USC Norris cancer report

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Harvesting Hope

USC researchers work to advance epigenetics, a type of cancer therapy that helped John Turco get back in the garden.

Inside: Moving Toward Recovery Through Physical Therapy, page 6 || Beating Brain Tumors, page 16
Recruiting Excellence in Women’s Cancer Care, page 18 || Celebrating Survival at USC Norris, page 20
We are in a time of tremendous growth here at USC. Recently, the USC Norris Comprehensive Cancer Center gained an important partner in the fight against cancer—the USC Norris Cancer Hospital. While the hospital has always been an exceptional ally in the fight against cancer, it’s exciting to see all Norris personnel working together as part of the Trojan Family.

In fact, the Trojan Family grew by two in April, when USC acquired full ownership of the cancer hospital, as well as the USC University Hospital. This was a truly transformational moment in the history of medicine at USC, as the Health Sciences Campus evolves into an integrated USC academic medical center.

You may notice that this magazine has grown, too! To celebrate the formal partnership of two exceptional entities, we have expanded the USC Norris Cancer Report to reflect more of the important work being done at both the cancer center and the hospital. In these pages, you will find stories of hope, innovation and progress toward cures.

From clinical trials and research advancements, to patient care and survivorship issues, the USC Norris Cancer Report will bring you the latest news in our quest to conquer cancer and provide a better quality of life for our patients and their families.

We hope you will join us on our exciting journey as the USC Norris Comprehensive Cancer Center and Hospital work to advance the art and science of medicine to improve the health of our local community, the global community and our USC Trojan Family.

Sincerely,
Katie Neith
Editor

HELPFUL NUMBERS:
For patient appointments with The Doctors of USC, call 1.800.USC.CARE
For USC Norris Cancer Hospital information, call 1.800.700.3956

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Trojan Family Welcomes Hospital Employees

USC toasted the acquisition of two hospitals at picnic celebrations welcoming USC University Hospital and USC Norris Cancer Hospital employees into the Trojan Family.

The sun shone brightly on a new era of academic medicine at USC as more than 2,000 hospital employees, doctors of USC and clinic personnel were treated to fresh salads, grilled meats and a plentiful array of desserts on April 3. With many decked out in cardinal and gold, the crowd cheered and danced to the music of the USC Trojan Marching Band. The picnics were hosted by Mitch Creem (pictured above, greeting picnic participants), CEO of the two hospitals. Travis Martin, a USC University Hospital ultra-sound tech, hailed the hospitals’ transition to USC ownership, adding that the employee celebration “is really something special and new for us. We feel like we’re being welcomed to the family.”

An evening picnic was also held to recognize the nightshift employees.

USC Welcomes Urology Chair at Beverly Hills Reception

Pioneering urologist and surgeon Inderbir S. “Indy” Gill, M.D., was welcomed to Los Angeles and the University of Southern California Trojan Family at a Beverly Hills reception hosted by actress Shirley MacLaine and Keck School of Medicine of USC Dean Carmen A. Puliafito, M.D., M.B.A., on May 10.

More than 300 guests, including USC friends, donors and referring physicians, attended the cocktail gala at the Montage Hotel, including MacLaine’s brother, actor Warren Beatty and his wife, actress Annette Bening, and USC Executive Vice President and Provost C.L. Max Nikias.

Gill is chairman of the Catherine and Joseph Aresty Department of Urology and the founding executive director of the USC Institute of Urology. Recruited from the Cleveland Clinic, where the urology program is ranked #2 in the country by U.S. News and World Report, Gill has pioneered minimally invasive surgeries for cancers of the kidney, prostate and bladder. Gill is the first in the world to perform single-port “keyhole” laparoscopic kidney donation surgery in a virtually scar-free manner. He also is in the world leader in performing minimally invasive, kidney-sparing surgery for kidney cancer.

MacLaine, in her introduction of Gill, noted that Beatty found him when looking for a surgeon to help a friend. MacLaine said she spoke to Gill at length and was impressed with what she heard from him.

“I think minds are like parachutes—they function more fully when they’re open,” she said. “Welcome, Indy, my friend with a parachute mind.”

Puliafito noted Gill’s “leadership in the field of robotic and laparoscopic surgery for urologic cancers” and his international reputation. “He is truly a beacon surgeon—70 percent of his patients come from around the world and across the United States,” Gill said. “USC is really breathing in scope. The entrepreneurship and leadership are energizing. We will put together a world-class team.”

The USC Institute of Urology includes 20 full-time faculty and more than 30 post-graduate residents and fellows dedicated to excellence in patient care and research. For more information, visit www.uscmedicine.com.

David Agus joins USC Norris Comprehensive Cancer Center

Noted oncologist and cancer researcher David B. Agus, M.D., was welcomed to the Keck School of Medicine of USC June 24 at a reception at the home of Robert and Kelly Day, members of the Board of Overseers of the Keck School. Hosted by the Days and Keck School Dean Carmen A. Puliafito, M.D., M.B.A., the reception was attended by 80 guests.

Agus joined the Keck School faculty on April 1 as a professor of medicine and director of the new USC Westside Prostate Cancer Center, a multidisciplinary center in Beverly Hills that provides care for patients with prostate cancer. He is a full member of the USC Norris Comprehensive Cancer Center.

