

# Changing the Face of Cancer & Blood Diseases



Childrens Center for Cancer and Blood Diseases



**ChildrensHospitalLosAngeles**  
International Leader in Pediatrics



#### MISSION STATEMENT

To increase the cure rate and long-term quality of life for children and adolescents with cancer and blood diseases by rapidly developing and integrating new research discoveries into strong, multidisciplinary treatment programs focused on the needs of this unique population.

#### CHILDRENS HOSPITAL LOS ANGELES

Founded in 1901, Childrens Hospital Los Angeles treats the most seriously ill and injured children and offers more than 100 pediatric subspecialty services under one roof. Childrens Hospital is one of America's premier teaching hospitals, affiliated with the Keck School of Medicine of the University of Southern California since 1932. Since 1990, U.S. News & World Report and its panel of board-certified pediatricians have ranked Childrens Hospital Los Angeles as one of the nation's finest pediatric facilities.

# Pioneering Treatments & Research for Children Worldwide

Today, one in 550 young adults in the United States is a childhood cancer survivor. Only three decades ago, 80 percent of children diagnosed with cancer died. Now, more than 80 percent survive — thanks in part to advances made at the Childrens Center for Cancer and Blood Diseases at Childrens Hospital Los Angeles.

While we don't yet have cures for inherited "benign" blood diseases, we have made significant strides in reducing their consequences and increasing the quality and duration of these children's lives.

For more than five decades, the Center has been changing the face of cancer and blood diseases through our innovative clinical and research programs, academic excellence and global leadership. We are the nation's largest pediatric hematology/oncology program and one of the two largest pediatric cancer centers.

# Pediatric Leadership

**1950**

First chemotherapy  
for children  
with leukemia in  
the western U.S.

## BENCH-TO-BEDSIDE EXPERTISE

Our “bench-to-bedside” approach to medical problem-solving integrates scientific and clinical expertise — taking the best ideas from the laboratory to the patient in the form of promising new treatments.

Each day, we take on the most complex conditions. Cases that may seem rare to other hospitals happen routinely here. As a result, families come to us from all over Southern California, the U.S. and the world. The Center sees more than 1,100 newly diagnosed patients each year. Together, our Day Hospital, Clinic and Urgent Care experience some 25,000 outpatient visits annually.

## SUPERIOR MEDICINE, SUPERIOR PEOPLE

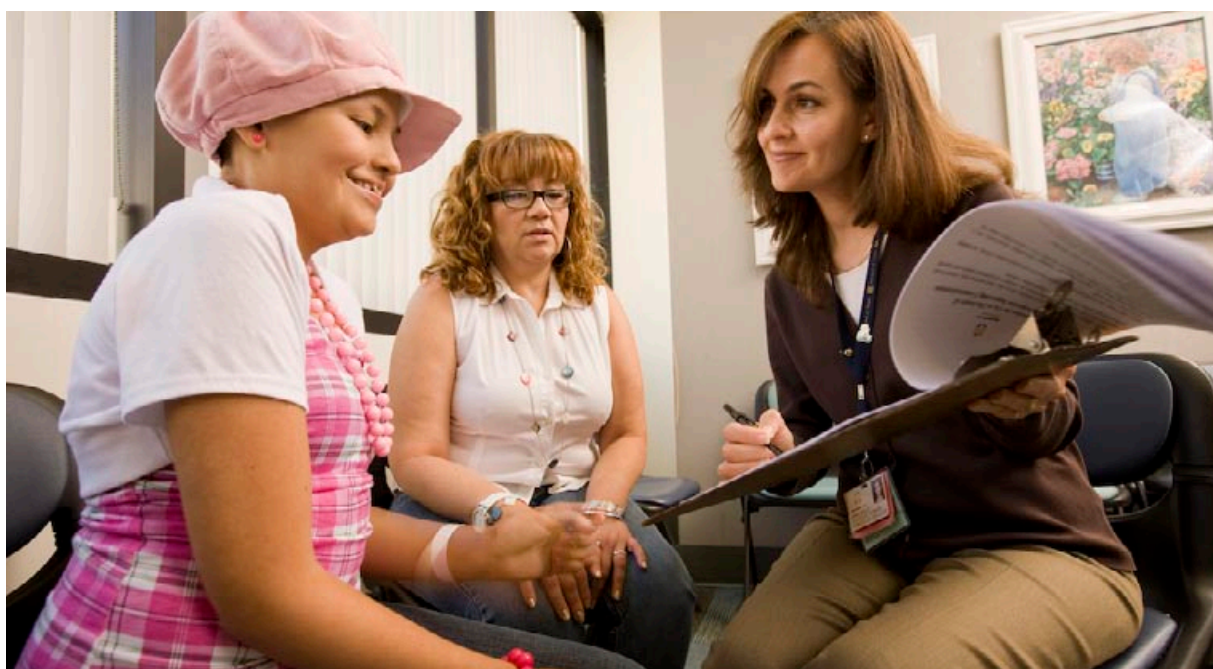
The Childrens Center for Cancer and Blood Diseases is a Center of Excellence at Childrens Hospital and the pediatric component of the USC/Norris Comprehensive Cancer Center, designated by the National Cancer Institute (NCI) as one of the nation’s 41 comprehensive cancer centers.

Our physician scientists serve on the faculty of the Keck School of Medicine of the University of Southern California. Many have been recognized annually for their excellence in *Best Doctors in America*, *Who’s Who in Medicine* and *America’s Top Doctors*.

