke Cancer Institute.

Soon, all physicians in Duke's cancer clinics will have a designated nurse who will work with that doctor's patients—from the initial consultation, throughout the education and treatment process, and beyond to follow-up care. In the past, multiple nurses worked with each physician, so patients may have encountered different nurses during different clinic visits.

With this new system, called "disease site nursing," patients will know exactly which nurse in the clinics to contact with their questions or concerns.

This system has already proven successful in Duke's Department of Radiation Oncology for more than a decade. Over the past year, it also has been implemented in Duke's thoracic, breast, and gastrointestinal cancer clinics. Soon, the system will be in place for all medical oncology groups, and ultimately for surgical oncology groups as well.

"Our goal in implementing this new team approach is to provide a consistently high level of care for our patients, and to develop that nurse-patient relationship over time so that we can identify and address each person's individual medical and support needs," explains Tracy Gosselin, RN, MSN, AOCN, assistant vice president and associate chief nursing officer for Oncology Services.

Patient satisfaction with this new system has



Robin Hesse with oncology nurse Amy George, RN, BSN

been very high. "Patients have shared that they like the relationship that they can form with their nurses," says Meg Callahan, RN, MSN, OCN, director of clinical operations for the oncology clinics. "They feel the nurses know them as a person as well as a patient and can really help them through their journey."

Nurses have also been pleased with these new team assignments. "The best part of oncology nursing is the relationships you build with

patients and families over time," says Gosselin. "This new system enables us to get to know patients even better so we can support them and their families through a difficult time." ■

Duke University Hospital, Duke Raleigh Hospital, and Durham Regional Hospital have all achieved Magnet designation by the American Nurses Association. Earned by only 5 percent of hospitals in this country, this honor recognizes the highest level of nursing care.



Duke's Leadership in Cancer and Environment Grows

Researchers from the Duke Cancer Institute (DCI) and Duke University Nicholas School of the Environment are collaborating to study the environment and the development of cancer. Last fall, the DCI was a sponsor of the Research Triangle Environmental Health Collaborative's Environmental Health Summit which focused on the intersection of health and the environment. H. Kim Lyerly, MD, (right) director, Duke Cancer Institute NCI Comprehensive Core Grant, was a speaker. Bill Ross, who holds a joint appointment with the Nicholas School and the DCI, and Marie Lynn Miranda, PhD, of the Nicholas School were panelists at the summit. The goal of the summit was to adopt positions and work to change policies related to the environment and health. A final report on how the group plans to move forward on these policies is expected in 2011.

BJ's Continues Its Commitment to Duke

BJ's Charitable Foundation has donated more than \$180,000 to the Duke Cancer Institute (DCI) over the last four years, primarily to support breast cancer research. The foundation is affiliated with BJ's Membership Club, an East Coast-based food and merchandise store.

Each October (breast cancer awareness month), a portion of proceeds from the sales of select "Pink Ribbon" merchandise at BJ's is donated to the DCI. At one of the Raleigh stores in October, BJ's hosted a "pink picnic" during which cancer patients and survivors received lunch and heard from DCI oncologist Neil Spector, MD, director of translational research in oncology who specializes in breast cancer research and care, and from breast cancer survivor Jean Costa.

"We have worked closely with Duke since 2006, proudly donating funds to support breast cancer research and hosting in-club events to help raise awareness about the great work being done to fight breast cancer at this remarkable institute," says Megan Deporter, community relations specialist for BJ's Membership Club. ♣



BJ's General Manager Chekita Greene, breast cancer survivor Jean Costa, and oncologist Neil Spector, MD, at BJ's "pink picnic."