Agus also serves as principal investigator for the Molecular Technologies in Cancer project, which is supported by a recent $5 million gift from the Ellison Medical Foundation. The initiative focuses on molecularly targeted therapy, which holds promise as a new paradigm for cancer treatment.

Prior to joining the Keck School of Medicine, Agus served as the director of the Spaulding Family Center for Applied Proteomics and research director of the Louis Warschaw Prostate Cancer Center at Cedars-Sinai Medical Center. He and his research team have focused on factors influencing the development and progression of cancer.

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Epstein Receives National Cancer Institute Award

Alan L. Epstein, M.D., Ph.D., member of the USC Norris Comprehensive Cancer Center, has received an award of $3.5 million from the National Cancer Institute (NCI) for a recent advancement in drug development. Epstein’s breakthrough discovery is aimed at helping patients with metastatic melanoma and renal cell carcinoma. The reagent he developed with Peisheng Hu, Ph.D., assistant professor of research pathology at the Keck School of Medicine of USC, is an analog of Interleukin-2 (IL-2), which is an important therapeutic for cancer patients. Current therapy with IL-2 is limited due to its severe toxicity and side effects. Epstein’s development was selected by NCI due to its potential to eliminate the toxicity of the drug.

“I picked this molecule because it is curative in many people,” said Epstein, who is also a professor in the Department of Pathology at the Keck School. “If we can reduce its toxicity, we can help more patients.” Epstein will serve as an advisor to the NCI team that will do development work, toxicology studies, and other tasks needed to bring the discovery from bench to bedside.

Dubeau Initiates Ovarian Cancer Consortium

With funding from the Department of Defense (DOD), Louis Dubeau, M.D., Ph.D., professor of pathology at the Keck School of Medicine of USC, has developed an international consortium to investigate early ovarian cancer.

As part of the DOD’s Ovarian Cancer Research Program, Dubeau received a one-year grant to set up the consortium, which consists of world leaders in ovarian research from nine institutions in Australia, Canada, the United Kingdom and the United States.

“We will work together to learn about the biology of early ovarian cancer in the hopes that we can develop strategies for prevention and early treatment of ovarian cancer,” he said.

Ovarian cancer is one of the most lethal types of cancer because it often develops without symptoms. According to Dubeau, the key to success in preventing ovarian cancer is to understand what precancerous lesions look like and where to find them.

Dubeau is a renowned researcher who has been investigating ovarian cancer since he arrived at the USC Norris Comprehensive Cancer Center in 1987.

“We are studying the biology of early lesions, which will lead to the discovery of prevention tools and treatment options that will eventually lead to biomarkers, which aid in diagnosing disease and predicting treatment outcomes,” said Dubeau.

The new findings go to the heart of why cancers begin. This is an opportunity to see the very beginning step of human lymphoma,” said Lieber.

USC Researchers Identify Key T-cell Lymphoma Mutation

USC researchers have identified a key mechanism that causes chromosomes within blood cells to break—an occurrence that marks the first step in the development of human lymphoma.

The study provides researchers with the clearest insight yet into why these breakages—called chromosomal translocations—occur at specific points in the chromosome, said principal investigator Michael R. Lieber, Ph.D., M.D., Rita and Edward Polusky Professor in Basic Cancer Research at the Keck School of Medicine of USC. The study appeared as the featured cover article in the June 12 issue of the journal Molecular Cell.

“If we can now begin to look at ways to interfere with this process in order to stop the lymphoma and to develop more targeted therapies for treatment,” the paper follows a similar study, published in the December issue of the journal Mol Mol Cell, on which Lieber and colleagues determined how the most common chromosomal translocation in B cell lymphoma occurs.

“The new findings go to the heart of why cancers begin. This is an opportunity to see the very beginning step of human lymphoma.”
Service Feature

MOVING TOWARD RECOVERY

Physical therapy helps cancer patients regain quality of life during and after treatment  BY KATIE NEITH

WHEN ROBERT KINAGA WAS TREATED at the USC Norris Cancer Hospital for a cancer mass located in the lower left side of his neck, he wanted to stay in optimal shape during his treatment and recovery period. Luckily, he had the help of USC Physical Therapy Associates.

“Physical therapy proved to be essential for my vitality and success. I was able to have enough range of motion to do most things, and maintained enough strength to remain mobile and functional,” says Kinaga, 53, who received therapy as part of the outpatient oncology program. “Light to moderate exercise also helped my energy level to counter the effects of the radiation, even at its worst.”

According to Marina Perdomo, doctor of physical therapy and assistant professor of clinical physical therapy in Biokinesiology and Physical Therapy, a division at the USC School of Dentistry, USC physical therapists treat patients across the cancer continuum. She developed the outpatient oncology program five years ago after launching a similar effort in Seattle. Prior to her arrival, there was no specific oncology outpatient physical therapy program at USC Norris.

While the current program treats mostly breast and head and neck cancer patients, it is open to all individuals diagnosed with cancer at USC Norris, and Perdomo hopes to improve and build the program.

Each physical therapy program is individualized to address the patients’ body impairments and functional and activity limitations. Common concerns with patients after they receive cancer treatment such as surgery, chemotherapy and radiation are lymphedema, pain, tightness and limited energy. Lymphedema is a condition characterized by localized fluid retention and tissue swelling after surgery or radiation. Posture and balance may also be issues.

