

CityNews

RESEARCH • TREATMENT • CURES

New Frontiers in Immunotherapy

Harnessing the immune
system to destroy cancer

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Targeting Breast Cancer

A virus may beat its resistance

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Diabetes Findings

Exploring new ways to
prevent and cure it

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Philanthropy Fuels Progress

For more than a century, hundreds of thousands of dedicated volunteers and donors have devoted time and resources to support the lifesaving work at City of Hope. They have given generously to fuel progress, to witness hope and to fund the future.

Their generosity and partnership has tremendous power. It has launched our journey to prevent and cure the most merciless of diseases: cancer, diabetes and HIV/AIDS. It fueled research that has led to the development of breakthrough cancer drugs – Herceptin, Rituxan and Avastin – and the creation of synthetic human insulin, used worldwide by millions of people with diabetes. And it has transformed City of Hope from two tuberculosis cottages in the desert into a state-of-the art research,

laboratory and manufacturing facility, speeding promising discoveries to clinical trials and transforming cancer treatment.

In this issue of *City News*, you will read about the progress we have made and the opportunities ahead of us, thanks to the energy and commitment of an extraordinary team of researchers, caregivers, donors and volunteers.

It is a time of tremendous potential, great excitement and significant leaps forward. Our scientists and physicians are focused on revolutionary ideas – teaching the body itself to fight off cancer, performing robotic surgery through incisions no larger than a penny and other pioneering work that pushes the boundaries of human knowledge.

These advances are only possible because of the steadfast support of our donors, who embody the spirit of City of Hope. Philanthropists like the Nesvig family, who are devoted to advancing research to cure lymphoma; Emmet and Toni Stephenson, who funded the Toni Stephenson Lymphoma Center; and keen individuals like Shirley Chiu, who shares her story so that it may inspire others.

Our challenge over the decades to come is to continue to accelerate the translation of research discoveries into cures. Our work is not yet done, but with your help, we can make it a reality.

Robert W. Stone
President and Chief Executive Officer
City of Hope

City of Hope is transforming the future of health. Every day we turn science into practical benefit. We turn hope into reality. We accomplish this through exquisite care, innovative research and vital education focused on eliminating cancer and diabetes.

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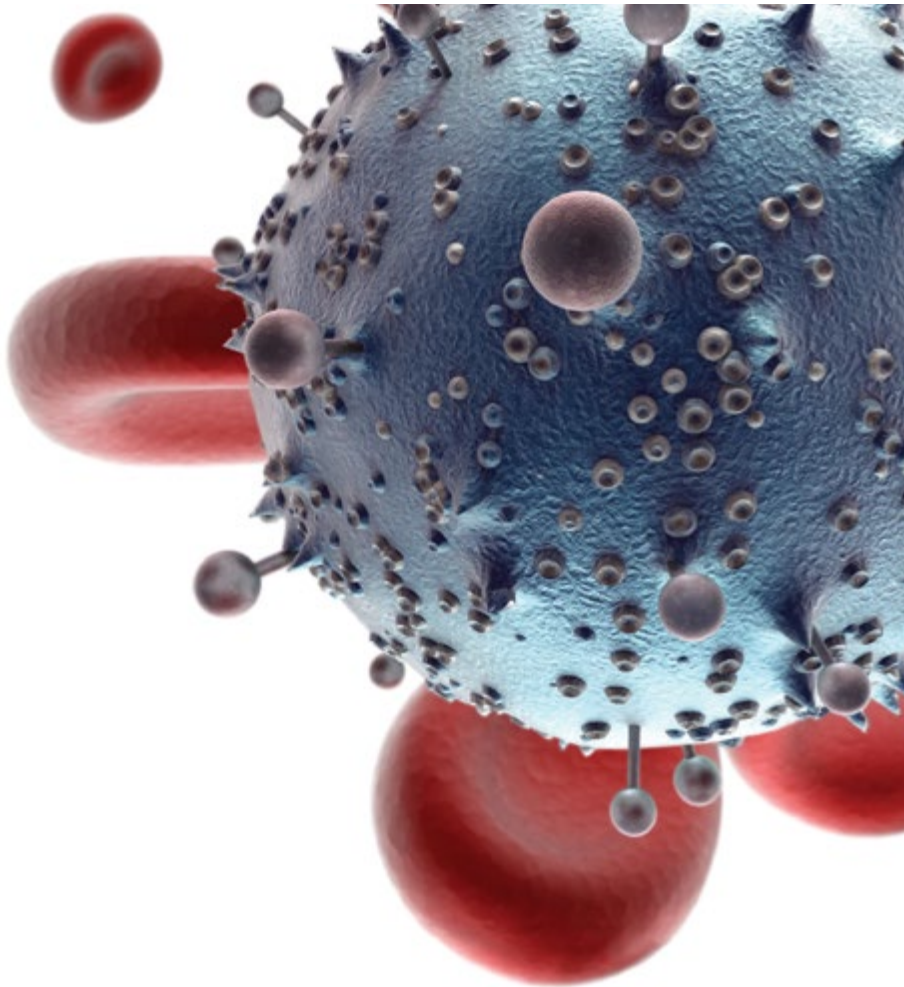
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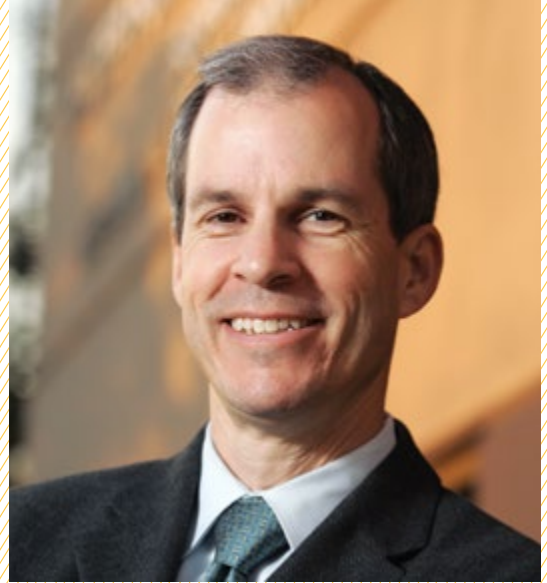
Library grants longtime wish of scientists and doctors.



Larry A. Couture, Ph.D.

Senior Vice President, Sylvia R. & Isador A. Deutch Center
for Applied Technology Development

FOUNDING DIRECTOR COMMITTED TO
**Manufacturing Cures
Here and Globally**



BY DENISE HEADY

Larry A. Couture, Ph.D., founding director of the Center for Applied Technology Development, has spent 16 years at City of Hope. Couture talks about the impact of City of Hope's manufacturing facilities on research at City of Hope and around the world.

CN: In what ways do City of Hope manufacturing facilities stand out?

LC: With two biologic production facilities on campus, we have more production capacity than any other academic program in the world. We can produce nearly any type of biologic product – many which require unique production processes – and do so simultaneously.

We also have regulatory affairs, quality oversight and business development. These functions allow us to provide guidance on everything from FDA submission to preclinical trial planning, intellectual property protection and contracting. To our knowledge, no other program is this all-encompassing.

CN: Could you give one example that illustrates what makes City of Hope's work special?

LC: We've become a nexus for helping other groups move exciting, important technologies from the lab into the clinic. We have been able to successfully produce virtually every new product that we've attempted, no matter how difficult or challenging.

CN: How does our work impact research beyond City of Hope?

LC: We are a critical player in many

major projects. Often, we're their only manufacturing option. The challenge lies in scaling up production of products that were only produced on a small scale in a research laboratory, and in a manner that makes them safe for use in humans.

CN: How are the facilities and outreach evolving?

LC: We've begun supporting international groups and phase 2 productions within the U.S. We're raising the bar on how we characterize products and control for quality. We're improving assay methodologies and qualifying them in a way that will facilitate continued development of some of these products into late-phase clinical trials and, possibly, into commercial development.

CN: Where do you hope to be five years from now?

LC: We do not want to change our primary mission, which is to support projects emanating from City of Hope investigators. However, we built a large facility with capacity beyond that needed by City of Hope investigators at any given time. We are leveraging that capacity to bring in external projects related to the types of products being developed on campus, so we can develop

processes to produce those types of products more quickly, efficiently and cheaply and at increasing scales.

CN: What fact about your facilities do you wish were better known?

LC: We currently produce almost every type of stem cell-derived product being developed around the world. Also, we have the capability of producing larger amounts of viral vectors than any other academic program. Nearly everyone currently reporting success in clinical trials involving lentivirus gets their virus from us.

CN: What is your proudest accomplishment at City of Hope?

LC: Hands down, it's supporting highly probable cures for several cancers. We support the University of Pennsylvania's and Seattle Children's Hospital's chimeric antibody receptor T cell projects. Early clinical trials of both groups have reported complete remissions in patients with two types of leukemia. Those projects would very likely not have moved to this point – at least not so quickly – without our involvement. We look forward to similar achievements in the future from ongoing projects that we support at City of Hope. [CN](#)

Stephanie Neuvirth

Chief Human Resources and Diversity Officer

INNOVATION, COMMITMENT AND DIVERSITY ARE THE KEYS TO

Better Care and Cures



BY DENISE HEADY

Stephanie Neuvirth oversees all aspects of human resources. She also manages organizational design, leadership development and training, and professional development. Neuvirth talks about the institution's innovative workforce development and new partnerships with other organizations.

CN: How does City of Hope stand out in terms of human relations and diversity?

SN: City of Hope is a community of people characterized by our diversity of thought, background and approach, but tied together by our commitment to care for and cure those with cancer and other life-threatening diseases. We are genuinely a diverse community: 40 percent of our managers are racial/ethnic minorities. Overall, our employees are 74 percent women and 67 percent people of color.

CN: Can you give an example that illustrates what makes City of Hope's employees special?

SN: Our employees demonstrate their commitment to our mission to transform the future of health. They volunteer for activities, events and learning opportunities that will help them improve in and beyond their jobs, while promoting City of Hope. Our people are truly committed to making City of Hope a more outstanding place for patients and caregivers, communities and the health care industry. For example, they mentor students, coordinate blood drives, organize food and school

supply drives, and volunteer.

CN: How does our work impact diversity and outreach beyond City of Hope?

SN: Cancer and diabetes touch everyone. Our work has had far-reaching impact. We know that to provide treatment and education, our efforts need to be targeted. We constantly explore opportunities to better serve more diverse populations.

CN: How is your departmental outreach evolving?