Our expert nursing staff provides the highest standards of care. Many are nationally certified in pediatric oncology nursing (CPON) or have earned certification as nurse practitioners. In a reflection of its nursing excellence, Childrens Hospital in 2008 earned Magnet Recognition™ from the American Nurses Credentialing Center — an honor shared by only five percent of hospitals in the United States.

## SPECIALISTS IN CHILDREN

Treating a child or adolescent who has cancer or a blood disorder is different than treating an adult. Each decision must be designed with the child’s development in mind. With 50-plus years of pediatric experience, we strive to help each child return to as normal a life as possible, as soon as possible.



Amanda Ponce, left, with her mother, Ana Funes, center, and Diana Grace, LCSW.

*Frank Hebroni is preparing for a career in medicine—and in oncology—inspired by the care he’s received at Childrens Hospital.*



## Frank Hebroni aspiring oncologist

---



Frank Hebroni has his sights set on medical school and a career in oncology — a choice inspired by his own experience. At 10, he was diagnosed with rhabdomyosarcoma, a malignant tumor that starts in muscle. Frank had chemotherapy and radiation. Five years later, he developed acute myelogenous leukemia (AML), possibly a complication of treatment. Today, he is cancer-free, and majoring in psychobiology at the University of California, Los Angeles, where he maintains a 4.0 grade point average.

He helped found the Childhood Cancer Coalition on campus, which raises money for cancer care. “Seeing the difference my doctors made in my life, the way they treat the individual and not the disease,” Frank says, “I knew I wanted to do the same.”

---

Every patient is seen by an interdisciplinary team, which may include pediatric oncologists and hematologists, surgeons, radiation therapists, specialized nurses and physician assistants. Also on our team are experts in psychological, social and school-related issues for children with cancer and blood diseases, as well as specialists in pain management, rehabilitation, child development, nutrition, play therapy, and art and music therapy.

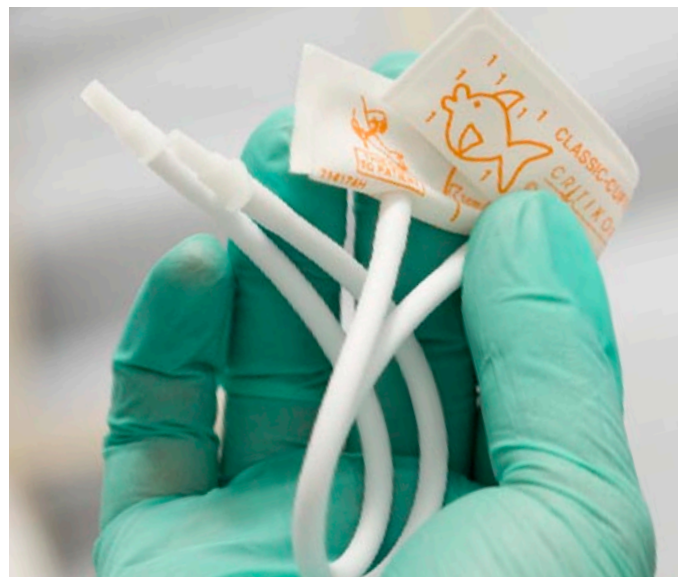
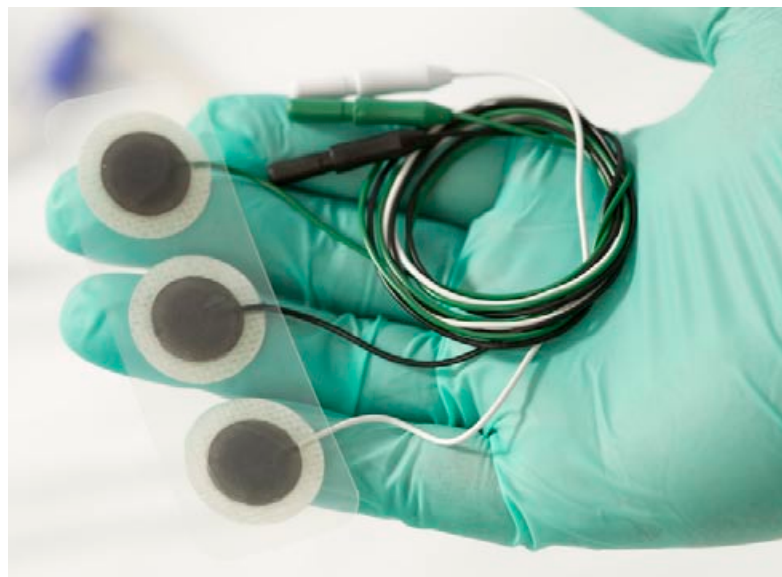
We understand a family’s world is changed in many ways when a child is diagnosed with cancer. Our social workers, each assigned to specific medical programs, guide families throughout the hospital experience. They serve as advocates, assist with education and connect families to support services, in the hospital and the community.

### FAMILY-FRIENDLY ENVIRONMENT

Even our environment is child/teen- and family-focused, with playful colors and images and soothing lighting. In the New Hospital Building, the Center occupies one-and-a-half floors (as of 2010). We offer our patients and families private patient rooms, with comfortable spaces for parents to stay overnight, storage areas, Internet access and family lounges on every floor.