“We evaluate fitness, range of movement, and strength, as well as things such as cardiovascular health, which can be severely impacted by cancer treatments,” says Perdomo. “Then, we work toward a complete body rehabilitation, developing safe guidelines for regaining optimal fitness.”

She says this includes a detailed assessment of the whole patient to determine what needs to be addressed in order for the person to return to daily life. Perdomo points out that individuals receiving or recovering from cancer treatment experience many physical limitations that are complex and need to be taken into account when evaluating their physical therapy needs.

“The main goal of physical therapy is to increase the patients’ function, mobility and quality of life,” says Kimiko Yamada, doctor of physical therapy and instructor of clinical physical therapy in Biokinesiology and Physical Therapy, a division at the USC School of Dentistry.

She points out that some patients feel that they have to live with the new tightness, fatigue or swelling that may accompany treatment, and that is not always true.

“With physical therapy, some of these issues can be addressed,” says Yamada. “They may or may not be able to fully return to their prior level of function, but we can help them find ways to build activities back into their lives and regain a better quality of life.”

In addition to treatment difficulties, patients may not realize that they could experience continued bodily changes for months and years after completing radiation and chemotherapy.

“It is good to start a good home stretching and exercise program so that patients can find a way to incorporate it into their daily lives consistently,” says Yamada. “Physical therapy is also good to help patients monitor their recovery.”

As a cancer survivor who did not receive physical therapy as part of her treatment, Perdomo knows firsthand the long-term effects of cancer and has experienced the benefits of receiving physical therapy even 10 years after treatment.

“Secondary complications can take a huge toll on the body,” she says. “But if you can start a physical therapy routine before or during treatment, we may be able to facilitate the healing process and improve quality of life for years to come.”

For Kinaga, physical therapy with Yamada has helped him return to the activities he enjoyed prior to his cancer diagnosis. An avid athlete, he is back to participating in beach volleyball and swimming less than a year after finishing radiation treatments.

“There was a very surprising benefit from all this—it made me feel as normal as possible given the circumstances, and gave me hope for a successful outcome. This is vital for any cancer patient; to connect with positive possibilities by believing and then seeing results of the small steps being taken,” says Kinaga.

“Through patience, listening and a gifted touch, Kimi became a powerful enabler—to trust my body and realize the amazing things the mind and body can do even under challenging conditions.”

Kimiko Yamada, a physical therapist and member of USC Physical Therapy Associates, works with cancer survivor Robert Kinaga to help him improve his strength after treatment at USC Norris.

In order to make an appointment for USC physical therapy services, please speak with a treating physician for a referral. For more information, call USC Physical Therapy Associates at (323) 268-7070.
Epigenetics Takes Center Court

USC “Dream Team” is bringing epigenetic research to patient bedside

By Sara Reeve

AFTER DECADES SPENT ON THE BENCH, THE FIELD OF EPIGENETICS IS SCORING RESEARCH ADVANCES AND WINNING MORE ATTENTION FROM SCIENTISTS, FUNDING AGENCIES AND RESEARCH INSTITUTIONS. RESEARCHERS AND CLINICIANS AT THE USC NORRIS COMPREHENSIVE CANCER CENTER AND HOSPITAL ARE WORKING TO PROVE THAT THE EPIGENOME, A LAYER OF BIOCHEMICALS THAT PACKAGE THE DNA, PLAYS A MAJOR ROLE IN CANCER, AND THAT EPIGENETIC DRUGS AND THERAPIES HAVE THE POTENTIAL TO MAKE REAL IMPACT ON PATIENTS’ LIVES.
**Epigenetics continued...**

**What is Epigenetics?**

Epigenetics is the study of changes in gene silencing affected by the epigenome, a series of chemicals that attach to DNA and control access to the genes without actually changing the fundamental genetic information.

**The USC “Dream Team” will focus on the process called DNA demethylation, which effectively de-activates cancer stem cells.**

**The second priority of the project is to test whether epigenetic drugs, in combination with other traditional therapies, can be utilized to treat solid tumors including breast, lung and colon cancers. Currently, the drugs have only proven to be effective against so-called liquid tumors, such as leukemia and lymphomas.**

When the FDA approved these epigenetic drugs, they were evaluated like traditional therapies, with several short treatments of the maximum tolerated doses,” says Laird. “We want to evaluate whether lower doses given over a longer period of time might bring more success with solid tumors.”

**The Project**

With the ultimate goal of accelerating the movement of science from “bench to bedside” where it can benefit patients as quickly as possible, and the immediate aim of seeing results within the three-year term of the grant, the project funded by Stand Up To Cancer will be administered by the American Association for Cancer Research (AACR). The AACR and Stand Up To Cancer’s scientific advisory committee will conduct periodic reviews to ensure that milestones and objectives are being achieved.

**USC “Dream Team” research project has three main areas of focus.**

First, the researchers are trying to understand why the two epigenetic drugs currently approved by the FDA, azacytidine and decitabine, marketed as Vidaza and Dacogen, seem to be effective in some patients and not in others. These drugs are currently approved for the treatment of myelodysplastic syndrome (MDS), a pre-leukemia condition, and have increased the life expectancy of some patients.

