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**USC NORRIS CANCER REPORT**

A publication of the  
USC Norris Comprehensive  
Cancer Center and Hospital

The USC Norris Cancer Hospital is affiliated with the USC Norris Comprehensive Cancer Center, one of the original eight Comprehensive Cancer Centers as designated by the National Cancer Institute. The USC Norris Comprehensive Cancer Center is part of the Keck School of Medicine of USC.

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W. Martin Kast Named Eminent Scientist of the Year

W. Martin Kast, Ph.D., professor of molecular microbiology and immunology, and obstetrics and gynecology at the Keck School of Medicine of USC, was named the 2010 Eminent Scientist of the Year and North American Immunologist of the Year by the International Research Promotion Council (IRPC).

Kast received the Millennium Golden International Award for his life’s research of human papillomavirus (HPV), which is linked to cervical and other forms of cancer.

“There are about half a million cases of cervical cancer diagnosed each year, of which 80 percent or so are in underdeveloped or developing countries,” Kast said. “This award supports our efforts in finding new treatments that could benefit patients in all countries.”

IRPC was formed in 1993 with the aim of coordinating the activities of scientists whose research activities tackle issues facing Third-World countries. The organization has five chapters spanning the globe and counts more than 300 scientists among its members.

Kast is also the Walter A. Richter Cancer Research Chair at Keck and co-leader of the Tumor Microenvironment Program at USC Norris Cancer Center. His research is focused on developing effective new therapies for cervical cancer, prostate cancer and melanoma.

USC Football Fans “Fight On” for Breast Cancer Awareness

Does pink clash with cardinal and gold? Not during October, Breast Cancer Awareness Month. The Trojan Family wore all three colors proudly to promote breast cancer awareness at the Oct. 2 USC-Washington football game. Hundreds of football fans stopped by the Doctors of USC booth at the front of the Coliseum to talk to breast cancer experts about breast cancer screening. Visitors picked up 650 pink and white tote bags, as well as hand sanitizers, educational materials and embroidered pink ribbon stickers from the physicians and several breast cancer survivors who volunteered at the booth.

At the USC Bookstore and bookstore tents outside the Coliseum, specially designed pink T-shirts featuring the USC Norris Comprehensive Cancer Center and Hospital logo and the words, “For a breast cancer cure. Fight on,” were flying off the shelves. Proceeds from the T-shirt sales benefit cancer research at USC Norris.

The USC Song Girls and Spirit Leaders wore the pink T-shirts during pre-game festivities, and the USC football coaches wives also wore them for the game.

The highlight of the day came at halftime, when an inspirational video was broadcast on the Jumbotron urging the Trojan Family to promote breast cancer awareness. Bringing the video’s message to life, five breast cancer survivors and five USC Norris breast cancer experts, joined by Layla Kiffin, wife of USC Trojans head football Coach Lane Kiffin, marched onto the field to loud applause from the stands.

The one-minute video can be viewed at www.uschospitals.com/breastcancer.

USC breast cancer physicians (wearing cardinal polos) and survivors (wearing pink and white T-shirts) share the field at the Oct. 2 USC football game vs. Washington. From left are: Dennis Holmes, M.D., Georgia McCreery, Jennifer Feikin, Heather Mac Donald, M.D., Mary Yamashita, M.D., Pulin Sheth, M.D., Ami Evidente, Agustin Garcia, M.D., Kaprisha Valleclillo and Jennifer Mok.
Keck School Researcher Discovers a New Method to Overcome Radiation Resistance in Leukemia

A team of researchers led by Fatih M. Uckun, M.D., Ph.D., of The Saban Research Institute of Children's Hospital Los Angeles—an affiliate of the Keck School of Medicine of USC—has determined that radiation resistance in leukemia can be overcome by selectively attacking a molecular target known as SYK tyrosine kinase.

B-lineage acute lymphoblastic leukemia (ALL) is the most common cancer occurring in children and adolescents. Despite having received intensive chemotherapy, some patients have recurring disease, known as relapse.

“The standard approach to treating relapsed patients has been additional chemotherapy to achieve a second remission followed by very intensive treatment that could include “supralethal” chemotherapy, total-body irradiation (TBI) and hematopoietic stem cell transplantation. However, radiation resistance of leukemia cells hampers the success of these rigorous therapeutic approaches and results in poor survival.

“We knew that we could kill radiation-resistant leukemia cells if we only knew what made them so resistant. So we set out to determine the mechanism,” said Uckun, who is also professor of research pediatrics at the Keck School. “Once we determined the mechanism, the next step was obvious—to rationally design a drug that would take out that specific target.”

Uckun’s research team has now provided the first proof-of-principle that radiation resistance of an aggressive leukemia can indeed be overcome using this rationally designed specific drug directed against the resistance machinery of leukemia cells.

“Radiation therapy was much more effective against leukemia in mice when it was combined with this new drug candidate that we named C-61,” said Uckun.

USC NORRIS NURSE PRACTITIONER SPECIALIST HONORED FOR EFFORTS TO STEM PAIN

Pamela Merriam, R.N., a nurse practitioner who runs USC Norris Cancer Hospital's CARE Team/Pain Medicine program, has won the 2010 Robert Angarola Excellence in Pain Management Award.

Merriam's dedication to cancer patients experiencing pain as a result of their disease or treatment (or both) led to her being named the winner of the biannual award, bestowed by the Southern California Cancer Pain Initiative (SCCPI), an organization whose mission is to promote pain relief for those with cancer.

The award, the highest honor given by the organization, is named in honor of Robert Angarola, an attorney who led national efforts to advance pain management.

As a member of the USC Norris CARE (Comfort, Aid, Research and Education) Team, Merriam works in palliative care, helping patients manage their pain and uncontrolled symptoms with medication and education.

Palliative care is actually aggressive symptom management and is often confused with end-of-life or hospice care.