SN: In order for Human Resources to support the mission and goals of the organization, we must think and act strategically. It is critical to build on our current talent management, diversity and inclusion initiatives, while continually identifying ways to build a diverse workforce pipeline. We are ensuring our staffing ratios mirror the demographics of the communities we serve to build awareness about careers in health care. We cannot do this by ourselves, so we partner with organizations that can assist us.

Our September diversity health care career expo attracted more than 500 students, parents and professionals

and included representatives from a variety of health care organizations. To our knowledge, this was the first event of its type in Los Angeles, and we look forward to making it an annual event.

CN: What aspect of City of Hope do you wish were better known?

SN: I'd like City of Hope to be known for innovative workforce development solutions and a commitment to build future health care and biomedical talent. We need to attract more diverse patient populations into our research studies and educate diverse populations through a diverse workforce.

CN: What is your proudest accomplishment at City of Hope?

SN: I am most proud of the progress made by our Diversity & Inclusion Council and our Diversity Resource Groups, which have helped City of Hope amplify its focus on diversity and make diversity and inclusion strategic imperatives. This has already made a profound impact on our patients, their families, our community, employees and industry. We have laid the foundation for a dynamic and sustainable diversity and inclusion strategy that I believe will advance our organization and community. **CN**



Adorned With Flowers, Made Possible By Hope

BY JOSEFINA M. TALAVERA

Float designs are well underway and excitement is building for the 126th Rose Parade – America’s favorite New

Year’s Day tradition. Volunteers are awaiting the call to action to help get the floats event-day ready.

On Jan. 1, 2015, City of Hope will participate in the Rose Parade once again. This year’s theme, “Inspiring Stories,” pays homage to everything that surrounds us and fills us with wonder and hope. Our entry this year is called “Made possible by HOPE.” The float will carry patients and their families celebrating their journeys together – a possibility made reality by the physicians and researchers at City of Hope.

The centerpiece of this year’s parade entry is a science vignette that features a DNA helix and a laboratory setting. Wish tags – now symbols of the hopes and dreams made possible by City of Hope – will adorn the float. Hot air balloons will symbolically carry hope to patients around the globe.

Visit our Rose Parade float website at www.cityofhope.org/roseparadefloat to watch the progress on our float and learn more ways you can participate in this annual, HOPE-filled tradition.

We invite you to share your stories with us – those remarkable stories that you tell at family gatherings, stories that inspire you and represent hope.

City of Hope Expands East

BY DENISE HEADY

Patients in the Eastern San Gabriel Valley and Inland Empire area will soon have more convenient access to City of Hope’s innovative science, translational research and patient-centered compassionate care through community practice sites in Glendora, Pomona, Rancho Cucamonga, West Covina and Corona.

The new locations were acquired from Wilshire Oncology Medical Group, whose physicians will join the City of Hope staff. Their current patients will see no disruption in care



during the transition.

The five sites are the most recent additions to City of Hope’s growing list of community practices, all of which extend the institution’s reach by bringing premier care to patients in their own communities. City of Hope

recently opened a state-of-the-art clinic in Antelope Valley and has practices in Palm Springs, Pasadena, South Pasadena, Arcadia, Mission Hills and Santa Clarita. A new site in Simi Valley, our first foray into Ventura County, will open in the fall.



“Stand Up to Cancer” – Pass it On

BY NICOLE WHITE

Rodrigo Nuñez knows something about the power of receiving something good and passing it on. He’s a City of Hope transplant nurse. Nuñez underwent a bone marrow transplant at City of Hope as a teenager. He was inspired to pursue his career by the nurses who cared for him.

Nuñez was a natural choice to kick off a “first” for the Bone Marrow Transplant Reunion: The Baton Pass. The Baton Pass is a joint campaign by Stand Up To Cancer and Siemens to raise funds for Stand Up To Cancer’s research efforts. Stand Up To Cancer is a charitable organization established by film and media leaders to raise funds and awareness for cancer research.

Siemens, which supplies the health care industry with imaging and diagnostic technology, pledged to donate \$1 to Stand Up To Cancer for every pass of the baton, up to \$1 million.

At the reunion, the baton was passed among patients, staff and visitors in City of Hope Helford Clinical Research Hospital and throughout the celebration. It began with Nuñez, who kept his tradition of wearing a tuxedo for the reunion. “It’s a special occasion, like a birthday, but it marks the beginning of my life with City of Hope, which has become a family to me,” Nuñez said.

Celebrating Life – Lots of Lives

THOUSANDS CELEBRATE
YEARS OF LIFE TOGETHER

BY NICOLE WHITE

City of Hope’s 38th annual Bone Marrow Transplant Reunion, held May 9 served as a celebration of life – and of finding new cures for cancer.

“The transplants we do here are not limited by barriers such as borders or differences of culture, ethnicity, religion or history, but are transcended by what binds us one to another as human beings,” said Stephen Forman, MD, the Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation at City of Hope. “In the quest for a cure, the world is actually very small.”

Some partygoers celebrated decades of being cancer-free, treating the date of their bone marrow or stem cell transplant like a second birthday. Others, who were only a few months post-transplant, celebrated just feeling better.

For two patients, the reunion allowed them to meet the donors who gave their bone marrow to save the lives of a stranger on a different continent. For two donors, it meant no longer being strangers to the people they saved.

Kayla Saikaly, a 17-year-old girl of Lebanese descent who received a bone marrow transplant for aplastic anemia, embraced donor Adi Versano, a 27-year-old Israeli woman. They hit it off quickly, and were able to spend a day at Disneyland and watch a baseball game together during Versano’s visit.

George Winston, whose piano, guitar and harmonica music has fans around the world, met donor Antonia Klyn from Germany and gifted her with a box of his CDs. Her donation, he said, will make it possible for him to produce the next 18 CDs he already envisions.

In what’s become a tradition for the



reunion, the Los Angeles Dodgers sent one of their players to visit with patients. This year it was Ron Cey, a former third baseman who was part of an all-star infield and started for the team for eight seasons. Patients shared a variety of talents that ranged from singing to hula dancing, as well as their stories, finding inspiration from each other in a fellowship of cancer survivors.

The Celebration of Life honors the more than 4,000 patients, donors and loved ones who attend the reunion to catch up over cupcakes and barbecue. It also honors the nearly 12,000 patients who have received hematopoietic cell transplants here.

Amid the celebration, Forman reflected that the hundreds of doctors, nurses, researchers and other staff members at City of Hope are focused on serving patients, constantly striving to improved medical care and working to achieve new scientific breakthroughs. [CN](#)

CAR-T CELL THERAPY EXPLORING CANCER CURES RIGHT FROM THE PATIENT

BY CAROLINE HELWICK

PHYSICIANS AND SCIENTISTS AT CITY OF HOPE ARE TAKING IMPORTANT — BY SOME STANDARDS, REVOLUTIONARY — STEPS TOWARD A LONG-SOUGHT GOAL IN MEDICINE: HARNESSING A PATIENT'S IMMUNE SYSTEM TO TREAT CANCER.

Immunotherapy, once marked by fits and starts, has become the most promising area of experimental cancer treatment. City of Hope is helping to make that happen.

In efforts led by Stephen Forman, M.D., the Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation, and Christine Brown, Ph.D., associate director of the T Cell Immunotherapy Laboratory, City of Hope has become a national leader in immunotherapy research. The achievements at City of Hope extend from the complex world of the laboratory — deemed “the bench” — to the world inhabited by the patient — the “bedside.”

“At City of Hope, we are on the hunt for discoveries,” Brown said. Such “bench-to-bedside” progress happens at a fast clip at City of Hope.

CAR-T CELL THERAPY

One approach within the immunotherapy platform involves reprogramming patients' own immune cells to recognize and attack their cancer. This concept, called “adoptive cell transfer,” builds upon the body's own



STEPHEN FORMAN

T cells, a component of the immune system. One type of T cells, called central memory cells, has a unique capacity for self-renewal, proliferation and persistence in the body.

In a nearly futuristic process, T cells are collected from the patient's blood and then genetically engineered to produce chimeric antigen receptors, or CARs, on their surface. CARs are antibody-based proteins that help T cells zero in on the tumor by spotting a specific antigen present on the cancer cell.

The engineered CAR-T cells are then grown in the laboratory, eventually numbering in the billions. The process has been refined and can now be achieved in two to four weeks.

This expanded population of reprogrammed T cells is then infused into the patient where they organize into a potent army against cancer: recognizing and killing tumor cells that express the antigen on their surface. Since these T cells can be genetically engineered to recognize whatever antigen might be relevant to a given tumor type, it may be possible to treat multiple types of cancers, according to Forman.

LEADING STUDIES

■ **Christine Brown, Ph.D.**, associate director of the T Cell Therapeutics Research Laboratory provides scientific oversight for the clinical activities of the lab, participating as co-principal investigator on investigational new drugs using tumor cell-targeting adoptive T cell therapy for treatment of cancer. For these ongoing clinical trials, Brown oversees cell manufacturing, quality control assays and correlative studies.

■ **Xiuli Wang, M.D., Ph.D.**, associate research professor leads a team of talented and industrious researchers on designing and optimizing T cell-based therapy for a variety of hematologic malignancies, including lymphoma and leukemia. Wang

also supervises correlative studies of CD19 CAR-T cell trials and clinical grade CAR-modified T cell manufacturing. With Myo Htut, M.D., assistant professor, and Michael A. Rosenzweig, M.D., M.S., assistant professor, Wang is also developing CAR-T cell therapies to treat multiple myeloma and amyloidosis.

■ **Leslie Popplewell, M.D.**, associate professor, Department of Hematology & Hematopoietic Cell Transplantation, is the principal investigator on the first trials of the use of CAR-T cells to improve the results of autologous transplant as treatment for lymphoma. Patients on this trial get both a transplant and, shortly afterwards, receive an infusion of their own CAR-T cells, hoping to improve the cure rate.



CHRISTINE BROWN



XIULI WANG



LESLIE POPPLEWELL



ELIZABETH BUDDÉ

■ **Elizabeth Budde, M.D., Ph.D.**, is a physician scientist responsible for translating preclinical findings generated in the laboratory to the hematology clinic by designing, conducting and coordinating

continued on page 8

“Developing a successful immunotherapeutic treatment, which could work in so many types of cancer, opens up opportunities for treatment of diseases where effective treatments have been lacking,” Forman said.

HOPE WHERE NONE EXISTED

Although “CAR-T cell therapy,” as this approach is now known, is still limited to small pilot studies in a small number of patients — primarily with acute lymphoblastic leukemia (ALL) and lymphoma — the findings for CAR-T cell therapy, even at this early stage, have been impressive.