With a variety of ambulatory care facilities within the Center — a medical service clinic, urgent care and day hospital — we can tailor our services to the individual needs of each family, and minimize the time children spend as inpatients.

# Clinical Program



**1973**  
First comprehensive psychosocial support program for childhood cancer and blood diseases

Our clinical program unites state-of-the-art diagnosis, treatment and psychosocial care with long-term management in a series of interdisciplinary programs.

## ONCOLOGY

Cancer remains the leading cause of death by disease in the United States in children between ages one to 14, as well as for teenagers and young adults. This reality fuels our endeavors. As the leading referral center in the West for the diagnosis and treatment of the full spectrum of childhood and adolescent cancers, we are working hard to prepare children for life as young adults.

### Leukemia/Lymphoma

We provide comprehensive care for children with acute lymphoblastic leukemia (ALL) and lymphoma, whether newly diagnosed, receiving chemotherapy or needing care for treatment complications. Although 80 percent of children with ALL survive, it remains the most common pediatric cancer. Our program is integrated with Therapeutic Advances in Childhood Leukemia (TACL), an international research consortium headquartered in the Center.

Lymphomas — cancers that develop in the lymphatic system of the body — are the third most common

form of pediatric cancer, following leukemia and brain tumors. The majority of children with the two types of cancer, Hodgkin's Lymphoma and non-Hodgkin's lymphoma, are cured.

Our extensive clinical experience in front-line therapy and supportive care offers children the latest treatment options. For children who don't respond to treatment or experience a relapse, the Center has an innovative program in blood stem cell transplantation, as well as ongoing studies of new therapies for chemo-resistant leukemias and lymphomas.

### Bone and Soft Tissue Tumors

The Bone and Soft Tissue Tumor Program is nationally recognized for its advanced treatments for children with bone tumors such as osteogenic sarcoma and Ewing's sarcoma; germ cell tumors (testis, ovary, other pelvic and chest sites); soft tissue tumors affecting muscle (rhabdomyosarcoma) and other soft tissues, liver, and kidney (Wilms' tumors).

For bone and soft tissue tumors, the Center has spearheaded many organ- and limb-sparing procedures, combining high-dose chemotherapy to reduce tumor size and advanced surgical techniques.

## 1975

First use of multidisciplinary approach to treat pediatric sarcomas of the bladder and prostate, improving survival rates and reducing the need for organ removal

In the past, bone cancers of the extremities were treated by amputation. Over the last three decades, we have collaborated with our orthopaedic colleagues to develop and refine techniques for limb salvage and reconstruction. Together with advanced chemotherapy, these can save the affected limb in a vast majority of cases.

Our physicians also are developing novel drug therapies to both increase the survival rates for our patients with bone and soft tissue tumors and minimize side effects.

### Neural Tumors

Our Neural Tumors Program — one of the country's largest — offers the latest, research-based diagnostic and treatment options for brain and spinal cord tumors, neuroblastoma and retinoblastoma.

### Brain Tumors

The Center's brain tumor program is one of the largest pediatric treatment and research programs in North America, treating an average of 120 new patients with childhood brain tumors each year.

Our physician leaders are dedicated to improving the survival rate of very young children with brain tumors without using radiation therapy, which can cause severe and irreversible damage to intellectual functioning. The Center is headquarters for international clinical trial consortia investigating new treatments for young children with malignant brain tumors and rare germ cell tumors of the brain.

### Neuroblastoma

Our physician-scientists developed today's standard treatments for neuroblastoma, the second most common solid tumor in children. Treatment for neuroblastoma, which most often begins in early childhood, depends on risk groups, such as the stage of neuroblastoma at diagnosis, the age of the child, tumor anatomy and tumor biology.

We have pioneered research concepts in the laboratory that have resulted in nationwide clinical trials into innovative alternatives for children with neuroblastoma. Of special focus are children who fail to respond to the standard therapy, which is a mix of high-dose chemotherapy, radiation, retinoic acid and blood stem cell

transplantation. One of the most promising drugs under investigation is fenretinide, a synthetic relative of vitamin A. Its use in neuroblastoma and childhood leukemia was developed at Childrens Hospital.

### Retinoblastoma

Nearly one-fifth of all cases of retinoblastoma nationwide are treated here, where the international standards of care were developed. This rare cancer of the eye typically strikes infants and children under the age of five. Although retinoblastoma is curable if detected early, two-thirds of patients with advanced disease need to have at least one eye removed.

Current treatment includes chemotherapy, radiation, conventional and laser surgery, along with other local techniques directed to the tumor in the eye. We have led the way in using non-invasive techniques that reduce the need for removal of the involved eyes and preserve usable vision for these children. Our physicians are exploring next-generation therapies, including a technique to deliver chemotherapy directly into the eye via an inverted "cup," which potentially could make treatment more efficient and less toxic to the rest of the body.

## HEMATOLOGY

Our physicians take an interdisciplinary approach to the care of children with blood disorders. We continue to make advances in clinical management of blood diseases. Our dedicated team of physicians, nurses, social workers and other caregivers provide patients and their families with expert assistance, counseling and education in health maintenance, nutrition and pain management.

At the same time, we pursue groundbreaking research to find new treatments and, someday, a cure. Our investigators are funded by the National Institutes of Health (NIH), private philanthropy and industry.

### Red Cell Disorder Program

In our clinical program, we offer our patients with sickle cell the latest treatment options. These include advanced bone marrow transplantation, when appropriate, in collaboration with the Center's Division of Research Immunology/Bone Marrow Transplantation (BMT).