“Our focus is on actively addressing uncontrolled symptoms,” Merriam said. “Patients suffer from pain and many side effects while undergoing curative or life-prolonging therapy.

“Sometimes treatments can be complicated. Pain is one of the largest issues and biggest fears facing cancer patients.”

For more information, please call (323) 865-3761 or go to www.helpforpain.com.

Pamela Merriam, R.N., consults with a patient on pain management.
USC WINS GRANT TO STUDY ADVANCED PROSTATE CANCER THERAPY

The National Institutes of Health has awarded a USC Norris Comprehensive Cancer Center research team a three-year, $1.6 million grant for a clinical trial of a new drug to treat advanced prostate cancer. The drug holds promise for targeting only the diseased cells and avoiding side effects.

As the primary investigator, Jacek Pinski, M.D., associate professor of medicine at the Keck School of Medicine of USC, will conduct a trial of the new anti-cancer drug, AEZS-108 (AN-152). Pinski will lead a team that uses new methods for collecting and analyzing data about the drug’s effectiveness.

“Because the drug is expected to be delivered specifically to the cancer cells, we hope to avoid damaging healthy tissue and side effects,” he said. Prostate cancer is primarily a disease of older men, who often have other medical conditions, so the toxicity of medication is a great concern during cancer treatments.

In previous research, Pinski found that cancerous cells in human prostate tissue contain a unique protein on their surface called luteinizing hormone-releasing hormone receptor (LH-RH).

Andrew Schally, Ph.D., a Nobel Prize laureate who will collaborate on Pinski’s upcoming study, developed AN-152, a compound that specifically damages cells containing this protein, including prostate cancer cells.

The commercial name of AN-152 is AEZS-108, produced by Aeterna Zentaris Inc. The drug has been studied in gynecologic cancers in women and has been shown to be effective and well-tolerated. Preclinical studies of animal models with prostate cancer also have demonstrated positive results with the drug.

New Technology Designed for Cancer Detection

Keck School of Medicine of USC researchers, working with engineers at the California Institute of Technology, have developed a new process for detecting circulating tumor cells (CTCs), cancer cells shed by tumors into the bloodstream. The test will allow physicians to more accurately and quickly check the status of a patient’s cancer and response to treatment.

The research was led by Amir Goldkorn, M.D., assistant professor of medicine at the Keck School of Medicine of USC and an oncologist at the USC Norris Comprehensive Cancer Center who specializes in malignancies of the genitourinary tract.

After drawing cancer patients’ blood, the researchers passed it through a microfilter made out of a synthetic polymer. The red and white blood cells passed through the slots of the filter while the CTCs remained. Researchers then analyzed the CTCs for the presence of telomerase, an enzyme that allows cancer cells to proliferate and is considered a nearly universal cancer marker.

Goldkorn said the filter system was able to process blood samples in a few minutes, capturing cancer cells with 90 percent efficiency and viability, and detecting telomerase from as few as 25 cancer cells in a standard blood sample.

“Live capture of CTCs offers ready access to patient prognosis and response to treatments, which enables physicians to make better decisions about care,” he said.

“Live capture of CTCs offers ready access to patient prognosis and response to treatments, which enables physicians to make better decisions about care.”
Preet Chaudhary, M.D., Ph.D., chief of the Jane Anne Nohl Division of Hematology and Center for the Study of Blood Diseases at the Keck School of Medicine, received the outstanding Investigator award from the Western Society for Clinical Investigation at the society’s regional meeting in January.

Chaudhary, the Ronald H. Bloom Family Chair in Lymphoma, is a professor of medicine at the Keck School of Medicine, co-leader of the Leukemia and Lymphoma Program and associate director for translational research at the USC Norris Comprehensive Cancer Center. He is an internationally renowned physician-scientist. His research interests include several areas of cancer, including AIDS-associated cancers, cancer drug resistance, biology of normal and leukemic hematopoietic stem cells, programmed cell death and cellular signaling.

“Preet Chaudhary is an exceptional physician-scientist who received his training at the best institutions and worked with outstanding mentors,” said Peter A. Jones, Ph.D., D.Sc., director of the USC Norris Comprehensive Cancer Center. “The cancer center considers itself very fortunate to have a person of his acumen leading the division of hematology, and we are thrilled that he has been recognized by his peers in this way.”

Peter Jones to Step Down from Cancer Center Directorship, Focus on Research

A deep passion for research has driven Peter A. Jones, Ph.D., D.Sc., to a number of great successes as director of the USC Norris Comprehensive Cancer Center for the past 17 years. And it is his love for science that ultimately informed a recent decision to step down from his leadership position at USC Norris, pending the appointment of his successor.

“The most important reason I am stepping down as director is a positive reason,” said Jones, who has served as director of the cancer center since 1993. “My research field of epigenetics is really taking off. I want to be able to concentrate on a rapidly expanding field, a very exciting field which is attracting international interest.”

Chaudhary Honored as ‘Outstanding Investigator’

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USC Norris Brightens Holidays with Rose-Colored Lasses

Smiles were in bloom Dec. 7 at the USC Norris Comprehensive Cancer Center and Hospital, when the 2011 Tournament of Roses Royal Court made their yearly visit to patients, faculty and staff. Above, USC Norris Day Hospital patient Angelica Gonzales enjoys a visit with the Rose Parade Royal Court. From left, top: Princess Michelle Washington, Princess Kathryn Thomson. Bottom, from left: Queen Evanne Friedmann, Princess Tatyane Berrios. The young women, official ambassadors for the annual Pasadena Tournament of Roses Parade, spread holiday cheer among day hospital patients and met with faculty physicians to learn more about the work that goes on at USC Norris.
EMPOWERED by INFORMATION

Cancer patients and their families can access relevant information at the Patient Education and Outreach Center

BY SARA REEVE

Upper left: Relevant and up-to-date reference books are an important feature of the Patient Education and Outreach Center. Lower left: Patients and families are welcomed by the center’s inviting and warm atmosphere. Right: Program specialist and center manager Zul Surani works with trained volunteers to provide accurate information to patients and their families.
WHEN PATIENTS RECEIVE A DIAGNOSIS OF CANCER, they and their families may feel anxious and lost, especially as they try to understand what lies ahead. The USC Norris Comprehensive Cancer Center offers a dedicated resource to help patients and families sift through and identify relevant, up-to-date information—the Patient Education and Outreach Center (PEoC) and Jennifer Diamond Cancer Resource Library, which opened in 2008.