Team members will access DNA samples from patients treated by these drugs, for whom outcomes are known, and rapidly assess on a whole genome level whether they can see changes in DNA methylation. “We already know that these drugs work in some of the MDS patients, so if we can figure out who will respond, and who is not going to respond, we can at least limit the future trials to people who will respond, so we don’t waste time trying to get a patient to respond to a drug that doesn’t work for them,” says Jones.

Second, the project focuses on determining whether epigenetic drugs work in combination with other traditional therapies, for whom outcomes are known, and rapidly assess on a whole genome level whether they respond to a drug that doesn’t work for them,” says Jones.

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**The USC “Dream Team” will focus on the process called DNA demethylation, which effectively de-activates cancer stem cells.**

“Imagining that DNA, the genome, is a cookbook, and the genes are the recipes,” says Laird. “Depending on their role, cells will have different recipes that they use frequently (genes expressed) so a cell can perform a specific function, such as replicating and communicating with other cells. In cancer, the recipes are changed. Genetic changes would involve cutting out pages, blacking out ingredient lists—those are changes that really can’t be reversed.”

“Epigenetic changes to the recipe would involve words being crossed out in pencil,” he explains. “Epigenetic drugs would take an eraser to the pencil markings so that the original recipe can be understood.”

**FOR JOHN TURCO, E.D.D., 79, a patient at USC Norris Cancer Institute, life is good. Less than a year after receiving a diagnosis of leukemia, he is receiving a cutting-edge epigenetic medication, decitabine (Dacogen), and is doing well on the treatment. “I’m actually feeling very good,” says Turco. “I’m a very lucky man. I get tired easily, but that honestly seems to be the only symptom I have. I can’t complain.”

Turco, a USC alum who lives in Whittier, Calif., was originally referred to a specialist in Montebello, but the retired assistant principal decided instead to drive 20 miles to be treated at USC Norris. “I feel very comfortable at Norris,” he says. “I had my prostate removed there in April 2006, and I was treated so well. When I needed treatment again, I knew I wanted to go back.”

The level of epigenetic research occurring at USC may one day benefit more patients like Turco, and he is grateful for that fact. “I have a half a dozen friends that are cancer survivors. When they see how well I’m doing with this medication, we all talk about how miraculous the advances in cancer treatment have been over the last two to three years. I am extremely lucky that this treatment was discovered,” he says.

By returning to USC for his cancer care, Turco felt that he was placing the care of his health and welfare in capable hands. “They are nothing but the superstars of cancer treatment at Norris,” he laughs. “I think this hospital is one of the best...absolutely head and shoulders above the rest.”
“Part of the problem that has been identified is the reliability of the currently available drugs,” says Anthony El-Khoueiry, M.D., assistant professor of clinical medicine at the Keck School. “The pharmacodynamics of these drugs may not be adequate to deliver the right dose for the right length of time. There is a new formulation of one of these drugs that will hopefully be more stable and less susceptible to being degraded by one of the enzymes in the cancer itself.”

Stand Up To Cancer has provided funding for three years with the explicit understanding that the group expects to see firm results within that timeframe. “We hope to do all three of those priorities in three years, which is going to be really intense,” says Jones.

The Team
With almost 30 years of experience, Jones is a recognized leader in cancer research, specifically the molecular biology of cancer and the effects of DNA methylation in cancer. In recognition of his influential role in advancing the understanding of epigenetics’ role in cancer, the American Association for Cancer Research (AACR) presented Jones with the 2009 Kiki A. Landon-AACR Prize for Basic Cancer Research. Jones, past president of the AACR, received the award along with Dream Team leader Baylin.

“It’s very rare in science that you can say the work of individual investigators revolutionizes cancer research, but Peter Jones and Stephen Baylin have achieved that kind of paradigm shift,” says Margueri Fott, Ph.D., M.D., AACR chief executive officer. “Their work has changed the way we view molecular causation from a genetic to an epigenetic focus. The potential impact of this work is enormous, and it is already resulting in significant improvements in cancer diagnosis and therapy.”

While much of the scientific community was pursuing the quest to complete the human genome, Jones saw the potential to separate USC from the pack by positioning the university as a leader in epigenetics.

In 2008, and with the support of the Kenneth T. and Eileen L. Norris Foundation, USC opened the USC Epigenome Center, one of the first institutions in the country devoted to advancing epigenetic research.

Laird, who was originally recruited to USC in 1996, was appointed director of the center at its opening. Regarding as an expert in the area of DNA methylation, he sees the potential for epigenetics to change everything scientists understand about cancer. “The field of epigenetics has exploded in every measurable way, from the number of papers and scientists working in this field, to the many ways in which epigenetics has been found to be at the basis of many biological processes including embryonic development, stem cells and cancer,” he says.

Focus on Ovarian Cancer
The wide scope of Laird’s research is a testament to the integral role of epigenetics in human cancer. Projects have included research into the epigenome’s function in ovarian cancer, colon cancer, glioblastoma and esophageal adenocarcinoma. “My level of excitement that epigenetics plays a much more fundamental role in cancer than we ever anticipated early on.”