*Amy Dilbeck has spoken around the country about the importance of cancer research—because research paved the way for her own cure.*



## Amy Dilbeck future attorney



Amy Dilbeck was a competitive swimmer and cheerleader when she was diagnosed with osteosarcoma, a form of bone cancer, one month before her sixteenth birthday in 1996. Soon she was at Childrens Hospital for innovative limb-salvage surgery, where surgeons replaced the affected bone with metal. Her next challenge: relearning how to walk.

In 2002, she graduated from Pepperdine University with a bachelor's degree in public relations, then joined the staff at CureSearch, a collaboration of the Children's Oncology Group and National Childhood Cancer Foundation. She has spoken around the country on the importance of research. Now she's attending Pepperdine School of Law, and says, "I feel so blessed for my life." Amy "wore out" the first titanium rod in her leg and had a second surgery at Childrens Hospital in 2007 to replace it. She is cancer free and a third-year law student at Pepperdine University, working toward a career in advocacy and awareness for childhood cancer. "I feel so thankful for my life," she says, "and Childrens Hospital has been a big part of helping me get to this point."

**1982**  
First photodynamic  
laser technol-  
ogy application  
for treatment of  
retinoblastoma

Our Sickle Cell/Hemoglobinopathy Program is designated by the State of California Newborn Screening Program as a referral center for confirming abnormal hemoglobin, as well as a genetics center for newborn screening. We are one of 12 federally funded Basic and Translational Research Programs (BTRP) studying sickle cell disease in the U.S. — and the only one on the west coast.

Our comprehensive Thalassemia Program is the first and largest center in North America with the capability of measuring organ iron overload by magnetic resonance imaging (MRI) in children with blood disease and the only formal iron cardiomyopathy program in the country.

We are one of six Thalassemia Centers nationwide recognized by the federal Centers for Disease Control and Prevention (CDC) for our clinical and research leadership. We also participate in the National Heart, Lung and Blood Institute's thalassemia clinical research network.

### Coagulation Defects Program

Our physicians treat children and young adults with inherited bleeding disorders, including hemophilia, through our Hemophilia Treatment Center and our Hemostasis and Thrombosis Center. We receive over 600 new patient referrals each year, making ours the largest coagulation center in the western United States.

## 1989-1999

First treatment of a pediatric cancer (advanced neuroblastoma) with bone marrow transplantation and retinoic acid, achieving a 55 percent survival rate — now the medical standard of care

Our federally designated Hemophilia Treatment Center — founded more than two decades ago — is one of the original programs nationwide funded by the CDC and the Health Resources and Services Administration. We are a partner and the largest participant in the Federal Hemophilia Treatment Center Program in U.S. Public Health Service Region IX, which was established to promote comprehensive hemophilia care.

The Center participates in the federal 340B Drug Pricing Program, which requires drug manufacturers to provide outpatient drugs to designated hemophilia treatment centers.

The Hemostasis and Thrombosis Center provides interdisciplinary care for outpatients and inpatients with bleeding and thrombotic (clotting) disorders. The center is open to patients of all ages with bleeding disorders and to children, teens, and young adults (up to 40 years of age) with clotting disorders. A sizeable and growing research program is developing new therapies and approaches to improve outcomes. Our patients have access to the latest treatment options, including experimental treatments only available through clinical trials.

### White Cell Defects Program

In this program, our physicians provide diagnostic and clinical services to optimize care of patients with various qualitative and quantitative neutrophil disorders. Researchers at Childrens Hospital have contributed significantly to the body of knowledge about these rare, but serious illnesses. Program physicians participate in innovative trials of new treatments for these disorders.

### Bone Marrow Failure Program

We extend diagnosis and therapy for children with congenital and acquired bone marrow failure states. We administer any required immunosuppressive therapies, growth factor treatments or transfusions.

## RADIATION ONCOLOGY

The Radiation Oncology Program is the only center dedicated exclusively to pediatric radiation therapy west of the Mississippi and one of only two centers in the U.S. specializing entirely in the care of children. An expert, caring team, headed by a board-certified radiation

oncologist, includes a board-certified radiation physicist, certified radiation therapists and dedicated nurses.

Our faculty has been introducing advances in radiation therapy techniques since 1995 to safeguard children's normal tissues and organs. We offer a complete spectrum of treatment options, tailoring the treatment plan to each child's needs.

These options include Conventional External Beam Radiation Therapy, useful when the diseased tissue is either very superficial or involves an entire region of the body, 3D Conformal Radiation Therapy, which can be tailored to the shape of the tumor, and Intensity Modulated Radiation Therapy (IMRT).

IMRT is particularly useful for tumors close to sensitive, normal tissues. In this state-of-the-art therapy, we employ a precision radiation beam-shaping device which more accurately conforms the radiation beam to the shape of the child's tumor than previous methods.

## HEMATOPOIETIC STEM CELL TRANSPLANTATION

The Hematopoietic Stem Cell Transplantation (HSCT) Program in our Division of Research Immunology/BMT offers solutions to patients with advanced-stage and high-risk diseases. These include leukemia, neuroblastoma, malignant brain tumors, aplastic anemia and complex genetic diseases.