“When people are diagnosed with cancer, they are often like a ship without a rudder,” says Zul Surani, program specialist and manager of the center. “They can be frantic, looking for information. People are really scared.”

The Patient Education and Outreach Center is a state-of-the-art cancer resource facility of the Norris cancer center devoted to patients, their families and community members seeking information about cancer. With support from the National Cancer Institute’s (NCI) Cancer Information Services, the center also performs outreach activities and conducts informational programs relevant to the communities it serves.

The center features computers, reference books, printers, DVDs and Internet access. In addition to manual and computerized information, the center has live phone help with specialized counselors with training from the NCI, a patient navigation information system and trained volunteers to assist with access to cancer-related resources.

“PEoC is an excellent source for the latest, accurate cancer information for patients and their families, health professionals and the general public,” says Surani. “People are generally looking for cancer information that is in understandable language and pertinent to their diagnosis and treatment plan. We are able to link cancer patients and their families to existing sources of quality information.”

Health education students and trained volunteers are available to assist with searches for information on a variety of topics, including basic disease information, clinical trials, prescription drug options and treatment side effects, among others.

That high-quality information was difficult to uncover for Jennifer Diamond and her family. When she was diagnosed with appendiceal carcinoma, a rare form of appendix cancer, she and her family found it extremely hard to access information about her disease. After Jennifer passed away at age 30, her parents—Alice and Harvey Diamond—vowed to help others by providing resources to cancer patients and their families.

The library was the sixth of its kind to be funded by the Jennifer Diamond Foundation, a fundraising and outreach organization created by Jennifer during her illness.

Since the opening of the Patient Education and Outreach Center, patients and families have been welcomed by its calm atmosphere, complete with a relaxing water fountain and serene music.

“My mother was treated here at Norris, so I understand how frantic you can become when you want the right information,” says Surani. “I understand what patients and families need when in that state. We try to help them reduce their anxiety.”

The center also partners with community organizations in surrounding neighborhoods to help develop educational efforts to reach people who do not have easy access to cancer information and services.

“We have developed targeted efforts to partner with communities experiencing breast cancer disparities and are providing them information and access to screening and treatment,” says Surani. “Comprehensive cancer centers like USC Norris can help bring new advances in cancer treatment to communities that need it the most.”

For Surani, the most vital work of the center is arming patients and families with relevant and up-to-date information in their time of need.

He shares this example: “A young patient who must have been in her 40s rushed in through the library back door on a recent Friday afternoon,” he says. “She looked panicked and stressed but determined to make sense of her recent breast cancer diagnosis and treatment plan. . . . She was navigated to where the breast cancer books are located on the shelves and websites where high quality information can be found to aid her in understanding her diagnosis and treatment, which includes removal of both her breasts. . . . Calmed by the peaceful environment in the library, the healing music, and information that empowered her, she profusely thanked [a volunteer], which was followed by a hug. On her way out of the library to fight one of the biggest challenges of her life, she stopped to admire the fountain/sculpture and then turned back and said: ‘I will be back soon to see you all, but wish me luck.’ We all felt honored to have helped during her time of adversity.”

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The Patient Education and Outreach Center is located on the ground level of the Harlyne J. Norris Cancer Research Tower. It is open daily from 10 a.m. to 3 p.m. and is staffed by volunteers and USC Norris staff. For more information, call (323) 442-7800 or email PEOC@usc.edu.
BACK to health
IN OCTOBER 2009, JULIE ANNE LAFUENTE was pursuing a career in wardrobe and set design for the film industry when a fall in a parking garage left her with pain in her left leg. A recent college graduate and transplant to Los Angeles, Lafuente, then 21, was initially diagnosed with a sciatic pinch and told to take pain relievers. But when the pain persisted for months, an MRI scan revealed a large osteosarcoma—or bone cancer—on her sacrum, pelvic bone and sciatic notch. The tumor had also invaded the spinal canal, involving nerves in the area.

After consulting with an orthopedic specialist and a neurosurgeon at her primary hospital, Lafuente was referred to the USC Spine Oncology Program. Thomas Chen, M.D., and Patrick Hsieh, M.D., are co-directors of the USC Spine Oncology Program at the USC Norris Comprehensive Cancer Center and Hospital.

“They told me that Dr. Hsieh was the only specialist in the area who would be willing to do the surgery I needed,” says Lafuente.
Faculty physicians associated with the USC Spine Oncology Program seek to maximize functional ability, quality of life and survival for cancer patients with spinal involvement. The team of experts comprises neurosurgeons, endovascular neurosurgeons, medical oncologists, radiation oncologists, radiation physicists, plastic surgeons and neuroradiologists, who are driven to find a cure for cancer. The collective expertise of these specialists ensures the safest and most effective customized treatment plan for every patient.

“We have a unique spine center that includes treatment for spine tumors far beyond the capability of most institutions,” says Hsieh. “Our program offers the most advanced surgical, radiosurgical and chemotherapy treatment options to optimize preservation of neurological function and to achieve a cure when possible.”

More than 20 percent of all cancer patients will have involvement of the spine. Many of these patients will suffer spinal cord compression that can lead to paralysis and other neurological injury. Surgery, radiosurgery or radiation treatment can halt neurological deterioration.