According to Forman, at City of Hope “the results of such early studies demonstrate the potential of this treatment for patients who truly have no other therapeutic option. This kind of result gives us a glimpse of the potential of this immunotherapy in other aggressive cancers.”

With the pace of research being rapid, CAR-T cell therapy could become more widely available for some tumor types as early as 2016, he predicted.

CITY OF HOPE MOVES THE RESEARCH FORWARD AT THE BEDSIDE

“Six institutions in the United States are doing CAR-T cell therapy, and City of Hope is one of them,” Brown

“It takes quite a program to be able to put all the pieces of this approach together to treat patients, and at City of Hope, we have what it takes.”

noted. “It takes quite a program to be able to put all the pieces of this approach together to treat patients, and at City of Hope, we have what it takes.”

City of Hope has been working from both the “bench” and the “beside” perspectives. “We started with the basic science, and then transitioned to the clinic. We are now conducting six clinical trials in patients,” she indicated. But it does not stop there. The team will observe the results of these trials, modify and explore more and better ways to further their research. “It’s a cycle — we’re constantly learning.”

The scope of work at City of Hope is facilitated by the fact that we have it all: esteemed laboratory scientists, the manufacturing capability to engineer T cells on site, a hospital with patients and renowned oncologists to treat them, transfusion medicine services, a vibrant transplant program, and researchers

to conduct “correlative studies” that indicate how new therapies work and how they can be improved. City of Hope also has a dedicated “regulatory team” that can accelerate the drug approval process, Brown said.

STUDIES UNDERWAY AT CITY OF HOPE

City of Hope was the first institution to conduct human T cell therapy trials for patients with lymphoma, neuroblastoma (a childhood cancer) and glioma (a type of brain tumor) — and that is only the beginning.

Under an investigational new drug designation from the Food and Drug Administration, City of Hope is the first institution to use modified T cells to treat patients who are undergoing autologous (self) stem cell transplant for lymphoma that has recurred. City of Hope’s team is now the first and only center in California to open a clinical trial using CAR-T cell therapy to treat patients with relapsed ALL.

A clinical trial is also now underway to use CAR-T cell therapy for patients with lymphoma who are not candidates for transplant — again, making City of Hope the only center in California to offer this experimental treatment.

As important, City of Hope anticipates being the first center in the world to



SAUL PRICEMAN



SAMER KHALED



TANYA SIDDIQI



BEHNAM BADIE

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early phase clinical trials. She is working to find, improve and test CAR-T cell-based treatments for lymphoma and leukemia and will lead the trial for treatment of acute myeloid leukemia.

■ **Saul Priceman, Ph.D.**, assistant research professor, is involved in the development of CAR-T cell immunotherapy for solid tumors, particularly for prostate and breast cancer metastases. He and his team are currently building on our experience with CAR-T cell therapy in hematological malignancies, and are also developing strategies to target ovarian and pancreatic cancer. They are using what they have learned to identify existing hurdles and are exploring combined approaches to tackle the microenvironment in solid tumors that suppresses the immune system.

■ **Samer Khaled, M.D.**, assistant professor, Department of Hematology & Hematopoietic Cell Transplantation, is the principal investigator of the phase I clinical trial of adoptive T cell immunotherapy in patients with high risk acute lymphoblastic leukemia.

■ **Tanya Siddiqi, M.D.**, assistant professor, Department of Hematology & Hematopoietic Cell Transplantation, is the principal investigator of the phase I clinical trial of adoptive T cell immunotherapy in patients with relapsed/refractory CD19-positive non-Hodgkin lymphoma and chronic lymphocytic leukemia.

■ **Behnam Badie, M.D.**, is chief of the Division of Neurosurgery and director of the Brain Tumor Program. His research interests focus on brain tumor immunology. More specifically, his research team is attempting to develop novel immunotherapy approaches for malignant brain tumors through the activation of microglia and macrophages using nanoparticles. This research is currently funded by the National Cancer Institute and other organizations.

use CAR-T cell therapy to treat acute myeloid leukemia (AML), the most common form of acute leukemia. Forman and his team have identified the protein receptor on AML cells – CD123 – that will serve as the target for the engineered T cells. In laboratory experiments, they proved that incubating leukemia cells with engineered T cells that recognize the CD123 receptor on the leukemia cell can induce remissions.

“We expect that the first AML patients in the world will be treated here at City of Hope in the first quarter of 2015,” Forman said. Patients with relapsed AML, who have no other treatment options, will participate in this important phase I study.

City of Hope researchers are also among the world’s first to move the CAR-T cell therapy concept into solid tumors. Clinical studies are underway in glioblastoma (the most deadly type of brain cancer), and preclinical work is being done in ovarian cancer, HER2-positive breast cancer (which tends to spread to the brain) and prostate cancer – to be followed with clinical studies in patients. Patients with multiple myeloma will also be beneficiaries of this research and treatment at City of Hope.

FIRST ... IT STARTS IN THE LABORATORY

City of Hope’s Clinical Immunobiology Correlative Studies Laboratory is in charge of evaluating samples and specimens from patients enrolled in trials. This process gives the T cell therapy team a clear picture of how the engineered T cells are likely to function once they’re used for treatment, and how their performance can be improved.

“Correlative studies are a key part of the circle of bench-to-bedside research,” Brown added. “We learn what’s going on in the patient, not just clinically, but scientifically.”

Before CAR-T cell therapy could actually help patients live longer, years of laboratory research had to prove this concept worthy. City of Hope has long been leading that charge, and is committed to making a good thing even better.

For example, our researchers have learned how to make a better viral vector – that is, a more efficient system for delivering into the T cell the genes necessary for its modification. With previous approaches using electric currents, less than one in every 10,000 cells survived the process and produced the necessary antigen, the CAR. Now,

having produced a special virus that introduces the CAR into the DNA of T cells, called lentivirus, researchers have made the job more efficient.

Working with an idea developed by Michael C. Jensen, M.D., while at City of Hope, Xiuli Wang, M.D., Ph.D., associate research professor, Forman and the team have worked to develop a switch to essentially turn off the CAR-T cell therapy when there is treatment-related toxicity or lack of efficacy. They identified truncated cell-surface EGFR as this potential “conditional suicide switch” and are now expanding its application. Today, Jensen is director of the Ben Towne Center for Childhood Cancer at Seattle Childrens Research Institute and professor of hematology-oncology at the University of Washington School of Medicine. City of Hope’s team will be working with Jensen on multisite trials for pediatric ALL and neuroblastoma using CAR-T cells.

Another example of how City of Hope scientists have made discoveries that impact the whole field is their identification of a better T cell for modification. In early work targeting lymphoma and brain tumors, our scientists used effector T cells, which

PARTNERING FOR POWER: Other Immunotherapy Approaches

CAR-T cell therapy might be even more powerful if combined with other immune-modulating strategies. City of Hope researchers are actively at work on an anti-cancer vaccine, and on a way to alter a protein controlling the communication between the immune system and the tumor.

One part of the anti-cancer vaccine, the vector, primes the body to react against a tumor, while the second part, the p53 gene, attacks the cancer. Normally, p53 suppresses the growth of tumors but in many cancer patients the gene is mutated, allowing the tumor to grow. The vaccine is designed to deliver the normal, nonmutated version of the gene to the body to stifle the cancer.

Don J. Diamond, Ph.D., associate chair of the Department of Virology and director and professor of the Division of Translational Vaccine Research, led the development of the p53 anti-cancer vaccine, which was proven safe and potentially effective in 12 patients with advanced tumors resistant to other treatments. City of Hope is making the vaccine on-site in the Center for Biomedicine & Genetics and is planning a phase II trial to test its worth in patients with less advanced cancers.

The other approach involves STAT3, a protein that is used by cancer to talk to the immune system. Years ago, a City of Hope team led by Hua Yu, Ph.D., who holds the Billy and Audrey L. Wilder Professorship in Tumor Immunotherapy, learned how STAT3 works. More recently, they used that information to develop a cancer drug. The novel molecule, CpG-STAT3 siRNA, clamps down on the STAT3 protein. It keeps it from coaxing the immune system to favor the tumor, and activates surrounding immune cells to attack the tumor. The drug may also enhance the effectiveness of CAR-T cell therapy.

"If we don't block STAT3, the T cell will listen to the tumor. With this unique molecule we will be turning off STAT3, blocking the communication, and with CAR-T cell therapy we will be turning on the immune system. We are adding something to make the T cell resist being lured by tumor cells. This is brand new," Yu explained.

In preclinical studies, CpG-STAT3 siRNA stymied the growth of aggressive lymphomas and gliomas, and prevented the development of leukemia in mice programmed for that cancer. Yu and her team are preparing to take CpG-STAT3 siRNA to a first-in-human trial for B-cell lymphoma and glioma. "If this proves safe, we will combine CpG-STAT3 siRNA and CAR-T cell therapy," she said.

Getting this experimental immunotherapy to patients is facilitated by City of Hope's ability to manufacture the drug on-site. "These are discoveries that could be made elsewhere, but here, they can actually benefit patients faster because we can make them on campus," Yu said. "At City of Hope, we put the emphasis on translating these discoveries into patient care."

In a related project, Marcin Kortylewski, Ph.D., assistant professor at City of Hope's Department of Cancer Immunotherapeutics and Tumor Immunology, is designing a unique agent — a nucleotide-based drug that delivers STAT3 inhibitors in the form of siRNA (DNA decoy molecules) specifically into tumor-associated immune cells. The approach strips the cancer's ability to grow and dodge the immune system, while simultaneously bolstering the patient's own anti-tumor immunity. The locally delivered CpG-STAT3 siRNA is undergoing toxicology testing in preparation for clinical trials. The most recent data shows promising results in human leukemia and prostate cancer cells.

“Correlative studies are a key part of the circle of bench-to-bedside research. We learn what’s going on in the patient, not just clinically, but scientifically.”

produced results but the cells did not survive long enough to offer long-term protection. The researchers discovered that a different kind of T cell, a central memory T cell, lives longer in the body and yields better outcomes.

"In our first clinical trial 12 years ago, we saw transient activity from the T cells but it did not persist long enough. Our correlative studies led to new discoveries about the barriers to durable activity and we revised our platform. Now we are embarking on the next round of clinical trials, after our initial models showed we greatly improved the T cells," Brown said.

This laboratory work, all conducted at City of Hope, was informative for scientists everywhere working on CAR-T therapy for B cell malignancies. "The field learned from the research done at City of Hope," she said.