The HSCT Program is responsible for 50 percent of all pediatric bone marrow transplants in Los Angeles County. More than half of the patients we treat are under five years old. We perform both autologous transplants, using stem cells from a patient's own bone marrow, and allogeneic transplants, using stem cells from related or unrelated donors, peripheral blood stem cells or cord blood.

Within the HSCT Unit in the New Hospital Building, patients receiving allogeneic transplants will stay in 14 HEPA-filtered isolation rooms, which feature advanced laminar airflow that protects them from airborne germs. Patients receiving an autologous transplant will be cared for in the HEPA-filtered rooms in the Center's Hematology-Oncology unit.

## 1993

First use of genetically engineered umbilical cord blood stem cells to correct an inherited, fatal immune deficiency in newborns

## SURGICAL EXPERTISE

When surgery is an appropriate treatment option, patients are seen by the expert surgeons in the Department of Surgery at Childrens Hospital Los Angeles. This busy, experienced Department performs some 14,000 pediatric surgeries a year — nearly twice that of any other hospital in Southern California.

These surgeons are highly experienced in treating children of all ages — from infants and school-aged children to young adults — and in addressing the most complicated cancers.

Oncologists and surgeons meet in weekly sessions to ensure that any surgical plan is integrated into a patient's overall plan of care. Surgeons from different disciplines become involved in oncology cases and routinely exchange ideas on treatment approaches. These include the latest in minimally invasive techniques, one focus of research and innovation for this accomplished Department.

Hospital surgeons are members of oncology study groups in the nationwide Children's Oncology Group (COG), the only source of broad, national clinical trials in pediatric cancer in the U.S. and Canada — knowledge they bring to benefit our young patients.

## DIAGNOSTIC & SUPPORT SERVICES

The Center is supported by a range of services within Childrens Hospital, including:

### Dentistry

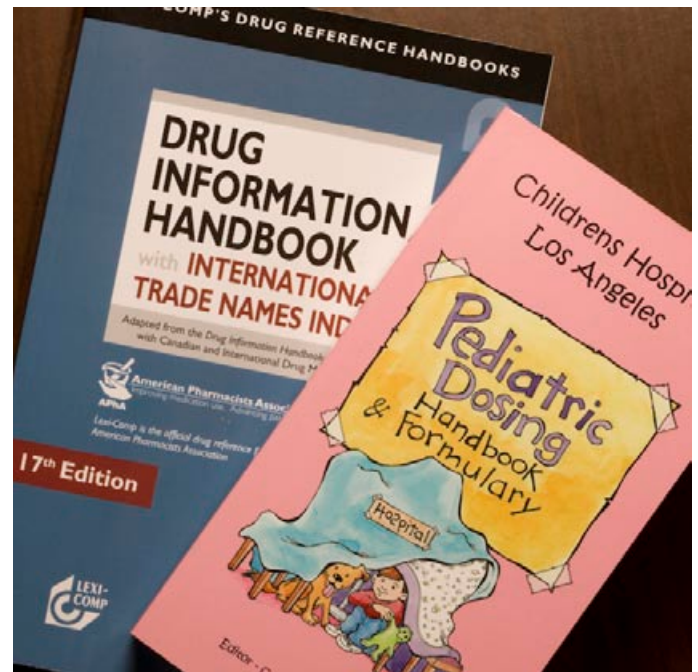
The Division of Dentistry and Orthodontics at Childrens Hospital has aligned with the acclaimed USC School of Dentistry to provide routine and specialized dental and orthodontic care to 3,500 children and adolescents each year, including those with medically complicating conditions such as cancer and hemophilia. Many of our patients are unable to see a general pediatric dentist in the community. The Division's expert staff rounds out our program of care.

### Pain Management

When necessary, we call upon the expert services of the Comfort, Pain Management and Palliative Care Program. It provides round-the-clock consultation on appropriate pain management therapies and the use of such complimentary medicine modalities as massage, pet therapy and other wellness techniques.

### Pathology

The Department of Pathology and Laboratory Medicine is critical to our capabilities for accurate and timely diagnoses. Led by an expert in pediatric cancer cell biology,



Above, left: Stephanie Moore, pharmacy technician. Right: Hospital pharmacists wrote the "Pink Book," a pediatric dosing handbook.

*A diagnosis of non-Hodgkin's lymphoma changed the course of Chris Nehls's childhood—and prepared him to face the challenges in life.*



**Chris Nehls** entertainment industry manager

---



The first doctor who saw nine-year-old Chris Nehls' puffy eyes in 1976 prescribed allergy medicine. After further tests, he sent the Nehls family from their Visalia home to Childrens Hospital Los Angeles, where Chris was diagnosed with non-Hodgkin's lymphoma. He spent three months in a bacteria-free room called a laminar-flow unit (aka "Plastic Bubble") where he received radiation and chemotherapy. "The doctors and nurses become your extended family," he says. "The attention they give you is just unreal compared to other places."

Today, Chris is married, with a school-age daughter of his own, and is director of facilities and space planning for Walt Disney Studios Home Entertainment. His cancer experience taught him to "not take anything for granted, to try hard in everything I do."

---

an expert team of clinical and anatomical pathologists provides comprehensive clinical laboratory studies for pediatric cancer and blood diseases, using the most advanced technology available to identify proper tissue diagnoses. The Department has made major contributions to development of novel molecular genetic tests, which detect specific patterns of the genes in cells that match specific cancer diagnoses.