“Our program offers the most advanced surgical, radiosurgical and chemotherapy treatment options to optimize preservation of neurological function and to achieve a cure when possible.”

— PATRICK HSIEH, M.D., CO-DIRECTOR OF THE USC SPINE ONCOLOGY PROGRAM
AT THE USC NORRIS COMPREHENSIVE CANCER CENTER AND HOSPITAL
Van Urfalian

beam of high-dose radiation with minimal radiation exposure to sur-

large doses of targeted radiation. The treatment is delivered via a

guidance to track and destroy small lesions through the delivery of

outpatient setting without any incisions.

CyberKnife radiosurgery, a procedure that can be provided in an

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miNimally iNvaSive

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percent better. I know that’s not quite true, but it’s how I feel!”

standing healthy tissues, essentially eliminating the risk of leaving any

microscopic disease behind,” he says. “By removing the entire tumor

tumors because it doesn’t require incision, it can shrink the tumor and

leaving microscopic cells behind, putting the patient at high risk for
tumor recurrences, which will shorten life expectancy,” says Hsieh, who

has extensive experience with metastatic and primary spinal tumors.

“With this more advanced technique of en bloc tumor excision, we take
the tumor out in whole, along with a rim of surround-

rounding healthy tissue. Since there is no open incision or invasive

frame, patients typically experience improved comfort.

“The CyberKnife is sort of a bridge between traditional radia-
tion therapy and surgery,” Hsieh says. “When we are dealing with
metastatic tumors, which are tumors that have spread from other

parts of the body to the spine, the CyberKnife is one of the options

that we offer patients. It is an effective treatment for these types of

tumors because it doesn’t require incision, it can shrink the tumor and

it can reduce the patient’s pain. One of the main advantages of the

This type of radical surgical removal of tumors in the spine is con-

sidered to be the most complex and technically demanding procedure

by neurosurgeons, spine surgeons and orthopedic surgeons.

Lafuente’s en bloc surgery, which took place at USC Norris Cancer Hospital in September 2010, took two days to complete.

“I knew going into surgery that I could possibly lose nerves and

maybe even my entire left leg,” she says.

Lafuente recovered at USC University Hospital for nearly a

month and completed another month of rehabilitation at a transitional

care unit. However, by Christmas, she was well enough to travel to

Texas to spend the holidays with family.

“I’m feeling very good,” says Lafuente, who is recovering at a

remarkable rate. “In comparison to how I was before surgery, I’m 100

percent better. I know that’s not quite true, but it’s how I feel!”

Hsieh concurs, “I am very happy with Julie’s surgical results. She

is doing really well and is disease free at this point.”

MINIMALLY INVASIVE

TREATMENTS

For patients with metastatic disease, the main goals of treatment are to

preserve neurological function and lessen pain. Local tumor control is

often done through minimally invasive techniques, according to Hsieh.

If a patient does not have neurological compromise or mechanical insta-

bility, radiation therapy is often recommended over surgery.

USC is one of several centers in Southern California to offer

CyberKnife radiosurgery, a procedure that can be provided in an

outpatient setting without any incisions.

The CyberKnife uses robotic technology and advanced image

guidance to track and destroy small lesions through the delivery of

large doses of targeted radiation. The treatment is delivered via a

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the tumor out in whole, along with a rim of surrounding healthy tissues, essentially eliminating the risk of leaving any

microscopic disease behind,” he says. “By removing the entire tumor

as a single piece we’ve been able to show that people have less of a

chance of tumor recurrences, which prolongs their survival.”

Lafuente concurred, “I am very happy with Julie’s surgical results. She

is doing really well and is disease free at this point.”

Despite facing cancer twice at young ages—along with all

the side effects that come with treatment—Lafuente maintains

a steadfast sense of optimism.

“I’m a lot better than my doctors thought I would be by this time,” says Lafuente, who at press time was five months

out of surgery and walking with the assistance of a cane.

“I’ve had a lot of progress. Right now, I am cancer free.”

She credits her surgeons at USC Norris with giving her a

realistic outlook about her two-day surgery, the recovery she

would face and the side effects she would endure.

“I felt very comfortable at Norris,” says Lafuente. “They

were very honest with me in terms of what could happen, so

when I came out of surgery I felt like ‘Oh, it’s not that bad.’”

Lafuente is also fortunate to have strong support from

friends, family and her faith to help keep her attitude positive.

Over a dozen family members came from Texas for her surgery,

and others who were unable to travel organized a fundraising

barbecue. Her mom and boyfriend spent numerous nights

at her bedside in the hospital.

“The support I have has been a tremendous help. My

positive attitude comes from knowing that I have people who

love me and that I’m not done here yet,” she says.

When times got rough, Lafuente turned to journaling to

express her feelings.

“Have faith and hope and write your feelings down,”

she recommends to other patients. “Even when I was in a

bad mood, it helped me get over it. Journaling helped me

get through the day.”

Always looking toward the future, Lafuente hopes to

some day resume some of her favorite activities.

“I would really like to be able to dance without falling

over,” she says, with a bright smile on her face. “I dance a bit

now—my boyfriend holds me up. But I can’t go as fast as I

used to.”

She plans to dance more—and swim—as soon as the

braces that support her leg and back can be removed.

“I definitely ended up way ahead of the worst possibilities,”

she concludes.
CyberKnife is that you can deliver high doses of radiation very precisely to a specific area. It is very effective in shrinking and controlling tumor growth, but it’s not meant to replace traditional open surgery.”

According to Thomas Chen, M.D., associate professor of neurological surgery and director of neuro-oncology at the Keck School of Medicine, who is also a surgeon trained in spine oncology, the CyberKnife is also useful for patients with very small lesions.

“Instead of getting radiation every day for a certain amount of time, they are treated for one day with the CyberKnife,” he says.