Volunteers Recognized for Service and Support of DCI

Frank and Debbie Deal Moody received the Shingleton Award from H. Kim Lyerly, MD, director of the Duke Cancer Institute NCI Comprehensive Core Grant, and Victor Dzau, MD, chancellor for health affairs and CEO of Duke University Health System on November 4. The Shingleton Award recognizes volunteers and donors for their exemplary service to the Duke Cancer Institute (DCI) and their tireless commitment of time, effort and resources to advancing the understanding of cancer and caring for patients with cancer. The Moodys have been strong advocates and volunteers of the DCI for more than 20 years. Both have been long-time active members in the Dunn, North Carolina Jaycees, a volunteer organization whose main purpose is to improve the quality of life and encourage citizenship and leadership among its members. The Dunn Chapter has worked with the statewide North Carolina Jaycees to support cancer research and care at Duke for many years. Mr. Moody organized a community recycling project through the Dunn Jaycees, and proceeds in excess of \$100,000 from that project have been donated to Duke. The North Carolina Jaycees have donated more than \$1.5 million to the Duke Cancer Institute. The award is named after William Shingleton, the first director of the Duke Comprehensive Cancer Center.

Stanley Tanger Remembered for His Dedication to Cancer Research

In October, Duke Cancer Institute benefactor Stanley Tanger of Greensboro, North Carolina, died unexpectedly. A long-time supporter, along with wife Doris, of the Duke Cancer Institute (DCI), Tanger leaves a legacy of generosity and support for cancer research and care at Duke.

Since 1982, Stanley and Doris Tanger served as members and members emeriti of the DCI's Citizens Advisory Council, an organization of volunteers whose focus is education, advocacy, and support for the mission of the DCI.



Stanley Tanger

The Tanger family has demonstrated their support of the DCI with gifts totaling more than \$1 million to fund a variety of initiatives including breast cancer research, a research laboratory in the Levine Science

Research Center, and the Duke Cancer Patient Support Program. Their support has extended beyond the Cancer Institute with donations of nearly \$2 million directed to other organizations at Duke.

"Mr. Tanger will be missed greatly," says Karen Cochran, executive director of development for the Duke Cancer Institute. "The entire Tanger family has provided very generous philanthropic support for cancer research and patient care and for that we are extremely grateful."

Tanger Factory Outlet Centers, Inc., which was founded by Mr. Tanger, has been a generous supporter to the DCI as well. Just after Tanger's passing, a new Tanger Outlet Center opened in Mebane, NC, approximately 20 miles west of Duke. During a pre-opening gala, Steven B. Tanger, president and CEO of Tanger Factory Outlet Centers, Inc. and son of Stanley and Doris, presented the DCI with a check for \$20,000 to fund breast cancer research. Breast oncologist Kimberly Blackwell, MD, spoke at the gala about the importance of cancer research.

"The Tanger family has been a proud supporter of the Duke Cancer Institute for many years," says Steven Tanger. "Our family, along with the Tanger Outlet Centers, is pleased to continue this tradition of giving to Duke and to continue the battle to fight and ultimately find a cure for breast cancer." ♣

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ask the expert

UMBILICAL CORD BLOOD TRANSPLANTATION

Joanne Kurtzberg, MD, is professor of pediatrics and pathology, director of Duke's Pediatric Blood and Marrow Transplant Program, and director of Carolinas Cord Blood Bank. She is a leading expert on blood and marrow transplantation and was the first physician to use umbilical cord blood from unrelated donors to cure cancers and life-threatening genetic disorders.

What is umbilical cord blood and how is it used to treat disease?

DR. KURTZBERG: Umbilical cord blood is the baby's blood left in the umbilical cord and placenta after a baby is born. We use the stem cells (and other cells) from donated cord blood to transplant into patients to treat a variety of medical problems such as blood cancers like leukemia and lymphomas, as well as certain immune deficiencies, hemoglobinopathies like sickle cell disease, and some metabolic diseases.

We have used transplantation of bone marrow for years to treat many of these same diseases, but cord blood transplantation is becoming more widely used now. During bone marrow transplantation, stem cells from the soft part of the inside of bones (known as marrow) are removed from a bone marrow donor and then transplanted into the patient.