Laird and his team at the Epigenome Center will be responsible for examining patient DNA samples to assess the effectiveness of various therapies. “The role of the USC Epigenome Center is to analyze the extent of epigenetic changes in the cancer tissues from patients participating in clinical trials of epigenetic inhibitors, and to determine the effectiveness of these drugs in reversing these epigenetic abnormalities,” he says. “Simply put, in the Epigenome Center, our job is to show that the eraser worked.”

The job of the man leading the clinical trials component of the Stand Up To Cancer project will be to bring the science of epigenetics to individual patients. El-Khoueiry, director of the Clinical Investigations Support Office at USC Norris and a Keck School alumnus, is a clinical scientist with extensive experience in colon cancer.

He will bring his expertise in treating patients with solid tumors to the epigenetic arena.

“The understanding of how methylation and gene silencing and histone acetylation affects solid tumors has evolved quite a bit, so the time is just right to explore these therapies now in solid tumors,” says El-Khoueiry.

He and his colleagues in the Division of Cancer Medicine and Blood Diseases will lead trials for patients with metastasized breast, lung and colon cancer, as well as those with early stage cancer. “We will be testing the use of these drugs as adjuvant therapy, meaning patients who have early stage disease who have had resection (surgical removal) of their cancer, and we will be administering therapy to prevent recurrence,” says El-Khoueiry. “After a resection of the tumor, it is thought that patients have microscopic disease left behind, including self-renewing cells, or [cancer] stem cells, and that this therapy will help target those specifically, and help lead to fewer recurrences, and overall better survival for the patients.”

The scientists involved in this project all agree that the needs and concerns of patients need to be held paramount. “The patient’s point of view, as we conduct clinical research, is very important to us as we understand how patients look at the project, what worries exist to their participating, what are their fears, how well are we doing at explaining to them our process, etc.,” says El-Khoueiry. “That’s where the patient advocates bring us this perspective that we wouldn’t otherwise have normally.”

The Future
USC’s Dream Team holds hope that their research will bring new understanding to the science of epigenetics and new treatments to cancer patients.

“The uniqueness here is that the mechanism of treatment is so different than any of the currently used chemotherapies, or even the so-called targeted agents,” says El-Khoueiry. “If the clinical trials confirm the scientific hypothesis, then we are, in some ways, going to the core of the problem, going specifically after those altered or silenced genes in the very early, self-renewing cells. We’re really starting to talk about a real cure.”

EDITOR’S NOTE: At press time, the USC Epigenome Center was awarded a $10.4 million National Cancer Institute grant that is expected to pave the way for more effective treatment and diagnosis for cancer patients. The grant is part of a new federal initiative to support cancer research and promote job creation. — KATE NETH, EDITOR
Donating INSPIRATION

By Jessica Ogilvie

In 2005, Marshall Ezralow stood beside his family at a ceremony to honor the naming of the Renette and Marshall Ezralow Family Research Tower at the USC Norris Comprehensive Cancer Center and Hospital. It was a moment that represented both personal commitment—Ezralow’s late wife was a patient at USC Norris for many years—and a commitment to philanthropy, to medicine and to setting a positive example.

“I hope,” says Ezralow, “that in some small way, I can inspire others to give.” Ezralow has been donating to USC Norris since 1987, and has continued to give generously over the years. His interest in philanthropy, however, is a constant current throughout his life, beginning from a very early age.

Born and raised in East L.A., Ezralow’s parents set an example for the family as early as he can remember. “My parents weren’t wealthy people,” he says, “but I saw my dad and my mother involved in various charities, giving what they could to underprivileged children and community organizations.

After playing football in high school at Montebello, Ezralow went on to study business at UCLA, where he graduated in 1959. After college, he began developing real estate. “My grandfather was a builder in East L.A., and my father was in the building business,” he says. “But I went out on my own at 25.” Ezralow went on to become one of the most successful real estate developers in the country. Marshall and his sons, Marc and Bryan, are partners in the company.

Ezralow’s interest in giving to the medical community started early on in his career. Acting as the president of the L.A. chapter of the Weizmann Institute of Science in the early 1980s, he met a number of individuals who were to become an inspiration for him. “I was involved with some people that I respected who were very philanthropic,” he says. “I enjoyed the idea that anything [Weizmann] did would help the world.”

While continuing his work at Weizmann, he also became involved with STOP CANCER, which provides funding for cancer research and offers grants to scientists. In 1989, the Ezralow family got news that would change their lives. Ezralow’s late wife, Renette—herself a champion for cancer research through the Women’s Cancer Research Fund—was diagnosed with ovarian cancer. She began treatment at USC Norris, and Ezralow immediately turned his trademark drive and focus towards safeguarding her health. The hospital’s standards of care impressed them both, and Renette continued her treatment there for the next 13 years.

“The doctors were so professional with my wife, and responsive to her needs,” says Ezralow. “She was very happy there.”

Over the course of Renette’s care at USC Norris, the Ezralows developed a close relationship with Parkash Gill, M.D., professor and Ezralow Family Chair in Cancer Therapeutics in the Department of Medicine at USC. “Dr. Gill gave Renette treatment, and care well beyond what was necessary,” says Quinn Ezralow, Marshall Ezralow’s daughter-in-law. “The Ezralows have since become supporters of Gill’s work in angiogenesis.