For patients who are not candidates for CyberKnife radiosurgery and require direct surgical excision of spine tumors, the program offers minimally invasive spine surgery. USC is one of a few centers around the country that conducts these procedures. Microscopic and endoscopic assisted minimally invasive procedures are performed through incisions less than one to two inches in size to achieve decompression of the spinal cord and stabilization of the spine.

“Minimally invasive spine surgery reduces surgical trauma to surrounding tissues and is reported to decrease blood loss, pain, infection rate and length of hospital stay,” says Chen.

DEDICATED TO THE SPINE

The USC Spine Oncology Program stands out not only for its progressive treatment options, but also for its focus.

“Very few neurosurgeons and spine surgeons around the country are focused on the treatment of tumors in the spine,” says Hsieh. “Our expertise is quite unique and something you will only find at a few cancer centers nationwide.”

In Chen’s opinion, the primary advantage of the USC Spine Oncology Program is that its neurosurgeons are not only fellowship-trained in spine surgery, but also have specific interest in oncology.

“Typically, at other facilities, spine surgery that is performed on cancer patients is performed by spine surgeons who are interested in decompressing and restoring the biomechanical stability of the spine but who do not specifically address the cancer,” he says. “We take a broader approach. We’re interested in the oncologic piece; we want to work with the referring oncologist to understand what type of chemotherapy the patient is getting, what other treatment modalities are being used, and we use that to inform our approach to surgery.”

Chen says that to have neurosurgeons who are cognizant of the spinal cord and the functions of the spinal cord, and are aware of what can be done in terms of oncological surgery and treatments, is all very necessary for a successful outcome for someone with a spine tumor.

“One of the advantages of working at a cancer center is that it’s a multi-disciplinary approach. It’s not just me that’s treating the patient,” says Chen. “We also have the oncologist, the radiation oncologist and oftentimes an internist—there are multiple people making sure the patient comes out from treatment okay.”
TEAM PLAYERS

Because USC Norris is a comprehensive cancer center, physicians have access from a wide range of specialists to help individualize care for each patient.

“We have the facilities here that no matter what direction we take, the specialists needed to do it are available,” says Chen. “If we need to do an anterior approach that involves opening the chest, we have thoracic surgeons available who can help. If we need to operate on the lumbar spine anteriorially, the vascular surgeons are available. There’s a team of doctors besides the spine surgeon that have familiarity with accessing the spine.”

Decisions on therapy are made through a multidisciplinary team dedicated to neuro-oncology including neurosurgery, medical oncology, radiation oncology, neuropathology and neuro-radiology.

“If we can offer the right surgery with the appropriate help from oncology and radiology, we can start talking about a very high cure rate,” says Hsieh.

For example, LaFuente’s surgery involved a large multidisciplinary team of specialists and surgeons, including Hsieh, Wesley G. Schooler, M.D., a plastic and reconstructive surgeon, and Andreas M. Kaiser, M.D., F.A.C.S., a colorectal surgeon, among others.

Depending on where a tumor is located, a wide range of surgeons—from vascular surgeons to orthopedic surgeons—may also be involved.

“Taking out the tumor is half the story,” says Hsieh, “For each patient, we find a team of people that are specialized in the treatment specific to that person.”

MOVING FORWARD

As physicians and researchers, both Chen and Hsieh are always working toward better treatments for spine cancers.

The USC spinal oncology research program is currently optimizing growth conditions of chordoma cells—the most common malignant tumor in the spine—in culture to develop individual cell lines from previously treated chordoma patients. This type of cancer generally does not respond to traditional chemotherapy and radiation treatments.

“By developing sustainable chordoma cell lines, our research program will advance scientific knowledge on the biology and pathophysiology of the malignant tumor,” says Hsieh, who believes that these advances will lead to improved treatment options.

Chen says the program is also working on two areas that they believe will become future treatments and are geared toward metastatic spine cancer.

“We have a patent on spine brachytherapy. It involves access of the tumor through a needle puncture in the skin to place a bead inside or next to the tumor. The bead delivers radiation directly to the tumor,” says Chen.

Brachytherapy is commonly used to treat cervical and prostate cancers, among others, but is not currently available for the spine. In addition, the program is also working on a delivery system for chemotherapy that will deliver it directly into the tumor, instead of intravenously.

And for LaFuente, the future is very clear.

“I can see that I’m already getting better, and I can see my future,” she says. “I can see myself working again, and I can see myself starting a family—adopting kids and getting married. I can see all that, and I think because I can see my future, it helps me be positive now—this is just one more thing I have to get through.”

For more information, or to make an appointment, call The Doctors of USC at (800) USC-CARE, or visit www.doctorsofusc.com.
A Concert to CURE CANCER

THE PASADENA POPS’ PERFORMANCE at the Concert to Cure Cancer event held Sept. 26, 2010 honored the life of the late three-time Emmy-nominated editor Paul Anderson, and the work of Heinz-Josef Lenz, M.D., who treated Anderson for gastric cancer.

The concert, held at the Hyatt Regency Century Plaza Hotel in Los Angeles, raised over $1 million to support the USC Center for Molecular Pathways and Drug Discovery and the USC Norris Comprehensive Cancer Center. It drew 420 guests and was one of largest and most successful fundraising events in the cancer center’s history.

Emmy-nominated television and film producer and editor Leslie Tolan was with Anderson, 49, who was her longtime creative and business partner, when he was diagnosed with stage 4 gastric cancer.

At the time, his doctors gave him two to four months to live. “We were quite surprised and devastated to say the least. I said, ‘No, that is not acceptable,’ ” said Tolan about the diagnosis and remaining time span.

“When we first met with Dr. Lenz, he just gave us so much hope,” said Tolan, who recalled driving with Anderson to meet Lenz for the first time. “We usually talked constantly to each other, but on the drive we were silent. We were just so scared we drove in silence,” she said. But after meeting with Lenz, who wanted Anderson to try new clinical treatments, the best friends were ecstatic.