Translational research such as this rests at the heart of City of Hope's mission, with laboratory findings translating into clinical cures. The encouraging results are keeping expectations high, and researchers are hustling to launch new studies that will ultimately bring patients lifelong protection against their cancer. [CN](#)



Engineering Viruses

TO TARGET RESISTANT BREAST CANCER

BY BETSY STEWART

An Approach that Activates a Kill Switch

It has long been said that imitation is the sincerest form of flattery. At City of Hope, researchers are implementing this concept of imitation — of making one thing similar to another — in a leading-edge approach to treating difficult cancers.

City of Hope's new chief of surgery and an enthusiastic researcher, Yuman Fong, M.D., has been developing a therapy that essentially makes resistant breast cancer respond like thyroid cancer, which is cured in 90 percent of patients.

Triple-negative breast cancer — named for its lack of three important receptors that can be targeted with common, effective therapies — remains a challenge for women, as well as for the oncologists who care for them. Fong is

energized by this challenge and the promise of discovery. "If we can find something that can kill [these types of] cancer cells, it would be a big breakthrough for the field," he says.

Fong has been developing a new approach to treating triple-negative breast cancer by starting with what he knows and loves:



YUMAN FONG

viral therapy. He has long studied how viruses can kill cancer. Happily, his expertise in viruses and affinity to the challenge of treatment-resistant cancers is a good fit.

"Many of the reasons these cancer cells are highly resistant to chemotherapy and radiation are reasons they should support the growth of viruses," Fong explains. Cells

become resistant to treatment when they turn off the normal “shut down and die” response to toxins such as chemotherapy and radiation. With this response turned off, cancer cells can support and spread a viral infection.

To further enhance viral therapies, Fong is engineering viruses with genes that induce cell death. He recently published a study that showed that viruses can be engineered to cut off the blood supply to cancer cells, and to stimulate surrounding immune cells to recognize and kill cancer. These engineered viruses are currently in clinical trials for resistant head and neck cancers and for mesothelioma, a deadly type of cancer that grows in the lining of the lungs.

“Many of the reasons these cancer cells are highly resistant to chemotherapy and radiation are reasons they should support the growth of viruses.”

Fong is now engineering viruses to produce a protein called hNIS, which carries iodine into thyroid cells. Using these engineered viruses, physicians can deliver the same treatment to breast cancer patients as they would to patients fighting thyroid cancer: radioactive iodine. When the iodine is introduced into breast cancer cells by the virus engineered with hNIS, it kills cells in a radius of 3mm around the infected cell.

Already proven effective in early studies, this viral treatment is nearly ready for human clinical trials. Fong hopes to start these studies at City of Hope by next year — and to find that, with this new therapy, resistant breast cancer will have the same successful cure rate as thyroid cancer.

New Program Offers Peer Support for Women

Program Pairs Survivors with Patients and Empowers them Both

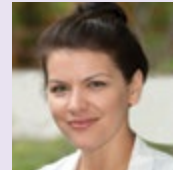
Perhaps this experience is familiar to you: During a difficult time, you receive comfort from friends and family. Still, you sometimes feel isolated and alone. Then you meet someone who has “been there,” someone who understand your struggles, can celebrate your victories and can show you that it is possible to make it through the tough times.

Women battling gynecologic cancers need this kind of support. Although partners, children and friends are important companions, a peer who has been through the same experience can offer a special kind of encouragement, because they truly know what it was like.

To make this possible, City of Hope has introduced a program that offers peer-to-peer care and companionship for women. Called Woman to Woman, the program is a signature initiative of the Ovarian Cancer Research Fund (OCRF), which recently awarded seed funding to start the program at City of Hope. Only 13 other institutions in the country have been selected as sites for the program.

By matching women battling cancer with professionally trained survivor volunteers who provide opportunities for connection, education and

empowerment, Woman to Woman supports patients and their families through all phases of treatment and recovery. In addition to gaining a valuable relationship, women who participate in the program receive materials developed by OCRF that include comprehensive information about gynecologic treatment and survivorship. The program provides financial assistance when it is needed.



MICHELE OCHOA



THANH DELLINGER

Woman to Woman is also committed to its volunteers. The program provides support through monthly meetings and offers a program coordinator to answer questions, address difficulties and help survivors process their experiences.

Through this process, Woman to Woman helps survivors transform a life-altering experience into a gift that can be offered to others.

Michele Ochoa, M.S.W., a clinical social worker in City of Hope’s Department of Supportive Care Medicine, leads Woman to Woman in partnership with Thanh Dellinger, M.D., a gynecologic oncologist in the Women’s Cancers Program. They have involved Volunteer Services, who will recruit and train survivors to serve as peer mentors, and Patient Resources to serve patients who are particularly vulnerable.

Woman to Woman started at City of Hope on July 1. During this first year, staff will carefully evaluate the effectiveness of the program, so that any necessary changes can be made to ensure that women with gynecologic cancers receive the kind of compassionate care that makes City of Hope such a special place. **CH**



EXPLORING HEPATITIS B VACCINE FOR DIABETES PREVENTION

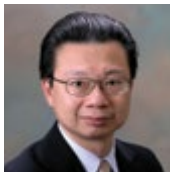
Promising Side Effects

BY NICOLE WHITE

With the Centers for Disease Control and Prevention estimating that one in three people in the United States will be diagnosed with diabetes by 2050, City of Hope is committed to finding new ways to prevent and cure the disease.

One of the most exciting discoveries this year is the potential connection between hepatitis B and diabetes. Research conducted at City of Hope suggests that vaccinating against hepatitis B – a contagious liver disease resulting from a viral infection – may prevent diabetes from developing.

The study, based on an analysis of the National Health and Nutrition Examination Survey (NHANES), found that people vaccinated for hepatitis B had a 50 percent lower risk for diabetes than those who were not vaccinated. This raises the possibility that vaccination against one disease may protect against another.



KEN C. CHIU

“If we can vaccinate patients effectively, there’s a good chance we can reduce the risk of diabetes by at least 50 percent,” said Ken C. Chiu, M.D., from the Department of Clinical Diabetes, Endocrinology & Metabolism.

Researchers still question how the vaccine could protect against diabetes, but the numbers are compelling enough to warrant further study, says Chiu. “It would be so simple to do. We’re thinking about it, and looking for a place that extensively vaccinates people against hepatitis B.”

The study would involve immunizing half of the participants for hepatitis B, but not the other half. All participants would then be followed long-term to compare diabetes rates.



Breaking Free

FIRST ISLET CELL TRANSPLANT PATIENT ENJOYS THE LITTLE THINGS MOST TAKE FOR GRANTED

Diabetes didn't just require changing her diet or taking insulin shots. For Susan Weinberg, diabetes meant she could never be alone.

In some patients with type 1 diabetes, blood sugar levels drop dangerously low and cannot be regulated with insulin. Weinberg couldn't take a nap without setting an alarm that would alert paramedics if she didn't awaken. She couldn't drive, because she was at increased risk of losing consciousness at the wheel.

"I'd become what I call a prisoner in my own body," she says.

That changed a decade ago when Weinberg underwent two islet cell transplants at City of Hope. She has not had an episode of low blood sugar since.

"It not only changed my life; it saved my life," she says.

In patients with type 1 diabetes, the

body attacks cells in the pancreas that produce insulin, which enables the body to process sugar. Transplanting these cells, called islet cells, from a donor pancreas can often restore the pancreas' insulin-making ability.

City of Hope is one of only seven islet cell resource and distribution centers funded by the National Institutes of Health. Fouad Kandeel, M.D., Ph.D.,

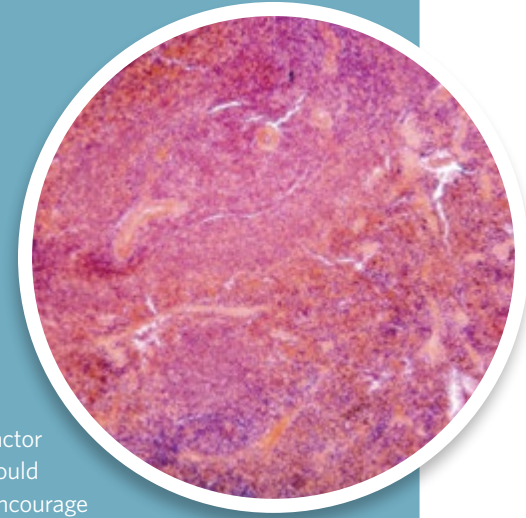


FOUAD KANDEEL

director of the Islet Cell Transplant Program, and his team are perfecting the procedure. They are in the final stages of launching a new clinical trial

that builds on the success of previous islet cell transplantation trials.

As Kandeel perfects the islet cell transplantation process, he continues working with colleagues at City of Hope on other strategies for curing diabetes. Approaches include encouraging the patient's immune system to stop killing the insulin-producing islet cells or support transplanted cells — an effort that would eliminate the need for anti-rejection drugs. Adding growth



factor could encourage the islet cells to grow and multiply, making it possible to reduce the number of cells needed for a transplant.

Kandeel is also a leader in developing imaging methods that will enable doctors to assess the health of islet cells after transplantation.

"Islet cell transplantation is one solution for people whose diabetes has progressed to a life-threatening stage. We've developed new techniques since our first transplant a decade ago, and we believe the procedure can be even more successful. We're committed to applying our resources and best talent to address the needs of diabetes patients," he says.

Funding Backs New Source of Islet Cells

IF THEIR IDEA TAKES HOLD, RESEARCHERS MAY HAVE FOUND A CURE FOR TYPE 1 DIABETES

BY DARRIN JOY

Islet cell transplantation is a promising cure for those with the most severe type 1 diabetes, whose disease cannot be managed with insulin. But of the 200,000 patients who fit this description, only 1 percent are able to receive an islet cell transplant, due to the shortage of donor pancreases.

Teresa Ku, Ph.D., is working to find a new source of islet cells. Her search is



TERESA KU

now backed by a five-year, \$1.9 million grant from the National Institutes of Health.

Donated islets are in very short supply.

Current methods require at least two pancreases per patient to ensure enough islet cells for a successful transplant. Ku, an associate professor in the Department of Diabetes and Metabolic Diseases Research, is looking for ways to grow these insulin-producing cells in the laboratory. This would allow large

batches of islet cells to be prepared in advance for transplantation.

Although embryonic stem cells can be used to make insulin-producing cells for transplantation, those cells carry a potential risk of cancer. Scientists believe that they can circumvent the cancer risk by using stem cells and progenitor cells from adult pancreases.