**Pharmacy**

Pharmacists located within our clinic on the 5th floor and in the inpatient facility assist our clinical teams with formulations for drug treatments, using protocols for best practice cancer care. Each protocol is optimized based on each child's height, weight and organ

function. A specialized research pharmacy prepares treatment agents that are still in the investigative phase of evaluation.

**Blood Donor Center**

The Children Hospital Blood Donor Center is under the direction of a full-time Transfusion Medicine physician with particular expertise in blood product support for children and teens with cancer and blood diseases. Transfusion medicine specialists prepare blood for use, test for compatibility and manage the platelet, red cell and plasma inventory. Each year, caring for children hospital-wide requires 20,000 units of blood or blood components.

# Research

---

## 2004

Development of first successful non-invasive test for tissue iron levels in sickle cell disease, thalassemia and other iron storage disorders

The Center's Basic and Translational Research Program has a two-pronged strategy: to develop new, innovative approaches to the diagnosis and treatment of pediatric cancer and blood diseases in our research laboratories and to translate those findings to cutting-edge protocols for patients. We not only seek cures, we seek less-toxic treatments to reduce long-term side effects.

### FULL-SPECTRUM STUDIES

Basic researchers in the Cancer Program at The Saban Research Institute of Childrens Hospital Los Angeles explore the molecular underpinnings of disease. They work in concert with physician-scientists to bring real-world applications to their studies.

In our vigorous clinical research program, we participate in more than 121 active clinical trials, including with the Children's Oncology Group (COG), a cooperative group for childhood cancer. Other areas of focus include hematopoietic stem cells and their potential clinical applications, as well as the treatment of sickle cell disease, thalassemia and hemophilia.

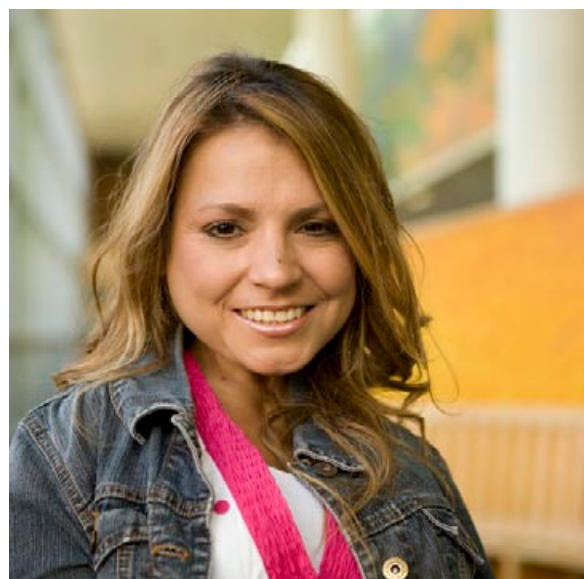
The Center houses the USC-CHLA Institute for Pediatric Clinical Research, where investigations in developmental therapeutics pursue promising drugs in the lab and introduce them into clinical trial for the first time in children and teens, particularly in those with resistant leukemias. Childrens Hospital also operates an NIH-designated pediatric site of a General Clinical Research Center, part of the USC GCRC.

### CANCER COLLABORATIONS

- The Center is home to major, international pediatric research consortia, more than at any other single pediatric institution:
- New Approaches to Neuroblastoma Therapy (NANT) Consortium, funded by the NIH, which links 14 children's hospitals and universities in the search for treatments and a cure, and
- Therapeutic Advances in Childhood Leukemia (TACL), which is conducting early studies of new drugs to bring them to Phase I clinical trials at 19 institutions, including three international sites.



*Sometimes adversity opens a door to opportunity.  
Jeanine Oropeza calls upon her own cancer  
experience to counsel at-risk children and teens.*



## Jeanine Oropeza PhD in psychology

---



Jeanine Oropeza calls upon a lifetime of confronting cancer and other issues to help young people. She was nine months old when a non-cancerous tumor developed near her collarbone. Doctors at Childrens Hospital removed it — twice — followed by chemotherapy and radiation. In 1994, when she was 22, the tumor returned. This time it was cancer — osteosarcoma. After chemotherapy failed to kill the tumor, doctors recommended amputation of her left arm, shoulder and breast.

In Jeanine's many hospital stays, other patients were naturally drawn to her. Dr. Stuart Siegel suggested she'd be a good psychologist. Jeanine now works with at-risk teens and kids with medical challenges, having earned her bachelor's degree in psychology at UC Irvine and her PhD from the California School of Professional Psychology. "They see in me someone who hasn't given up," she says. "I tell them if you have a dream and you love life, you don't stop going, no matter what."

- The Head Start Consortium for Pediatric Brain Tumors, an international consortium which investigates non-radiation based treatments for malignant tumors in very young children to protect cognitive development in survivors.
- CNS Germ Cell Tumors Group, an international brain tumor clinical trials consortium

Childrens Hospital has been designated a Pediatric Brain Tumor Foundation Institute, with a three-year award beginning in 2009. This multi-year, multi-project investigation is zeroing in on the biology and therapy of pediatric brain tumors. In addition, we are furthering studies of neuroblastoma with a Program Project Grant

from the NIH's National Cancer Institute (NCI). And, under another NCI grant, we are pursuing molecularly targeted cancer therapies, part of a nationwide initiative: Childhood Cancer Therapeutically Applicable Research to Generate Effective Treatments (TARGET).