“We were high-fiving each other by the time we left that meeting because that’s how Dr. Lenz makes you feel—he’s fantastic and brilliant,” she said.

“If one protocol didn’t work, (Lenz) had another one up his sleeve,” said Tolan, who said Lenz’s treatments helped shrink Anderson’s tumor by 40 percent. “You really felt like you were in the best hands with Dr. Lenz and the whole Norris machine. Every patient is dealt with, with such high respect, and you know that they really care.”

In the 10 months after his initial treatments from Lenz, Anderson was able to remarry his ex-wife, Dori, while in the intensive care unit and say his goodbyes to his teenage daughter, Karlee. He also spent countless hours with Tolan, who was with Anderson when he died in March 2010.

The idea for the fundraising concert came about after Anderson’s death. So many people close to Tolan were affected by cancer. Her father suffered from cancer, her mother and children’s nanny both died of cancer, and her sister’s best friend was recently diagnosed with cancer. In addition, Anderson’s father died of cancer four months before his son did, and Anderson’s father-in-law was battling cancer at the same time he was.

“I thought: Enough already, something’s got to be done. This disease needs to leave this earth while my children are still alive. I don’t want them to ever have to go through this. We have to try to destroy this horrible disease and find a cure,” said Tolan, whose stepson, Peter Jr. is 18, son Benjamin, 13, and daughter, Beatrice, is 12.

Tolan joined forces with Pasadena POPS’ conductor and friend, Rachael Worby, to initiate the fundraising gala. Tolan, along with her husband, Emmy-winning executive producer, Peter, who is the creator of the hit cable show Rescue Me, underwrote the Pasadena POPS’ performance at the Concert to Cure Cancer event to honor Anderson’s life and his fight against cancer.

For more information on how to support the USC Norris Comprehensive Cancer Center and Hospital, visit gonorriscancer.usc.edu/support or call (323) 856-0700.
The USC Norris Comprehensive Cancer Center has been designated a Phase I Clinical Trial Center of Excellence by the pharmaceutical company Bristol-Myers Squibb Co.

The collaboration will bring a number of new phase I clinical trials to USC Norris and will enable the center’s clinical and basic scientists to provide guidance in early phase drug development and trial design. Anthony El-Khoueiry, M.D., assistant professor of clinical medicine at the Keck School of Medicine of USC and director of the phase I drug development clinical program at USC Norris, said the designation is highly relevant to patients.

He called the designation “a reflection of the excellence of clinical care and clinical research at USC” and noted it is only granted to centers with a track record of being able to conduct complex and cutting edge phase I studies that involve patients with advanced cancer.

“The main mission of this partnership is drug development. This will enable us to expand options for our patients and provide them with the earliest possible access to new drugs,” he said.

USC Norris is one of 40 centers in the United States designated as “comprehensive” by the National Cancer Institute.

Basic and clinical researchers are dedicated to studying the origins and prevention of cancer and developing novel therapies for the disease.

The center currently enrolls approximately 150 patients per year in phase I clinical trials, which test the safety and efficacy of promising new drugs and therapies.

Patients who enter phase I trials have usually tried the standard treatments and may benefit more from new treatments and novel drug compounds, El-Khoueiry said. These may include treatments that combine approved drugs with a novel agent, offering the potential for a better result than with the approved drug alone.
Still, he noted, “patients need to be aware—and educated about—the potential risks of new drugs or therapies. In many instances, new drugs do not have a track record in the specific disease that the patient has, and there may not be a benefit to the patient.”

El-Khoueiry said the new designation will help increase the frequency and scope of collaborations with Bristol-Myers Squibb in various areas of drug development.

USC Norris is among a handful of global sites and one of two in the United States to be selected for this designation from the pharmaceutical company.

The selection was based on several factors, including the quality of the investigators and research staff, the clinical research infrastructure and the ability of the clinician-scientists to be active partners in the design of the clinical and translational research studies.

“The recognition is based on our expertise in clinical trials, early drug development and pharmacogenomics at USC Norris,” said Heinz-Josef Lenz, M.D., associate director for clinical research and co-leader of the Gastrointestinal Cancers Program at USC Norris.

The clinical studies conducted at USC Norris will cover a range of cancers, including blood cancers and solid tumors.

For more information on clinical trials at the USC Norris Comprehensive Cancer Center and Hospital, visit uscnorriscancer.usc.edu/CLTrials/default.aspx, or call the Clinical Trial Investigation Support Office at (323) 865-0451.

“It is only granted to centers with a track record of being able to conduct complex and cutting edge phase I studies that involve patients with advanced cancer.”
A melanoma specialist comes to USC with the aim to push research and patient care toward a cure

BY JESSICA OGLIVIE

At USC, there are great folks who have great ideas and really, really deep research programs,” says Wong, who is also a professor of medicine at the Keck School of Medicine of USC. “It gives me the opportunity to really expand the things I can do.”

And what Wong, who specializes in treating melanoma, hopes to do is nothing short of winning the war on cancer.

“We are not just hoping to make people with cancer live a little longer, or to add a couple of months to their lives,” he says. “We are hoping that we can cure people with cancer.”

Working toward that goal, Wong has targeted the tumor-host interface in his research, or the way that the tumor interacts with its host—the patient’s body.

“The cancer exists within the host, the body—it cannot survive by itself,” he says. “So why not look at those host factors and pathways that enable the cancer to grow and spread?”

To that end, Wong has focused on three primary areas: angiogenesis, in which new tumor blood vessels are created from existing blood vessels; the matrix-host interaction, which focuses on how hostile or welcoming the tissue surrounding the tumor is; and immunomodulation, “the idea of changing the host immune system so it is able to recognize and attack the cancer,” explains Wong.

Eventually, Wong hopes to stop cancer cells from spreading throughout the body—the characteristic that, ultimately, renders the disease lethal.