With the grant, Ku and her team hope to adapt a technique tested in laboratory models to identify stem cells in human pancreases. If they are successful, they may have discovered a source of safe stem cells that can overcome the limited supply of islet cells, giving all patients with type 1 diabetes the possibility of a cure. **cn**

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TAKING MATTERS INTO THEIR OWN HANDS

MUTATION
THOUGHT TO
BE A CURE FOR
AIDS IS SO RARE,
RESEARCHERS
ARE MIMICKING
IT IN THE LAB

BY NICOLE WHITE

Medical advances over the last 30 years have helped evolve HIV infection from a certain death sentence to a chronic condition. However, the disease continues to be a serious health threat, with more than 1.1 million living with HIV in the U.S. and a devastating worldwide death toll.

City of Hope's research team — one of the world's pioneers in the field of stem cell transplantation in HIV-infected patients — continues to seek new treatments for those who have struggled with both cancer and HIV or AIDS, using novel gene therapy and stem cell therapy techniques. In addition to new clinical trials launching, the medical center is exporting its novel technology to other centers for the first time.



JOHN ZAIA

"There continues to be a lot of excitement around the Berlin Patient," said John Zaia, M.D., the Aaron D. Miller and Edith Miller Chair in Gene Therapy and chair of the Department of Virology — referencing a patient who had AIDS and acute myeloid leukemia, and

both appear to be cured by a bone marrow transplant using cells from an unrelated donor with a rare gene mutation. That mutation made him resistant to most strains of HIV. The Berlin Patient quit his HIV drugs, and several years later remains free of the virus.

"The mutation is so rare, you'll never find enough donors who are also a match for the people who need it," Zaia said. "So, we are working to mimic this mutation in our own way."



JOSEPH ALVARNAS

One question of importance is whether transplantation of nonmutated stem cells can have a curative effect on HIV. In two national studies sponsored by the Bone Marrow Transplant Clinical Trials Network, Joseph Alvarnas, M.D., a physician in the Department of Hematology & Hematopoietic Cell Transplantation, leads a multicenter effort to evaluate the outcome of AIDS patients who undergo bone marrow transplant for blood cancer.

The first trial, which transplanted the patient's own blood stem cells, has been



completed. A second approach, transplanting cells from a donor, is currently active and was based on the experience of two patients in Boston who appeared to be cured of HIV for several months following transplants. However, their infections rebounded, a setback that underscores the importance of the trial and the need to continue advancing research.

The research team has completed the only stem cell clinical trial of gene therapy using therapeutic small ribonucleic – or RNA – molecules with anti-HIV activities in patients. The new study, continues the testing of this strategy, developed in the laboratory of John Rossi, Ph.D., Lidow Family Research Chair and chair of the Department of Molecular and Cellular Biology. The stem cells are altered, blocking the genes that HIV needs to infect immune cells, specifically T cells. The study aims to determine if, once infused with these stem cells, the patients will produce T cells that are resistant



JOHN ROSSI



AMRITA KRISHNAN



DAVID DIGIUSTO

to the virus. The study's principal investigator is Amrita Krishnan, M.D., a physician in the Department of Hematology & Hematopoietic Cell Transplantation. Manufacturing of the genetically-modified stem product is under the guidance of David DiGiusto, Ph.D., a research professor in the Department of Virology.

Zaia, Rossi, Krishnan and DiGiusto are also collaborating to provide

TRIANGULATING A NEW APPROACH TO TREAT HIV

California Institute of Regenerative Medicine Funds Gene Therapy and Stem Cell Combination

A new approach to treating HIV could free patients from the virus's tyranny once and for all. The approach will now advance to clinical trials through a \$5.6 million grant from the California Institute of Regenerative Medicine awarded to a team led by City of Hope.

Under the leadership of John A. Zaia, M.D., chair of the Department of Virology and Aaron D. Miller and Edith Miller Chair in Gene Therapy, a team of investigators at City of Hope, Sangamo Biosciences and Keck School of Medicine of USC have been developing this combination stem cell and gene therapy approach. Sangamo will provide an equal amount of funding to advance the project.

"This is an important start that could one day change the way HIV/AIDS is treated," Zaia said.

City of Hope's anti-HIV gene therapy technology to other centers for the first time. The technology used here will soon be "exported" to the National Institutes of Health (NIH) Clinical Center through a grant from the National Cancer Institute. In that clinical trial, AIDS patients with newly-diagnosed lymphoma will receive the gene-modified blood stem cells manufactured at City of Hope after they've completed chemotherapy.

This is a "first generation" approach, and Rossi and his laboratory team continue to expand this work using new strategies for gene therapy with RNA through a recent five-year, \$3.3 million NIH grant.

Several years ago, the "Berlin Patient" became free of HIV infection after he received a bone marrow transplant to treat his leukemia. His donor had a rare mutation that prevents the production of a key protein that the virus needs to infect cells.

City of Hope researchers are exploring a method that targets this same protein.

Using an enzyme called a zinc-finger nuclease, or ZFN, the research team can "edit" the HIV patient's stem cell genes so that they can no longer produce the protein. No protein, no HIV infection.

This study will be the first trial of ZFN technology in human stem cells. Earlier clinical studies in HIV-positive patients show that the ZFN method is generally safe when used with white blood cells.

The current grant will extend the clinical studies to stem cells of HIV patients who have had poor responses to standard therapies.

The scientists hope to begin treating these patients in 2015.

So far, this gene therapy approach has only been tested in HIV-positive patients who require high-dose chemotherapy and transplantation for lymphoma. The transplant regimen has been a necessary part of the process to condition the body to accept the transplanted stem cells.

"For the vast majority of HIV patients to benefit from RNAi-based therapies, we need to find another way to deliver it to them that doesn't require transplantation," Rossi said.

He and his team are examining three delivery methods that show promise for nontransplant patients, and the grant will help them test them for efficacy and refine them. [CN](#)



Back row: John Williams, Ravi Bhatia, Jason Hei Chan, Gregory Cherryholmes, Armen Mardiros, Sergey Nechaev, Samuel LaBarge, Lauren Liddell, Marcin Kortylewski, Richard Ermel. Second row: Defu Zeng, Jeremy Stark, Jerlisa Arizala, Renzo Corzano, Marisa Bowers, Meilen Chang Muñoz, Heather Johnston, Deepti Chadalavada. Front row: John Rossi, Shiuian Chen, John Shively, Steven Rosen, Thomas Cech, Michael Amini, Robert W. Stone, Stephen J. Forman, Janice Huss.

The Future of Hope

FRESHLY MINTED SCIENTISTS EMBARK UPON PROMISING CAREERS IN SEARCH OF CURES

BY VALERIE J. NELSON

At the 2014 commencement ceremony at City of Hope's Irell & Manella Graduate School of Biological Sciences, one word kept popping up: family. As the graduates thanked the many relatives who supported their scientific quests, the newly minted Ph.D.s repeatedly – and often tearfully – recognized the “new family” they formed at City of Hope.

The June ceremony marked the 21st year of the intimate graduate school, which has launched more than 100 students into scientific careers in academia and industry.

City of Hope President and Chief Executive Officer Robert W. Stone said the students had been given “a foundation of greatness.”

“Thanks to this great institution, and thanks to the careers that now lie before you, progress will be made against diseases that cause untold suffering,” said Stone. “Lives will be saved. Stories changed. Families made whole again.”

Nobel Laureate Thomas Cech, Ph.D., who gave the keynote address, echoed Stone’s sentiment. “It’s the discoveries of today that will be responsible for our better health 20 or 30 years from now,” he said.

An honorary doctorate was bestowed on philanthropist Michael Amini, whose contributions to City of Hope include establishing the Michael Amini Transfusion Medicine Center.

On the Duarte campus, the newest graduating class received their Doctor of Philosophy degrees from their laboratory mentors. We share some snapshots of their journeys here:

JERLISA ANN ARIZALA

Born in the Mariana Islands, Arizala said she was “proud to be standing here to represent not only my Pacific Islander heritage and women in the sciences, but ... to represent City of Hope” as she began her biomedical career.

Arizala conducted groundbreaking research on a longstanding problem in HIV biology – the role and mechanism of HIV trafficking through the nucleolus, the dense subnuclear structure of host cells.

MARISA TERI BOWERS

Her “amazing journey” began at Occidental College, when she attended City of Hope’s Eugene and Ruth Roberts Summer Student Academy, a biomedical research program for undergraduates and advanced high school students.

For her doctoral project, Bowers examined how bone-forming cells within the

marrow regulate the growth of blood-forming stem cells. She demonstrated that these interactions are critical to the growth of leukemia-forming cells.

DEEPTI CHADALAVADA

In India, Chadalavada earned a degree in veterinary medicine before enrolling in a City of Hope Division of Comparative Medicine training program that enabled her to earn a doctorate while completing her comparative medicine residency on the Duarte campus and at the University of Southern California.

As a Ph.D. student, she established a mouse model that will be instrumental in testing new molecular therapies for treating lymphomas.

"It was my Mom's dream that I should be a Ph.D. one day," said Chadalavada.

HEI JASON CHAN

With an undergraduate degree in biochemistry and a specialization in computing, Chan undertook doctoral research in the molecular biology of breast cancer and bioinformatics. This interdisciplinary field develops methods for analyzing complex biological data that can be used to predict patient outcomes. His primary focus was on how breast cancers respond to estrogen.

In his keynote address, Cech cited the "omics" era as having the greatest impact on research, noting genomics and proteomics and metabolomics.

"I felt that my project was related to the 'omics' era. The next generation of research is going in that direction, toward personalized medicine," said Chan.

GREGORY ALLAN CHERRYHOLMES

Cherryholmes worked on a project that supports the use of a novel drug that will be used to target deadly cells left behind after chemotherapy for glioma. He found being part of a group that took a new drug into clinical trials to be "humbling and really exciting."

Cherryholmes is now conducting tumor vaccine research at the University of Washington.

RENZO MARTIN CORZANO

Corzano conducted pioneering research that attempted to further the

“Thanks to this great institution, and thanks to the careers that now lie before you ... Lives will be saved. Stories changed. Families made whole again.” ~ Robert W. Stone

development of a new generation of anti-cancer therapies. His project involved identifying and targeting a component that controls the growth and survival of a cancer cell. He then developed a novel method that caused these cancer cells to self-destruct.

"When I think about what this Ph.D. really means to me, I think about the motivation, determination and persistence that it really required," said Corzano, who emigrated to the U.S. from Peru when he was 10. Corzano is attending medical school at New York Medical College.

HEATHER FLORENCE JOHNSTON

Johnston conducted research on drugs targeting immune cells involved in graft-versus-host disease (GVHD), and graft-versus-leukemia (GVL). Understanding the difference between GVL and GVHD and understanding what triggers them can significantly improve bone marrow transplantation by maximizing the benefit and minimizing the risk and severity of side effects.