In most cases, a bone marrow transplant requires that a donor have a complete match to the bone marrow of the receiving patient. This means that a group of proteins in the bone marrow known as HLA needs to be the same for both the donor and patient. It is often difficult to find a complete match. Even a sibling has only about a 25 percent chance of being a match. Exact matches are even more difficult to find for non-Caucasians because there are fewer non-Caucasian donors in the bone marrow registry and because there is more diversity in HLA proteins among non-Caucasians. Even though there are 13 million volunteers who are registered to be bone marrow donors in the United States, African Americans' and Asian Americans' chances of finding a match are less than 10 percent. Caucasians have a 50 percent chance of finding a complete match.

What are the advantages of cord blood transplants versus bone marrow transplants?

DR. KURTZBERG: The advantage of a cord blood transplant is that it requires that the patient find a donor with only a partial match; the HLA proteins do not have to match completely. Ninety-five percent of patients who cannot find a bone marrow match can find at least a partial match with cord blood. In addition, with cord blood transplantation a patient is less likely to develop graft vs. host disease, a potentially serious condition where the patient's body does not accept the new transplanted stem cells.

Who is eligible to receive a cord blood transplant?

DR. KURTZBERG: In pediatric oncology patients, children usually receive a cord blood transplant only if the standard therapy, such as chemotherapy, isn't effective in treating their blood cancer. For adults with blood cancers, the first choice of treatment is often a bone marrow transplant. However, if there is no match, then a cord blood transplant may be performed.

Originally, doctors thought only children could receive a transplant using umbilical cord blood; they feared that cord blood would not contain enough stem cells for an adult. But researchers found that if adults receive double the amount of cord blood that a child receives, then the trans-



Joanne Kurtzberg, MD

plant can work in adults as well. Now, more than half of the patients who receive cord blood transplants are adults.

In the past, doctors would only perform transplants in patients who were no older than their mid 40s; they felt that older adults would not respond well to the high doses of chemotherapy that are required to kill the cancerous cells before the new stem cells are transplanted. Now, patients in their 60s and 70s are often given transplants because advances in treatments mean that lower doses of chemotherapy are required and older adults respond better to these treatments.

How does one donate cord blood?

DR. KURTZBERG: Pregnant women can choose to store their cord blood after delivery. The blood can be stored in a public or private cord blood bank. In private banks, parents pay the bank to preserve the cord blood for use by their own family. The family owns the cord blood and can decide how it is used. However, it is important to understand that a child's own cord blood would rarely be suitable for transplantation in that child. Because the stem cells in the cord blood carry the same affected genes, the same condition would be present when the cells were transplanted. For example, in most cases of childhood leukemia, cells carrying the leukemic mutation are already present at birth and are found in the cord blood. That means that the leukemia cells could be given back during the transplantation since there is no effective way to remove them from the cells yet.

Cord blood donated to a public bank can be used for research or to benefit other patients. There is no cost involved with donating the cord blood to public banks. Carolinas Cord Blood Bank is a public bank affiliated with many of the hospitals in the Raleigh-Durham area. Until recently, a mother who chose to donate her cord blood to a public bank had to give birth in a hospital that was associated with one of the 13 federally sponsored cord blood banks. Today, Carolinas Cord Blood Bank is supplying donor kits to mothers who want to donate but whose hospital is not associated with a public bank. Mothers can call 919-668-2071, and the kit will be shipped to their house with instructions for the mother and her physician.

What does the future look like for cord blood transplants?

DR. KURTZBERG: At Duke, we are doing a great deal of research with cord blood transplants. One exciting project aims to create safe procedures that would enable us to use a patient's own cord blood to correct damaged cells or tissues. I think we will see even more adults receiving cord blood transplants because this type of transplantation is proving to be so successful. I also think that cord blood transplantation will be considered an option to treat more conditions like sickle cell anemia and some auto immune diseases. Further into the future, I am really optimistic about the role of cord blood use in regenerative medicine. Regenerative medicine uses stem cells to essentially "fix" or restore damaged body parts and organs. There have been many research studies using animals—and some with humans—that appear to demonstrate that umbilical cord stem cells can be used in this way. ■



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