But research aimed at stopping cancer in its tracks isn’t Wong’s only area of expertise—the man who was named one of America’s best doctors for five years in a row also has extensive experience in using immunotherapy to treat late-stage cancers.

Immunotherapy, a procedure that prompts the patient’s immune system to attack the cancer, isn’t something that’s appropriate for all patients, nor is it necessarily a treatment program that all doctors will perform.

Wong’s reason for using the procedure, and for researching it, however, is simple—for many patients, it’s what works best.

“The side effects of immunotherapy can be particularly onerous,” he said. “But I do this because one in five to one in 10 patients [with late-stage cancer] can be cured.”

In addition to his work in the lab and with patients, in his new position Wong will also be teaching students and young doctors at USC—a part of his job, he says, that he particularly likes.
“One of the things I find most enjoyable is bedside teaching,” he says. “The challenge in this age of technology is to bring all the things we know to bear on that patient’s problem in a very humane way. That’s hard to do, and, it’s a challenge I like to address and to teach about.”

As he settles in to his new position at USC, Wong, along with his wife and one of his three children (one is at college in Canada while the other is on her way to medical school) is also getting used to the California lifestyle. An avid ice hockey player, he visited Los Angeles to track down a rink before moving here, and was immediately enamored of the lifestyle.

“The hiking trails are phenomenal,” he says. “From the mountains to the beaches to Hollywood, there is so much to do here—I love it.”

And Wong appears poised to tackle the challenges and opportunities presented at USC with as much vigor as he applies to his time in the rink and on the trails. When asked what he hopes to accomplish at USC, he replies: “We are hoping for truly game-changing, paradigm-shifting work.”
Patient Profile

Her Safe Place

Penny Robby has spent the last 10 years battling colon cancer. While it’s been a long, roller-coaster struggle, she credits USC Norris for bringing her this far and for continuing to be a shining source of hope.

BY CARRIE ST. MICHEL
In March of 2005, Robby officially became Iqbal's patient. From that moment on, Robby says, she's been surrounded by a team of what she terms “earthly angels.” In addition to Iqbal, that team includes: Brenda Jacobs, R.N.; Tina Soo, N.P.; Elisa Soussa, R.N.; and Roger Calvillo, scheduling coordinator.

“Each one of them is so competent and compassionate, and they also make me laugh,” she says, adding, “Who says a cancer hospital can’t be fun and happy?”

While Robby steadfastly eschews doom and gloom, daunting medical realities kept making unwelcome, return appearances. In November of 2006, scans showed a sprinkling of tumors in both lungs; a December biopsy confirmed metastatic colon cancer. New courses of chemotherapy immediately ensued, along with a referral to Jeffrey Hagen, M.D., assistant professor of surgery at the Keck School. Hagen, whom Robby describes as “a brilliant surgeon with a great sense of humor,” performed a left-lung resection in April of 2007 and a right-lung resection the following month.

Robby, who wholeheartedly embraces positivity and staunchly rejects self-pity, was then thrown yet another life-threatening curve. In April of 2008, scans revealed the reemergence of tumors in both lungs. Robby recalls, “I felt it was so hard for Dr. Iqbal to tell me, that I said to her, ‘Don’t give up on me; we’re such a good team.’”

The USC Norris team had no intention of giving up. Chemotherapy was restarted, and Hagen’s skilled surgical services were again called upon, this time for a right-lung resection and a left-lung lobectomy. Early in 2010, tumors were again detected in the right lung; cryoablation (use of extreme cold to remove tissue) was performed, and Robby has been undergoing maintenance chemotherapy ever since.

Robby is scanned every three months, and, at present, her lung tumors are either dormant or reduced in size. She succinctly sums up her current medical status: “I’m alive today because of Dr. Iqbal.” And ever upbeat, Robby is eyeing the future. “After my initial diagnosis, my goal was to live long enough to see my sons get married; that happened two years ago,” she says. “Now, my goal is to hold grandchildren in my arms.”

In March of 2010, David’s solid state was shaken when he was diagnosed with prostate cancer by a urologist in the couple’s hometown of Mission Viejo, Calif. That same week, the Robbys received the spring 2010 issue of the USC Norris Cancer Report. The cover story featured a prostate-cancer patient who’d benefited tremendously from robotic surgery performed by Inderbir S. Gill, M.D., M.Ch., founding executive director of the USC Institute of Urology.

The Robbys consulted with Gill and never looked back. In the fall of last year, Gill—using the da Vinci robot—performed prostate surgery on David. The 61-year-old salesman came through with flying colors. Wife Penny says, “He’s doing remarkably well,” and she credits USC Norris. “Norris has set the standard of care for us, and we speak from experience,” she says.
NORRIS AUXILIARY FALL KICKOFF MEETING AND LUNCHEON

Peter A. Jones (right), Ph.D., D.Sc., director of the USC Norris Comprehensive Cancer Center, welcomes members of the Norris Auxiliary to the Fall Kickoff Meeting and Luncheon with the unveiling of a new donor wall in the lobby of the USC Norris Cancer Hospital on Sept. 27, 2010. The Norris Auxiliary is a group of women and men interested in supporting the USC Norris Comprehensive Cancer Center through fundraising and volunteering in the cancer center. Keck School Dean Carmen A. Puliafito, M.D., M.B.A., was a guest speaker at the meeting, praising members for their successful fundraising efforts and updating the Auxiliary on activities at USC Norris.

Luncheon Raises Proceeds for USC Norris

The San Pedro Peninsula Cancer Guild recently donated $75,000 in proceeds from its annual fashion show/luncheon to the USC Norris Comprehensive Cancer Center. The funds will support a post-doctoral fellow in the laboratory of Heinz-Josef Lenz, M.D., professor of medicine and preventive medicine at the Keck School of Medicine. Lenz was the featured speaker at the luncheon, held in November 2010. To date, the group has donated over $1.6 million to USC Norris. Pictured are USC Norris Benefactor and San Pedro Peninsula Cancer Guild former president Yvonne Bogdanovich and Lenz.
Hundreds Flock to USC-sponsored 5K for Prostate Cancer Awareness

Hosted by the USC Institute of Urology and USC Norris Cancer Hospital, the LA Prostate Cancer 5K was held on Sunday, Nov. 21. With more than 700 runners and walkers, the event was successful in accomplishing its goals of creating awareness for prostate cancer and raising funds to support prostate cancer research.