As a postdoctoral scholar at Stanford University, Johnston is now working on bone marrow stem cell engraftment.

SAMUEL ADAM LABARGE

LaBarge spearheaded a project that studied the role of estrogen-related receptors in skeletal muscle metabolism, the formation of muscle tissue and adaptation to exercise.

Known for being an independent thinker who loosely interpreted laboratory protocols, LaBarge plans to earn a medical degree. He calls himself "a creative rule bender."

LAUREN COURTNEY LIDDELL

As a graduate student immersed in DNA repair and molecular genetics, Liddell made a significant contribution to understanding the links between aging genome stability and cancer. She also discovered that she enjoys teaching as

well as research and plans "to marry both passions."

"City of Hope is just a fabulous place, full of people that are passionate about research," she said

ARMEN MARDIROS

At City of Hope, Mardiros lived "the dream" by helping to develop a potential therapy for acute myeloid leukemia.

"You can't measure how much passion someone has, or their will to accomplish their goals," said Mardiros.

He is now an associate scientist at Kite Pharma, a clinical stage biopharmaceutical company.

MEILEN CHANG MUÑOZ

A native of Havana, Muñoz immigrated to the U.S. as a child and was moved to cancer research partly because the disease "has affected the people I love numerous times."

For her thesis, she solved a puzzle that relates to figuring out how cells repair broken DNA. The answer is important to cancer biology, since many cancer treatments damage tumor-cell DNA.

She is continuing her training as a medical student at UC Davis.

SERGEY NECHAEV

In Siberia, Nechaev conducted a Google search for cancer immunotherapy programs and found City of Hope.

As a doctoral candidate, Nechaev figured out a novel way to deliver certain molecules into immune cells in order to generate anti-tumor immunity. His discovery advanced the therapy to clinical trials.

He is now a paid intern at Illumina Inc., a San Diego-based company that makes products used for genetic analysis.

"I would like to thank this fantastic place where research and medical care are moved around to the benefit of the patient," he said. [CN](#)

MY CANCER DIAGNOSIS: What I Wish I'd Known

THE BEST ADVICE COMES FROM PEOPLE WHO'VE BEEN THERE

BY ROBERTA NICHOLS

The City of Hope series "My Cancer Diagnosis: What I Wish I'd Known" asks former patients to look back and share what they wish they'd known at the time they were diagnosed.

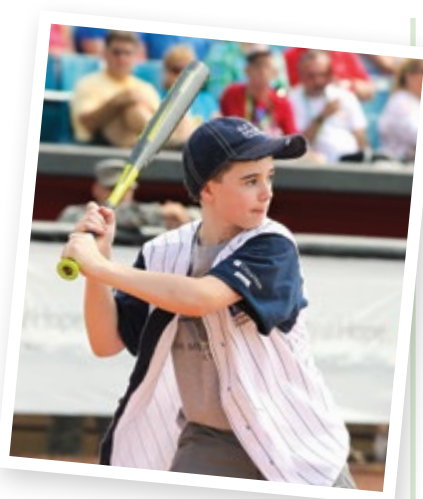
John Cloer

When a child is diagnosed with cancer, parents can be overwhelmed. Bill and Gina Cloer know firsthand what it's like to face the news. Their son, John, was three months shy of his third birthday when he was diagnosed with acute lymphoblastic leukemia in 2004.

For the next three and a half years, he received chemotherapy at City of Hope, finally obtaining long-term remission.

The transition from active treatment to survivorship can be daunting, too. While treatment is behind you, normal may take a little longer to achieve. Every year the Cloers visit City of Hope's Childhood Survivorship Program where they review John's medical progress and are reminded about conditions they need to monitor.

John continues to persevere and thrive, consistently bringing home straight A's. He speculates about his future career (soldier, scientist, doctor or website designer are the current contenders).



“ THEIR ADVICE ...
Educate people around your child. It's not just the family, it's teachers and friends, too. They might think once you're done [with treatment], you're done. It's almost like they think you want to stay in that space because you're not in the hospital anymore. They might not realize things like sun sensitivity and fatigue are issues that persist.”

Karla Wilson, R.N., M.S.N.

NURSE PRACTITIONER, DEPARTMENT OF
CANCER SURVIVORSHIP

“Just because survivors are at risk for a condition doesn't mean they'll necessarily develop it. As patients and their families transition from the hospital to home, and back to school or jobs, there's a fine line between vigilantly monitoring potential problems – and obsessing about every twinge and cold. The goal is to help a youngster grow into a normal adult who used to have cancer.”

As a nurse practitioner, Karla Wilson, R.N., M.S.N., speaks to parents about their children's medical progress after treatment. She shares some of her advice with parents about what to look for as they embrace their child's survivorship.

“ HER ADVICE:
Strike a balance between nurturing your child through the struggle and keeping him or her focused and moving confidently forward.

Children undergoing cancer treatment are often given steroids. Used to help eradicate leukemia cells, steroids also can bloat a child, giving them insatiable food cravings. These cravings may linger, and combined with a sedentary lifestyle, may set patients up for obesity. Adopt a balanced healthy diet.



Children treated with anthracycline chemotherapy may be more susceptible to future cardiac problems. Wilson suggests that children stick to aerobic exercises like running, swimming and biking, and avoid anaerobic activities like weight lifting that would put undue pressure on the heart. **CN**

Researcher Seeks Achilles' Heel IN DEADLY BLOOD CANCER

BY NELLY KHIDEKEL

Unlike some blood cancers, mantle cell lymphoma (MCL) is rarely curable. Although new therapies have emerged, most patients relapse and succumb to the disease. A hallmark of MCL is overexpression of the protein cyclin-D1, which plays an important role in controlling the cell cycle — the step-by-step process by which cells divide and replicate. Unfortunately, targeting the cell cycle function of cyclin-D1 isn't enough.



VU NGO

Vu Ngo, Ph.D., assistant professor in the Division of Hematopoietic Stem Cell and Leukemia Research, is an expert in untangling the complex web of molecular pathways that drive

cancer growth. He recently uncovered an unexpected role of cyclin-D1 in maintaining DNA integrity in MCL cells, which he hopes to exploit as an Achilles' heel to treat the disease. A generous grant of \$225,000 from Gabrielle's Angel Foundation for Cancer Research will enable Ngo to investigate whether targeting cyclin-D1 simultaneously with proteins that guard against DNA damage will be effective at eliminating MCL.

"I am honored to have received this award. It will allow us to better understand the process by which MCL resists current therapies and to devise more effective therapeutic strategies for patients," says Ngo. Within the three-year grant period, Ngo anticipates that his research will lead to the identification of a novel combination therapy to overcome the disease's resistance to chemotherapy.

Ngo is City of Hope's first recipient of an award from Gabrielle's Angel Foundation for Cancer Research. The foundation supports the nation's best and brightest scientists, whose research focuses on finding less toxic treatments for patients with leukemia, lymphoma and related cancers. Since its inception, Gabrielle's Angel Foundation has awarded \$25 million in grants, making it one of the largest nongovernmental sources of grant support for blood cancer research in the nation.

FOUNDATIONS

Pitting Cells Against Each Other

IN ACUTE MYELOID LEUKEMIA TREATMENT, INFIGHTING JUST MIGHT BE THE KEY

BY DARRIN JOY

Elizabeth Budde, M.D., Ph.D., wants to encourage infighting. She aims to turn the immune system on itself for the benefit of patients with acute myeloid leukemia, or AML. In a new treatment she is developing, Budde is using modified white blood cells to attack their malignant cousins.

AML arises when abnormal white blood cells grow out of control, amassing in the bone marrow and interfering with normal blood cell development. Blood stem cell transplants are the only hope of



ELIZABETH BUDDÉ

relapsed AML a fighting chance by modifying a type of white blood cell called a T cell to attack the cancer cells. Although T cells normally fight disease, cancer cells can avoid detection, allowing them to thrive. Under the mentorship of Stephen J. Forman, M.D., Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation, Budde is reprogramming T cells to see the malignant cells for what they are and to destroy them.

Her work is garnering increased attention. Budde, an assistant professor in the Department of Hematology & Hematopoietic Cell Transplantation, has been chosen as The Jake Wetchler Foundation for Innovative Pediatric Cancer Research-Damon Runyon Cancer Research

Foundation Clinical Investigator.

The accompanying \$450,000 grant will support her studies for the next three years.

The grant will support a first-in-human clinical trial to test the safety of the educated T cells and to determine how effective they are in killing cancer cells. It also will support Budde in her search for a method of boosting the potency of the T cells to make the therapy more effective.

Budde believes her studies have the potential to change the treatment paradigm and significantly improve the cure rate for patients with leukemia.

"Support such as this generous award is critical to our clinical research efforts," said Steven T. Rosen, M.D., provost and chief scientific officer. "It represents important and prestigious recognition of the quality of work that Budde and her colleagues are conducting."

In line with its mission to fight pediatric cancers by funding leading-edge research and giving breakthrough ideas a start, The Jake Wetchler Foundation for Innovative Pediatric Cancer Research partnered with the Damon Runyon Cancer Research Foundation in 2011. The Damon Runyon Cancer Research Foundation funds early career cancer researchers who have the energy, drive and creativity to become leading innovators in their fields.

Budde is the third recipient of The Jake Wetchler Foundation for Innovative Pediatric Cancer Research-Damon Runyon Cancer Research Foundation award and the first clinical investigator to be supported through this partnership. She also is the first City of Hope clinical investigator to receive support from either foundation.

Bull's Eye: TARGETING BRAIN AND NERVOUS SYSTEM TUMORS IN CHILDREN

BY ALISSA SPARGO

Although survival rates for many childhood cancers have improved, brain and nervous system tumors remain challenging to cure. Therapies that include surgery and radiation save many lives, but often have detrimental effects on children's growth and development. A major obstacle to successful treatment of brain cancer is the blood-brain barrier, which prevents many anti-cancer drugs from entering the brain. With the support of dedicated donors, two City of Hope scientists have



LINDA MALKAS

developed therapies that take a more selective approach to eradicating cancer cells.

Linda Malkas, Ph.D., the M.T. & B.A. Ahmadinia Professor in Molecular Oncology, is tackling neuroblastoma, a deadly nervous system tumor that accounts for 15 percent of all pediatric cancer deaths. With funding from Steve and Barbara Healey following the death of their 9-year-old daughter, Malkas began researching more effective therapies for neuroblastoma. "A chance meeting with the father of a little girl with neuroblastoma changed the course of my life forever," she says.