The Ezralow Family Research Tower was named following the family’s $6 million gift to USC Norris, and is a source of both pride and hope for Ezralow. “I’m very proud that our name is on the wall, that we’ve been able to help people,” he says. “Knowing how difficult it is for sick people, and how the family suffers in addition to the patient, I just want to see what I can do. Even if not to find a cure, then maybe to see progress in remission.”

“I still work out five times a week,” he says. “I cross train aerobically, do stretching and weight lifting.” Old football injuries creep up now and then, but, he says, “I muscle through them.”

In the end, Ezralow’s dedication to his health and to philanthropy, are all part of a philosophy that dictates living life to the fullest. “I’m seizing the moments,” he says. “Because you only get one shot. That’s the bottom line.”
For patients diagnosed with malignant glioma—a type of cancer that commonly starts in the brain—the prognosis is grim, says Florence M. Hofman, Ph.D., professor of pathology at the Keck School of Medicine of USC. In addition, “there really haven’t been any major treatment advances in the past 10 to 15 years,” she says.

One of the toughest-to-treat cancers—malignant glioma—may have met its match in the form of a new drug currently being tested by USC researchers.

By Carrie St. Michel

This discouraging lack of progress, however, may well be on the brink of a breakthrough thanks to the work of Hofman and her research team.

For the past five years, they have been researching new treatment approaches for malignant glioma, which is among the most challenging of cancers. As Hofman notes, the statistics are daunting. “From the time of diagnosis, most gliomas prove to be fatal within eight to 12 months.”

Several factors contribute to the vexing nature of this devastating disease. Glioma, which is the type of brain tumor with which Sen. Edward Kennedy was diagnosed last year, is the most common primary tumor of the brain; primary, because the tumor originates from brain cells, as opposed to cells located elsewhere in the body that then migrate to the brain. Gliomas, which account for more than 15,000 U.S. deaths annually, are difficult to attack surgically because of the invasive characteristics of the tumor cells.

In addition to surgical limitations, Hofman explains, “Gliomas are particularly challenging because there’s a lack of effective agents for therapy. Patients frequently become resistant to temozolomide, the most common drug for glioma treatment. Another problem with temozolomide,” she adds, “is that while it’s very effective in killing glioma cells, it does not affect the tumor’s vasculature—the blood vessels that feed the tumor and enable it to grow.”

Hofman and her associates, however, may well be on the research road leading to a medication that overcomes these obstacles. Their studies are part of the Glioma Research Group—an alliance of USC laboratories dedicated to developing treatments for primary central nervous system tumors. The group includes Hofman, Thomas C. Chen, M.D., Ph.D., Axel H. Schönthal, Ph.D., Stan G. Louie, Pharm.D. and Nicos A. Petasis, Ph.D.

For the past five years, they have been researching new treatment approaches for brain cancer in her laboratory. Above left: Hofman, “Animals with tumors, who had received DMC, had smaller tumors and fewer tumor blood vessels.”

In a paper presented recently at the American Association for Cancer Research’s annual meeting, Hofman discussed the results of her research team’s study, which was carried out in collaboration with Jenilyn Virrey, a Ph.D. candidate who assists in much of Hofman’s research.

“Once we established that DMC was effective in blocking the growth of new blood vessels in the ‘test tube,’” says Hofman, “we wanted to determine whether this agent was also effective in animals.” The answer came back affirmative. Specifically, according to Hofman, “Animals with tumors, who had received DMC, had smaller tumors and fewer blood vessels in the tumors.”

This outcome is significant. “The outstanding and unique point of our study,” Hofman notes, “is that DMC is effective on the tumor’s vasculature. Previous work from our group showed that DMC had cytotoxic effects on gliomas, but now we know it also can destroy the tumor’s blood supply and is thus an efficient and effective anti-tumor agent.”

Looking ahead, Hofman says, “We’re now enthusiastic about eventually having DMC as a drug in our arsenal for cancer patients. And this is critical, as we are beginning to accept the idea that we must treat cancer as a chronic disease.” Adding, “Until we find a cancer cure, patients with brain cancer should be able to live years with the disease—not months—and live symptom free.”

Toward that end, Hofman and her team are continuing to study DMC. “The goal,” she explains, “is to determine the optimal combination of agents for greatest cytotoxic effects on brain tumors.”

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Physician Profile

Recruiting Excellence

Leader in women’s cancers comes aboard at USC Norris Comprehensive Cancer Center

BY CHERYL BRUYNNICKX

DEBASHISH (DEBU) TRIPATHY, M.D., a national figure in breast cancer research, has joined the USC Norris Comprehensive Cancer Center as co-leader of the Women’s Cancer Program.

Tripathy joins Michael Press, M.D., Ph.D., professor of pathology, who has been associated with the Women’s Cancer Program for the last 16 years.

Tripathy was also recently appointed professor of medicine by Keck School of Medicine of USC Dean Carmen A. Puliafito, M.D., M.B.A. He holds the Priscilla and Art Utene Chair in Women’s Cancer and is head of the section of women’s cancers, Division of Oncology, in the Department of Medicine.

“Dr. Tripathy is a national authority in breast cancer,” Puliafito says. “We are delighted that he has come to USC as we strengthen our clinical research activities and our patient-focused programs.”