Carmen A. Puliafito, M.D., M.B.A., dean of the Keck School of Medicine of USC; Inderbir Gill, M.D., M.Ch., founding executive director of the USC Institute of Urology; Dallas Raines, ABC7 meteorologist; and Tom LaBonge, Los Angeles Council District 4, welcomed the crowd and congratulated them for supporting the fight against prostate cancer.

Recent prostate cancer survivor Stephen Macht also addressed the crowd saying, “For my health and for my family’s wellbeing, I thank Dr. Gill, his surgical and urological teams, his pathologists and all the nurses and caretakers at USC University Hospital.”

After an enthusiastic welcome, an Equinox Westwood trainer led the runners and walkers in a warm-up, then everyone made their way to the starting line, including runners, walkers, strollers and even dogs. Matthew Dunn, M.D., assistant professor of clinical urology, sang the national anthem, and the race began.

Several vendors, such as Pinkberry, Function Drinks, Celsius Energy Drinks, Myoplex and Don Franciscos Coffee, had booths in the expo area and provided free giveaways to all participants. Also, every racer received an LA Prostate Cancer 5k T-shirt, two Clippers tickets and a one-week pass to any Equinox gym. First- and second-place winners received a gift bag from Nike and a gift certificate to a hair salon in Beverly Hills.

Event sponsors included Bloomingdales, Abbott, Aureon Biosciences, 104.3MYfm, Clear Channel, Northwestern Mutual, Earthbar, LA Clippers, ABC7, Pinkberry and Don Franciscos. Along with donations from the sponsors, several former and current USC prostate cancer patients generously donated to the event.

“For my health and for my family’s wellbeing, I thank Dr. Gill, his surgical and urological teams, his pathologists and all the nurses and caretakers at USC University Hospital.”

For more information or to make a gift to the USC Norris Comprehensive Cancer Center and Hospital, visit uscnorriscancer.usc.edu/support/ or call (323) 865-0700.
What is minimally invasive surgery?
Minimally invasive surgery is a type of surgery that allows surgeons to operate through small incisions, compared to the larger incisions during traditional surgery. For patients, this technique, also known as laparoscopic and robotic surgery, often translates into less postoperative pain, a shorter hospital stay, faster recovery and, in some cases, a superior overall outcome.

Unlike open surgery, which requires a long incision, minimally invasive procedures are performed through one or more short incisions.

“Traditional open surgery involves large, major incisions, whereas minimally invasive surgery, robotic or laparoscopic, requires only small, key-hole incisions,” says Inderbir Gill, M.D., founding executive director of the USC Institute of Urology. “These small incisions are typically used for insertion of laparoscopic devices, including a camera.”

While laparoscopic techniques vary widely, surgeons generally insert an endoscope, a long thin tube with a lighted, high-definition camera at its tip, through a small incision. The camera sends an image to a high-definition monitor, which the surgical team uses to view the area on which they will operate. Surgeons can then guide specially designed surgical instruments through the original cut or through other small incisions.

Minimally invasive surgery requires extensive skill and experience on the part of the surgical team. Increasingly, minimally invasive surgery is performed using the robot, which faithfully duplicates the surgeon’s delicate movements for tissue handling during surgery.

It is important to find a surgeon with considerable experience in these techniques.

What are the benefits of minimally invasive surgery?
The discomfort, pain, and potential for disability or morbidity associated with conventional surgery is commonly due to the trauma associated in obtaining access to the area through large, often muscle-cutting incisions, to perform the surgery rather than the surgery itself. In minimally invasive surgery, significantly less muscular tissue is impacted, so the risk of infection is reduced. Patients also lose less blood, feel less pain, have less scarring, and recover more quickly than with conventional surgery, Gill says.

Possible benefits of minimally invasive surgery techniques include:
- A smaller incision, therefore smaller scar
- Decreased risk of infection
- Less bleeding
- Less trauma, leading to less pain
- Decreased length of stay in hospital after surgery
- Faster return to normal, daily activities

What types of procedures are suitable for minimally invasive surgery?
Minimally invasive surgery can be used in certain procedures in a number of specialties, such as cardiac, urological, gynecological and neurosurgery.

How will I know if minimally invasive surgery is right for me?
Your diagnostic tests will be reviewed by your surgeon prior to your scheduled surgery to determine if you are a candidate for a minimally invasive laparoscopic or robotic surgery technique. The surgical team will methodically compare the advantages and disadvantages of these techniques with those of traditional surgery and go over them with you.

To find a surgeon experienced in minimally invasive and laparoscopic surgery, call (800) USC-CARE or visit www.DoctorofUSC.com.
What will your legacy be?

Arlene Ray is a survivor. Decades after overcoming a struggle with breast cancer, she faced a diagnosis of lymphoma and turned to the experts at USC Norris. They helped her beat back the disease—and they inspired her with their innovative research and unparalleled clinical care. Today, she has dedicated her philanthropy to helping USC Norris researchers pioneer new frontiers of discovery to end cancer once and for all.

To learn more about charitable gift planning to benefit the USC Norris Comprehensive Cancer Center, please contact the Office of Development at 323.442.1531 or by email at annbraun@usc.edu.

My legacy is ending cancer
Strength to move forward.

Move beyond breast cancer and get on with the things you love.

The USC team of breast cancer experts offers a variety of diagnosis and treatment options. Call (323) 865-3452 or visit uschospitals.com/breastcancer to learn more.