ROBERT HICKEY

Malkas and co-investigator Robert Hickey, Ph.D., associate professor in the Department of Molecular Medicine, identified a protein called caPCNA that is exclusively found in cancer cells. This protein plays a key role in DNA repair, cell-cycle signaling and cell death. After screening millions of possible compounds, the investigators synthesized two compounds that selectively disrupt the action of this protein in different ways. In

laboratory studies, inhibition of caPCNA killed many of the tumors and was especially effective against the most aggressive form of neuroblastoma within 48 hours. Since caPCNA is only found in cancer cells, blocking it leaves normal tissues unharmed. These findings were recently published in the prestigious journal *PLOS One*.

The investigators are now refining the two compounds and conducting additional preclinical studies to confirm their findings. If results continue to be positive, City of Hope plans to launch a patient trial in partnership with St. Jude Children's Research Hospital in June 2016. In addition to support from the ANNA Fund, Malkas has received funding from the St. Baldrick's Foundation, two anonymous foundations and the Department of Defense Congressionally Directed Mandated Research Program.

Margarita Gutova, M.D., assistant research professor in the Department of Neurosciences, is also motivated by the devastating impact of cancer on children. Initially trained as a pediatrician, Gutova now aims to discover more effective therapies for medulloblastoma, the most common malignant brain tumor in children. Children are 10 times more likely to develop this cancer than adults, and survival rates are low for infants and toddlers.

Gutova's research takes advantage of the unique properties of neural stem cells, which are able to cross the blood-brain barrier. In collaboration with investigators at Sanford Burnham Medical Research Institute, Gutova modified stem cells to

carry a human enzyme and found that these cells migrated to tumors in the brain. Then, when an anti-cancer drug is injected into the patient, the enzyme converts it into a more powerful drug at the tumor site — thereby concentrating the drug where it is needed, while minimizing the impact on normal tissue. After demonstrating that stem cells can either be injected or administered through a simple nasal spray, Gutova's team is now determining the minimum effective dosage of the drug and refining delivery methods. Her innovative research has been made possible by generous grants from Alex's Lemonade Stand Foundation, the Altschul Foundation, the Matthew Larson Foundation, the Pediatric Cancer Research Foundation and two anonymous foundations. [CN](#)

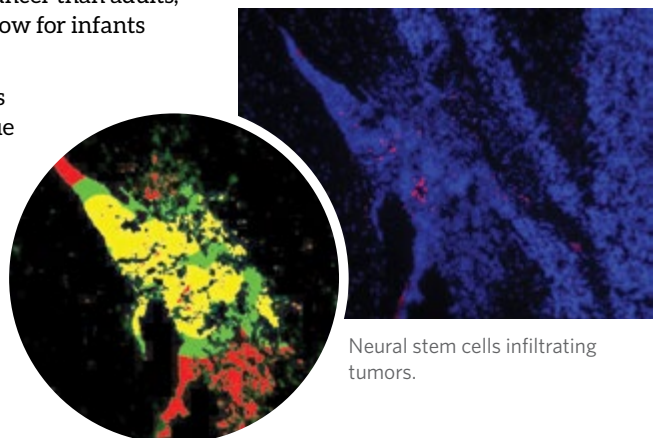


the drug where it is needed, while minimizing the impact on normal tissue. After demonstrating that stem cells can either be injected or administered through a simple nasal spray, Gutova's team is now determining the minimum effective dosage of the drug and refining delivery methods.



MARGARITA GUTOVA

Her innovative research has been made possible by generous grants from Alex's Lemonade Stand Foundation, the Altschul Foundation, the Matthew Larson Foundation, the Pediatric Cancer Research Foundation and two anonymous foundations. [CN](#)



Neural stem cells infiltrating tumors.

Turning Dollars Into Cures

BY MARY SADEGHY

Town & Country magazine held its inaugural Philanthropy Summit at Hearst Tower in New York City on May 28.

This prestigious event attracted notable speakers and attendees to discuss the importance of philanthropy in helping solve some of the world's biggest problems.

The day kicked off with a keynote speech from Michael Bloomberg, the New York City mayor and founder of Bloomberg Philanthropies. The many speakers who followed included Chelsea Clinton, Hunter Biden, Trudie Styler, Donna Karan and Geoffrey Canada, who discussed clean water, education, environmental causes, health care and

other topics of global importance.

City of Hope was privileged to lead the discussion on health care, specifically addressing the important role of philanthropy in helping the organization make breakthroughs in cancer research. Chief Scientific Officer and Provost Steven Rosen, M.D., and Emmet Stephenson, an entrepreneur and philanthropist, spoke on a panel entitled, "Imminent Breakthroughs: Turning Dollars into Cures."

Their lively discussion informed the audience about City of Hope's groundbreaking work, with Stephenson sharing his personal story about how he came to choose City of Hope to treat his wife's T cell lymphoma. The Stephensons'



Emmet and Toni Stephenson with City of Hope's Steven Rosen attend the *Town & Country* Philanthropy Summit.

powerful and personal experience led them to donate \$11 million to fund the creation of the Toni Stephenson Lymphoma Center at City of Hope, the cornerstone of the institution's new Hematologic Malignancies and Stem Cell Transplant Institute.

Partners in Life and in Survival

BY PHYLLIS FREEDMAN

Met Duane Dickeson and Roy Hartwick. The two men met at a neighborhood social event in 2000 and have been together ever since – in sickness and in health. Both are cancer survivors who underwent successful treatment at City of Hope, to which they decided to leave their estate.

A native of Michigan, Hartwick visited a family friend in California years ago and fell in love with the state. He moved here as soon as he could and went on to enjoy a long and varied career with the water district.

Dickeson was born in California, but lived in Oregon for many years before coming home for good. He served in the U.S. Army and had a career with the U.S. Postal Service.

In 2009, Hartwick was diagnosed with prostate cancer. Although there were plenty of good urologists close to home,



Duane Dickeson (left) and Roy Hartwick

Dickeson remembered the successful treatment his dear friend Hans Wehl had undergone at City of Hope. Wehl and his wife, Sharon, have been Seattle Chapter volunteer members, oversaw the City of Hope Seattle Thrift shop for many years and have introduced many people in their area to City of Hope. So after his partner was diagnosed, Dickeson looked up his old friend and sought a referral.

"When you receive a cancer diagnosis, your whole world turns upside down. You're totally blindsided and not sure what to do," Hartwick says. "City of Hope made us feel better the moment we walked through the door. They assigned us a health advocate who was with us every step of the way."

Little more than a year after Hartwick's successful treatment at City of Hope, doctors discovered a very large, possibly cancerous polyp in Dickeson's colon. Without any hesitation, the two men agreed that City of Hope was the best place to pursue care and treatment.

Hartwick and Dickeson share a strong faith in City of Hope that goes beyond patient care. "We are impressed with the research that's being done there," the men say.

Hartwick, an insulin-dependent diabetic for 41 years, notes that they both have family members with diabetes and other serious health issues. "City of Hope is making great strides in getting to the heart of these diseases and finding the best treatments. That's why we decided to leave City of Hope our estate after we're gone," he says.

"At City of Hope, you're not just a case number," adds Dickeson. "The nurses, doctors and aides treat you like family. As part of the family, we wanted to leave them our resources, so they can continue their important work for the next generation."



Pictured left to right: Stephen J. Forman, Emmet and Toni Stephenson, Jon Nesvig, Jasmine Zain, Joe Buck, Hanneke Nesvig, Scott Duxbury, Mieke Duxbury, Carrie Watson, Brian Watson and Robert W. Stone

One Life Inspired a Movement

**A CHANCE CONVERSATION
INSPIRES A FAMILY TO
ESTABLISH RESEARCH
FELLOWSHIP, ENSURING
TIM NESVIG'S LEGACY
LIVES ON**

BY VALERIE J. NELSON

Tim Nesvig was an All-American water polo player turned avid golfer – seemingly the picture of health – when he was diagnosed with non-Hodgkins B cell lymphoma in 2003. He was 28. With an athlete's body and competitive spirit, he was quietly determined to beat the cancer.

At the time of his diagnosis, Nesvig was working as a marketing executive for ESPN/ABC Sports. While he underwent chemotherapy, he continued to fit rounds of golf into his schedule when he felt well enough to play.

Although Nesvig underwent a stem cell transplant at City of Hope, his lymphoma made an aggressive comeback. He was only 30 years old when he died.

"We like to say that the disease overcame him but never defeated him," says his family, who found his steady resolve and positive attitude inspirational. "Tim received the best care possible from the top lymphoma

doctors in the country, and it still was not enough to save him."

During Nesvig's treatment, his mother, Hanneke, struck up a conversation in the City of Hope cafeteria with a researcher who shared an all-too-common reality: There was no funding for his promising research. That chance conversation influenced the Nesvig family to honor the memory of their only son by establishing a fund for research aimed at better understanding the causes of lymphoma and developing more effective treatments. The Tim Nesvig Lymphoma Fellowship and Research Fund is under the direction of Stephen J. Forman, M.D., the Francis & Kathleen McNamara Distinguished



Chair in Hematology and Hematopoietic Cell Transplantation.

To date, more than \$14 million has been raised for the fund through the City of Hope Golf Classic, an annual golf tournament held at the Westchester Country Club in Rye, New York. This year – its 10th – the tournament raised more than \$1.1 million.

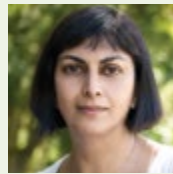
The Golf Classic “plays a pivotal role in the fight, and enables us to celebrate Tim’s life in the effort to cure others with the disease that took him from us,” his family wrote in a thank-you to event participants. His father, Jon Nesvig, is a retired Fox Broadcasting executive. Tim Nesvig’s sisters, Mieke and Carrie, are also devoted to funding the research needed to find a cure for lymphoma.

At the dinner accompanying the event, Forman told how a decade of fundraising in Tim Nesvig’s name had enabled dozens of researchers to “continue to honor and remember Tim, as we pursue this important work to alleviate the devastation of this disease.”

The fund allows investigators to explore innovative methods to understand and treat lymphoma, Forman says. “They seek ways to make lifesaving bone marrow transplants safer. They search out lymphoma’s weaknesses, so they can develop new, more effective therapies that have less toxic side effects. Their investigations hold the potential to save countless lives worldwide,” he explained.

TIM NESVIG LYMPHOMA FELLOWSHIP SUPPORTS LYMPHOMA RESEARCH

Jasmine Zain, M.D., returned to City of Hope as the 2014-2015 Tim Nesvig Lymphoma Research Fellow and director of the T cell Lymphoma Program at the Toni Stephenson Lymphoma Center. She leads a program at the forefront of treating T cell malignancies using novel targeted therapeutic agents, immunological approaches and stem cell transplantation.