Tripathy comes to USC from the University of Texas Southwestern Medical Center at Dallas, where he served as professor of internal medicine, director of the Komen/UT Southwestern Breast Cancer Research Program and holder of the Annette Simmons Foundation Chair in Breast Cancer. He was also president and chief executive officer of Physicians’ Education Resource in Dallas, a continuing medical education and publishing company specializing in oncology and hematology.

“I believe that USC is responding to a new mission that is an expansion of patient care, a bigger commitment to research and a dedication to having the two work side by side,” Tripathy says. “I believe that clinical care, clinical research and laboratory research all go hand in hand.”

As a new co-leader of the Women’s Cancer Program, Tripathy has identified several goals, including developing a nationally recognized women’s cancer service; increasing the number of treatment and clinical trial options for patients; developing a clinical trials and research program that matches the needs of patients and interfaces with the areas of scientific excellence at USC; setting up community outreach programs and forums; and establishing a national and international leadership position in medical peer oncology education.

Tripathy’s primary area of interest is breast cancer therapy. For the past 20 years, he has studied growth factor receptors, important targets in breast and other cancers. He was part of the original team that brought the now commonly used drug Herceptin into clinical care.

“Breast cancer is such a rich area of multidisciplinary research and treatment,” he says. “I find it to be really fascinating, not only from a scientific aspect, but from the social and cultural aspects as well.”

Currently, his research focus is on expanding what is known about growth factor receptors and developing newer treatments for patients who are resistant to the existing therapeutic options.

“Dr. Tripathy’s work will enhance our efforts to bring basic molecular research on breast cancer from the lab to the clinic, where we can directly benefit patients,” says Peter Jones, Ph.D., D.Sc., director of the USC Norris Comprehensive Cancer Center.

Beyond his expertise in clinical research, Tripathy is involved in patient care and survivorship issues. He is particularly interested in the patient perspective of the cancer experience and dissemination of informational tools. Tripathy is co-author of Breast Cancer: Beyond Convention, a book featuring advice from other prominent physicians such as Susan Love and Dean Ornish.

“I think it is very important to open up a dialog with patients and develop therapies based on side effects.”

Tripathy acknowledges that this is a relatively new way of looking at things, but that the quality of life of patients is becoming more and more important as survival rates increase.

“We want to go way beyond the traditional model of care to develop a true patient-centered program at USC,” he says. “Patients are a big part of the equation and we want to design care—from clinical trials to how therapies are explained—with their needs in mind.”

Tripathy has received numerous awards, including the Heroes Award, presented by the Breast Cancer Fund for excellence in clinical care. He also received the Award in Medical Research by the Greater Dallas Asian American Chamber of Commerce for his outstanding research accomplishments in breast cancer.

“Most of the therapies developed to date have had a singular goal: ‘Does it kill cancer?’ but they don’t take into consideration what it does to the patient,” says Tripathy.

“I am excited to come to USC because historically this place has a rich track record of excellence in the basic sciences, and the USC Norris Comprehensive Cancer Center is one of the original cancer centers from 1973,” Tripathy says. “All of those things together, along with the university’s new commitment to patient care and clinical research, told me that this is the right place and the right time.”

“The result of this new research will be a greater focus on the quality of life of patients.”

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Hosted by the USC Norris Cancer Hospital, the event brings together survivors for a morning of celebration and inspirational speakers. Guests were treated to the sounds of Disneyland’s Bayou Brass Band while they enjoyed a continental breakfast under sunny skies. Harv the Magician roved the crowd, entertaining kids with balloon animals, and numerous booths offered information on survivorship issues.

Chorda Tympani, a medical student barbershop quartet who entertained the crowd with their rendition of “Come Fly with Me” during the formal program, had a very special member among their ranks. Robert Martinez, a second-year medical student at the Keck School of Medicine, is also a former patient of USC Norris, where he was treated for colon cancer in 2004.

He lauded USC Norris as an exceptional treatment facility that treats the “whole person” with compassion. Martinez, who was inspired to study medicine because of his experience with cancer, encouraged the crowd to share their stories with others.

“I walked into Norris and I felt like I had come home,” said Kompaniez, whose husband also was successfully treated for esophageal cancer a year earlier at USC Norris. “The care, the love, the support; from the minute you drive up at the valet … you feel nothing but taken care of.”

Janet Chaudhuri, a past associate provost of USC, enjoyed the celebration with her husband, Arun, who was the eighth patient at the USC Norris Cancer Hospital when it opened in 1983. They have been attending the Festival of Life since its inception.

“I can’t say enough about how wonderful Norris has been to us over the years,” said Janet Chaudhuri. “Not only is the care excellent, but the human qualities you find here are off the charts.”

White doves were released at the end of the event, along with a cheer to current patients at the USC Norris Cancer Hospital, in the hopes that next year, they will join the ranks of survivors celebrating at the Festival of Life.
New Fundraising Tool Offers Personal Web Pages

Supporters of the USC Norris Comprehensive Cancer Center and Hospital have a new way to express themselves, just by going on the Web. USC Norris Tribute Funds are a unique opportunity to share stories of gratitude, memories and milestones while raising money for a favored cause at USC Norris.

Found online at uscnorris.com/Tributes, “In Celebration” gifts are great ways to honor a special date, remember loved ones or thank a caregiver. This online tool allows users to create their own Web pages, share stories and recruit others in the fight against cancer. Three types of funds are available: In Honor (of special occasions such as anniversaries, weddings and birthdays), In Memory, and In Gratitude (to a doctor, nurse, caregiver or friend).