### BLOOD DISEASES

We collaborate with experts in biomedical engineering, biophysics and hematology within our NIH-funded Basic and Translational Research Program (BTRP) studying sickle cell disease. The BTRP involves physicians from Childrens Hospital, as well as faculty from the Keck School of Medicine and the Viterbi School of Engineering at USC.

*Lisa Washington appreciates being able to come to Childrens Hospital, where there are caring, knowledgeable experts in her inherited blood disease.*



## Lisa Washington a scientific mindset

---



Lisa Washington doesn't remember the moment she was diagnosed with sickle cell anemia, an inherited blood disease—she was only three months old. She does recall waking up in Childrens Hospital Los Angeles when she was 11 years old, after having had seizures and a stroke. It was her first sickle cell crisis since the age of four. She stayed in the hospital for two weeks.

Now 25, Lisa hasn't had a serious episode for several years. "You become an expert on your own condition," she says. A biological sciences major at USC, she plans on pursuing a medical career. Each month, she comes to the Day Hospital in the Childrens Center Cancer and Blood Diseases for a blood transfusion. "Everyone knows my name," she says. "They take good care of me."

---

### 2006

First demonstration that "gene chips" — microchips that hold DNA — can be used to determine the molecular signature of neuroblastoma and to predict patient outcomes

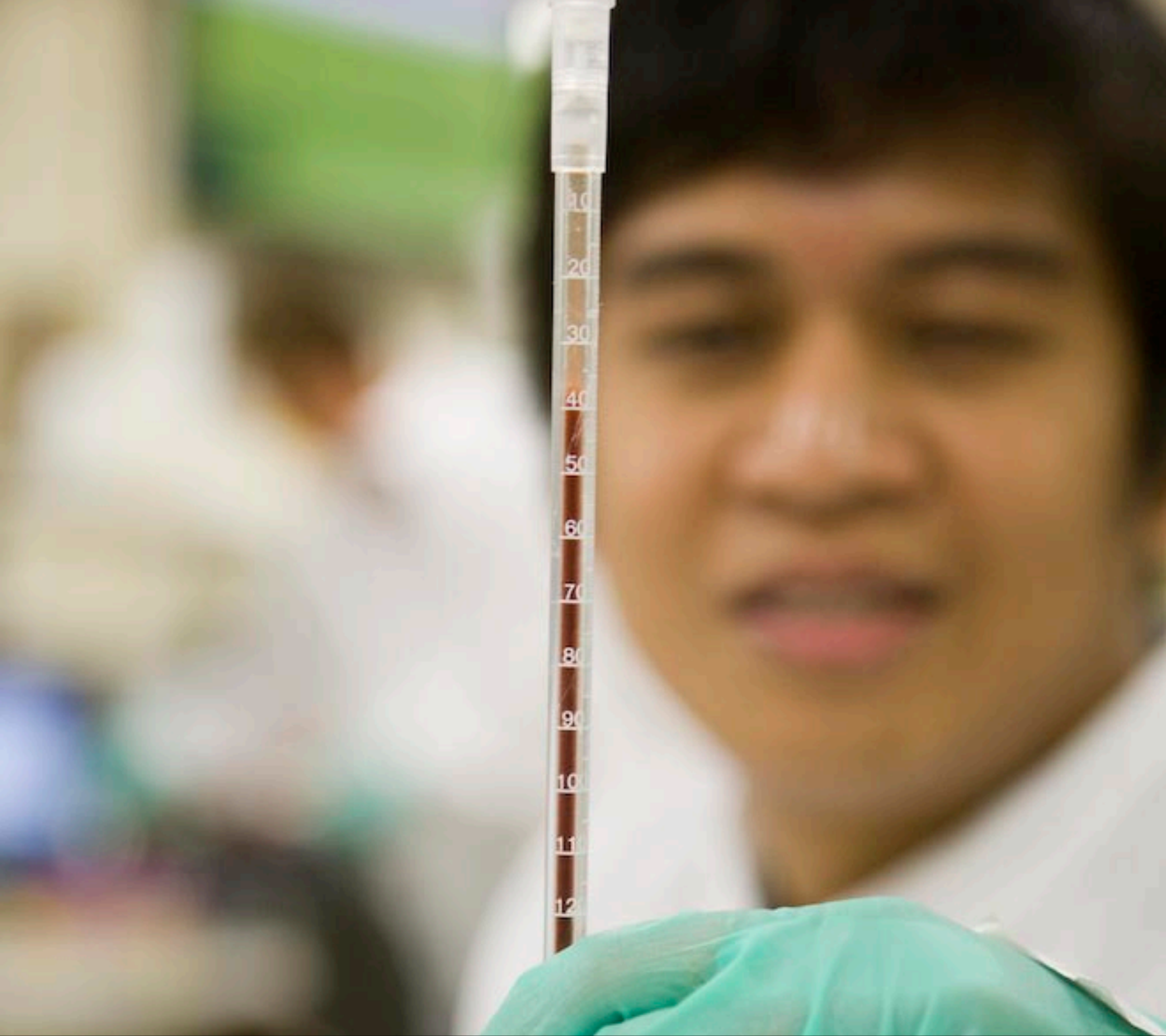
Our Hematology Program conducts pioneering research into the non-invasive measurement and management of iron overload for patients with blood disease, as well as the basic pathology of sickle cell disease, and has become a national center for patients requiring this technology.