“When people’s lives intersect with the USC Norris, strong relationships are formed,” says Elliott Law, online programs manager for the Office of Development, who helped develop the USC Norris Tribute Funds. “The Web pages offer a chance for people to thank those involved in their cancer experience and share their stories in a personal way.”

GIFT ANNOUNCEMENTS

• Eugene Hoffman and Valerie Foster Hoffman have donated $1 million to support breast cancer research at the USC Norris Comprehensive Cancer Center.

• LesAnn and Ron Havner of the Havner Family Foundation have pledged a gift of $100,000 to fund the research of Michael Kahn, Ph.D., the Provost’s Professor of Medicine and Pharmacy, by providing a fellowship in his lab. The Havners presented the first installment of $50,000 to Kahn at a special dinner on June 29.

Brick Dedication

Supporters of the USC Norris Comprehensive Cancer Center gathered on April 5, to dedicate bricks engraved with names of loved ones. Nearly 90 new bricks have been added to the walkway in the Hinderstein Family Meditation Garden next to the Harold J. Norris Cancer Research Tower. Each brick is engraved with a personal message creating a lasting legacy for both the giver and the USC Norris Comprehensive Cancer Center.

“Design, Jazz and Research”

Hosted by Keck School of Medicine alumnus Paul Toffel and his wife Beverly (far left) at their La Cañada estate on May 3, the Design, Jazz and Research event aimed to raise awareness about head and neck cancers and the USC Norris Comprehensive Cancer Center and Hospital. USC supporters and donors were treated to a private tour of the residence—named as the 2008 Pasadena Showcase House of Design—and delicious food. Guests also heard a presentation by Keck School otolaryngologist Urmatt Sinha, M.D., (right) on his head and neck cancer research and enjoyed the comedy and singing of thyroid cancer survivor Joe Picopo (center), best known as a former cast member of “Saturday Night Live.” Pictured alongside Sinha is his wife Sheila Kat, M.D.

Brick Dedication

Larry and Phyllis Marquardt near their brick in the Hinderstein Garden.

“...we are grateful to be a part of this event that Expedition Inspiration has created to raise funds for breast cancer research.”

The Americana at Brand hosted the first 5k / 10k Expedition Inspiration Run 4 Her Life for Breast Cancer Research on Oct. 18.

Proceeds supported breast cancer research at the USC Norris Comprehensive Cancer Center and the Expedition Inspiration Annual Laura Evans Memorial Breast Cancer Symposium. “We are grateful to be a part of this event that Expedition Inspiration has created to raise funds for breast cancer research,” says Michael Peas, M.D., Ph.D., professor of pathology at the Keck School of Medicine of USC and the Harold E. Lee Chair for Cancer Research at USC Norris Comprehensive Cancer Center. “As we learn more about the molecular and genetic causes of breast cancer, we are positioned to attack this deadly disease at its origin and to prevent its development in thousands of women.”

The Americana at Brand, located in the heart of downtown Glendale, offered entrants and guests a variety of live entertainment, a Health Expo and post-event party. In addition to the competitive 5K / 10K races, the event also offered a 5K Family Fun Run / Walk on a USA Track & Field-sanctioned and certified flat, course. For more information, visit www.run4herlife.org.
What is a Clinical Trial?
Clinical trials are essential in evaluating new methods of preventing, diagnosing and treating diseases or conditions that have produced promising results in the laboratory. Studies are conducted across the country, relating to hundreds of diseases or conditions, from depression and dementia, to cancer and pain control.

How do I know if I am eligible?
Each clinical trial is designed to answer a research question in a specific population. In addition, each clinical trial has specific criteria, which a patient must meet to be eligible to participate in the trial.

Are they safe?
Clinical trials have several levels of oversight to ensure patient safety. Every clinical trial in the U.S. is required to be reviewed and approved by an Institutional Review Board—an independent committee of physicians, statisticians, community advocates and others that ensure a clinical trial is ethical and the rights of study participants are protected. All institutions that conduct or support biomedical research involving people must, by federal regulation, have an IRB that initially approves and periodically reviews the research.

In addition, most institutions conducting clinical trials have appointed an outside committee of scientific experts, called the Data Safety and Monitoring Board (or DSMB). The specific mission of the DSMB is to ensure that the trial is being properly conducted and that there are no problems with patient safety.

Before enrolling in a clinical trial, a participant must review an ‘informed consent’ document with the trial staff or investigators, which clearly explains what will happen in the trial, including possible side effects or risks.

What are they important?
Clinical trials are often the only way to answer very important scientific questions that can affect the medical care, treatment guidelines, and health of the general public. Persons who participate in clinical trials therefore provide enormous contributions to advances in biomedical research and ultimately to the types and manners of medical care provided to the public.

For more information on clinical trials at the USC Norris Comprehensive Cancer Center and Hospital, visit uscnorriscancer.usc.edu/health/uscnorris/clinical_trials, or call the Clinical Investigation Support Office at (323) 865-0451.
Get to know a doctor.
Visit a patient support group.
Watch a medical miracle unfold.

It's all happening at DoctorsofUSC.com