### RESEARCH LEADERSHIP

Our doctors and scientists are recipients of multiple grants from the NIH, as well as from private philanthropy and industry. We serve in key leadership roles in the COG, which gives our patients access to the best

and newest therapies anywhere. In addition, our nationally recognized nursing research program is headed by the chair of the COG's nursing committee.

Our Biostatistics and Informatics Center is led by the former group statistician of the COG. We maintain several reference laboratories for the COG and other clinical assays, which are federally certified under the Clinical Laboratory Improvement Amendments, assuring accuracy, reliability and timeliness of patient test results.



The Center's energetic research program includes basic research into cancer's genetic footprint, translational studies that advance the best ideas from the laboratory and groundbreaking clinical trials. Our goal: to find the most effective strategies against cancer and blood diseases.

*Alvin Castillo, clinical laboratory scientist*

# Education

---

## 2007

First reports that obesity is an adverse prognostic factor for childhood Acute Lymphoblastic Leukemia

We are educating the next generation of pediatric oncologists, radiation oncologists and hematologists. We offer a pediatric hematology-oncology fellowship approved by the Accreditation Council for Graduate Medical Education, along with training for pediatric residents, behavioral science trainees and other health professionals. Many of our former fellows are now faculty members and program leaders at prominent hospitals and universities throughout the U.S.

We provide research opportunities in hematology/oncology, neuro-oncology and bone marrow transplantation for postdoctoral fellows. A fellowship training grant from the California Institute for Regenerative Medicine supports post-doctoral scholars exploring therapeutic uses of stem cells.

For more than 30 years, our Summer Oncology Fellowship Program — sponsored by Childrens Hospital and the USC Keck School of Medicine — has attracted top students from universities and medical schools nationwide. Students participate in clinical or laboratory research studies.

The Center mentors trainees from around the world, including Poland, Russia, China, Italy, Nepal, Israel, India, Egypt, Germany and Brazil, who then take their knowledge back to their countries to help treat and cure children. We have cooperative training and research programs with major pediatric medical institutions in China, Russia, Brazil, Mongolia, Italy and Poland. Our faculty routinely lecture in other countries, and we welcome medical observers from abroad.



*Ashley Davis, left, with Margaret Bottcher, RN, MN, CPNP, CPON*

# Pioneering Support Services



At a Teen Impact outing, left to right, are Lisbeth Flores and Carlos Flores (no relation). Tackling the ropes course: Robbi Rabei, left, with instructor.

## HEMATOLOGY/ONCOLOGY PSYCHOSOCIAL AND EDUCATION PROGRAM (HOPE)

A diagnosis of cancer or blood disease can have lifelong emotional and social consequences. Our Hematology/Oncology Psychosocial and Education (HOPE) program — the first of its kind nationwide — is dedicated to improving psychosocial health outcomes for young people at every stage of illness and treatment.

HOPE’s creative programs, now recognized as national models, include:

- The School Transition and Re-entry Program (STAR) helps our young patients return to school, college and vocational programs after receiving cancer and blood disease treatment.
- Teen Impact, a peer-based support group for adolescents and teens with cancer and blood diseases, provides a safe, therapeutic place to get guidance, share experiences and make friends. Teen Impact activities include group meetings, retreats and outings.

- The HOPE Patient and Family Educational Resource Center, which provides free education and referrals, plus the HOPE Portal for online research. A health educator assists families in understanding information they find.
- The Long-Term Information, Follow-up and Evaluation Program (LIFE), one of the nation’s first survivorship programs, founded in 1992. In weekly LIFE Clinics, a team of specialists provides screenings for the long-term effects of treatment, along with wellness education and life skills training. With 300 annual evaluations, LIFE staff help young people transition to adulthood.

In addition, HOPE staff conduct critical research directed at quality-of-life and psychosocial issues in children and families living with cancer and blood diseases.

# Partners in Care



*Music therapist Cheryl Holland with Dylan David*

## 2008

First 100% event-free survival for pure central nervous system germinomas using reduced-dose radiation and chemotherapy with preservation of intellectual function

## RONALD MCDONALD HOUSE CHARITIES®

Many of our patients' families stay at the Los Angeles Ronald McDonald House™ while their children receive treatment at Childrens Hospital. Programs of Ronald McDonald House Charities® of Southern California also include Camp Ronald McDonald for Good Times, which provides free, medically supervised, residential camp sessions.

## PADRES CONTRA EL CÁNCER

Founded in 1985, the nonprofit Padres Contra El Cáncer provides primarily Spanish-speaking families with the resources to combat cancer — the only Latino program of its kind in the U.S. Its services include counseling,

transportation, social services assistance and emotional support in a linguistically and culturally effective manner.

## OTHER VALUED PARTNERS

The Childrens Center for Cancer and Blood Diseases joins with many other community-based organizations, philanthropic foundations and research groups to further our cause of helping children and adolescents not only survive, but thrive, in the face of cancer and blood diseases. Among our diverse and important partners are the American Cancer Society, the Leukemia/Lymphoma Society, The Chase Foundation and the Children's Oncology Group.



KECK  
SCHOOL OF MEDICINE OF USC



**ChildrensHospitalLosAngeles**  
*International Leader in Pediatrics*

CHILDRENS CENTER  
FOR CANCER AND BLOOD DISEASES

Childrens Hospital Los Angeles  
4650 Sunset Boulevard, #54  
Los Angeles, California 90027  
323-361-4100  
[www.ChildrensHospitalLA.org](http://www.ChildrensHospitalLA.org)