JASMINE ZAIN

“I would like to thank the Nesvig family for their contribution to lymphoma research. I am honored to be the next recipient

of this prestigious award and will continue my efforts to cure lymphoma,” said Zain, when her appointment was announced at the dinner following the City of Hope Golf Classic.

Zain’s research will focus on developing new treatments for T cell and other lymphomas through clinical trials of new and novel therapies, including early trials of novel agents that target molecular pathways essential to the development of lymphomas.

She also plans to investigate ways to overcome immune tolerance, which is increasingly recognized as an effective therapeutic target for cancer treatment.

A graduate of Pakistan’s Fatima Jinnah Medical College for Women, Zain joined City of Hope in 2002 to specialize in the treatment of patients with cutaneous T cell lymphoma, allogenic stem cell transplantation and early-phase clinical trials in hematologic malignancies. She left in 2008 to direct the bone marrow transplantation program at NYU Langone Medical Center, before joining the Columbia University Medical Center faculty in 2012.

Of the fellowship that brought her back to City of Hope, Zain echoed a sentiment shared at the 2014 City of Hope Golf Classic by Stephen J. Forman, M.D., with whom she has collaborated on a number of studies. “The Nesvigs’ contributions to funding research have allowed a long line of committed investigators to make valuable contributions to the understanding and treatment of lymphoid malignancies, and in turn impacted the lives of many patients and their families.”

Fox Sports announcer Joe Buck served as master of ceremonies. About 240 golfers and nearly 400 dinner guests attended the event, which was co-chaired by Dave Cassaro, Bob Cook, Neil Mulcahy, Mike Slinger, Bill Wanger and Ed Wilson.

When Internet publishing entrepreneur Toni Stephenson addressed the dinner guests, there were no dry eyes in the room. Her emotional connection to City of Hope as a recent patient and major donor had tremendous impact.

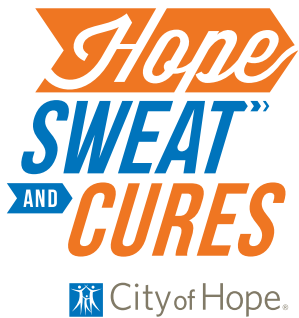
Diagnosed with lymphoma last year, she called City of Hope “a hotbed of innovation that helps make tomorrow’s therapy possible today.”

After benefiting from revolutionary treatments funded by the Nesvig family, Stephenson was moved to follow in their footsteps. She, along with her husband, Emmet, and their daughter, Tessa Stephenson Brand, donated \$11 million to create the Toni Stephenson Lymphoma Center at City of Hope. [CN](http://www.cityofhope.org/citynews)

Making Fundraising an Adventure

BY KELLY MAYFIELD

EVERYTHING ABOUT HOPE SWEAT & CURES, CITY OF HOPE'S NEW NATIONAL FITNESS FUNDRAISING PROGRAM, IS BIG. The races are big, the commitment is big and, soon, the impact will be big!



Hope, Sweat & Cures is asking you to go big in the name of raising money to support research by participating in marathons, half-marathons and other endurance events in beautiful destinations. Hope Sweat & Cures provides access to highly sought races by securing coveted entry spots. After the Napa to Sonoma Wine Country Half Marathon sold out to the public in November 2013, the only way to participate was through Hope Sweat & Cures, which held 20 entry spots. City of Hope was an official charity of the Wine Country Half Marathon race series, which also took place in Oregon, and in Healdsburg and Temecula, California, as well as other locations.

Hope, Sweat & Cures also partnered with *Cooking Light* and *Health* magazine's Fit Foodie 5K Race Weekends, the first of which kicked off in Fairfax, Virginia, in June. Fit Foodie 5Ks also took place

in Austin, Texas, and San Diego. The weekends included lots of options: celebrity chef demonstrations, food samplings, wine tastings, sunrise yoga, brunch and more.

"We say, let's sweat the big stuff, the things that really matter, like curing cancer, diabetes and other life-threatening diseases," says Megyn Byrnes, director of national events at City of Hope. "This is about challenging people to do something big, both physically and mentally."

Each participant commits to raising a minimum contribution through donations for each event. Events come with their own perks, and all participants are offered tips and guidance on training, fundraising and team building.

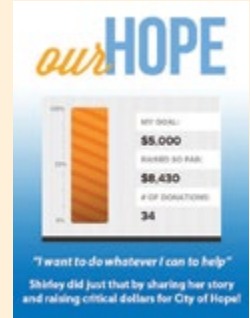
Hope, Sweat & Cures highlights City of Hope's research, suggesting that physical activity may reduce the risk of cancer. The program encourages those who are already active to challenge themselves at a higher level and provides others with compelling opportunities adopt a healthier, more active lifestyle.

+ FOR MORE INFORMATION on Hope, Sweat & Cures activities, please visit nationalevents.cityofhope.org

"I'm Doing This for City of Hope."

BY EMILY FIELD

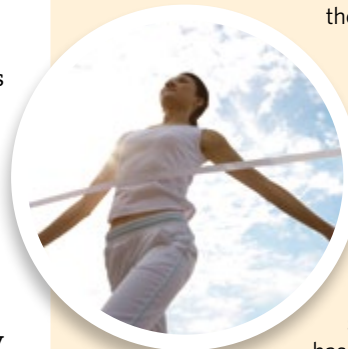
Shirley Chiu, a lymphoma survivor and former City of Hope patient, is using ourHope, City of Hope's personal fundraising tool, to support lymphoma treatment and research.



"I really owe it to City of Hope for giving me this second chance at life. Going there is like going to visit family, and I want to do whatever I can to help," she says.

Despite difficulties during treatment and recovery that lasted several agonizing months when she feared she would never walk again, and relapses in 2009 and 2010, Chiu has been cancer-free since 2011. Today, she enjoys swimming and yoga — activities that seemed unimaginable just a few years ago.

Chiu's journey to recovery has been an inspiration to many people in her life. They encouraged her to tell her story in a book. When she heard about ourHope, she knew it was the perfect opportunity to help City of Hope and share her story. "I'm not very technologically advanced. This was the very first time I had to make my own webpage, but I did it!" she says proudly.



Despite her technological naivete, Chiu has had outstanding success raising funds through ourHope. Contributions of \$8,000 to date make her one of ourHope's greatest successes yet! And while Chiu has received a record number of gifts, she has found the time to thank every donor individually through her ourHope page.

"City of Hope got me to this point. Otherwise, I wouldn't be here," Chiu says.

We're proud that Shirley Chiu is an ourHope fundraiser, and we are inspired by the outstanding results of her fundraising page. Thank you, Shirley! **CN**

+ IF YOU WOULD LIKE TO SHARE your inspiring story and raise money for the cause you choose, please visit ourHope at cityofhope.org/ourhope or email ourhope@cityofhope.org

NATIONAL LIFE INSURANCE COUNCIL

New Industry Added to City of Hope's Support Groups

BY KEN BIRKETT

Business has been the cornerstone of support for City of Hope for all of its history. In 2013, a number of executives and top producers from the life insurance industry joined City of Hope, forming the National Life Insurance Council (NLIC). The NLIC is dedicated to help fund research, treatment and educational programs taking place at City of Hope through an annual life insurance industry fundraising campaign.



Kevin Yerkovich, Bob DiMeo, Paul Possemato, Craig Renfrew

Fundraising programs this year included two golf tournaments, one at Annandale Golf Club in Pasadena, California, and one at Caves Valley Golf Course in Owings Mills (Baltimore), Maryland. The group has also started a strong personal gift club for the board members. The 2014 fundraising goal is \$400,000 for the group and they are currently looking for their first honoree.

The group's chair Royce Imhoff, managing director of Lion Street (Austin, Texas) and vice chair is Bob DiMeo, managing director of Crump Life in Los Angeles.

MUSIC, FILM AND ENTERTAINMENT INDUSTRY



Bruce Resnikoff, John Frankenheimer, Paula Cue, Eddy Cue, Robert W. Stone, Robert Kondrk, Don Passman, Zach Horowitz and Jason Morey at Sept. 3 Music, Film and Entertainment Industry tour of City of Hope.

Industry Honors APPLE Executive

FIRST CAMPAIGN TO VENTURE INTO TECHNOLOGY SECTOR

BY DOMINIQUE GRIGNETTI

City of Hope's Music, Film and Entertainment Industry group honored Eddy Cue, senior vice president of Apple's Internet Software and Services, with its 2014 *Spirit of Life*® Award on Oct. 23 at the Pacific Design Center in Los Angeles. Cue is the first honoree from the technology sector, an acknowledgment of the exciting ways technology and entertainment now intersect to enhance the consumer experience.

"We couldn't be more excited to be recognizing Eddy Cue with City of Hope's highest honor," said Jason Morey, president of City of Hope's Music, Film and Entertainment Industry Group. "City of Hope and Apple are both renowned for their passionate embrace of innovation and change. Eddy embodies that same passion. He has played a hugely important role for Apple as it has revolutionized the way consumers enjoy everything from music to films to TV to books to apps. He is an

extraordinarily worthy honoree."

"I'm truly honored to be this year's recipient of The *Spirit of Life* Award. The research that City of Hope does impacts the lives of millions and their work personally means a lot to me," said Cue. "City of Hope uses the latest research and technology to fight cancer and other catastrophic diseases. I hope that everyone who can, gives what they can to City of Hope so they can continue to fight the battle against cancer."

Cue joins an illustrious group of honorees that includes CAA's Head of Music Rob Light, Clear Channel Chairman and CEO Bob Pittman, Azoff MSG Entertainment Chairman and CEO Irving Azoff, Sony Music's Clive Davis, NARAS President and CEO Neil Portnow, MTV President Van Toffler, former Universal Music Group chairman and CEO, now Sony Music Chairman and CEO Doug Morris, former Warner Music Group Chairman and CEO Edgar Bronfman, Quincy Jones and many others.

NORTHERN CALIFORNIA REAL ESTATE & CONSTRUCTION COUNCIL



Carmen Policy (left) and Christopher Meany

Helping People Have Rich, Full Lives

SAN FRANCISCO EVENT BREAKS GROUND AND FUNDRAISING RECORDS

BY HEATHER OLINTO

The Northern California real estate & Construction Council presented its annual *Spirit of Life*® Award to Christopher Meany of Wilson Meany on April 29. The *Spirit of Life* Award, City of Hope's highest honor, recognizes outstanding business leadership and philanthropic achievements.

More than 850 real estate professionals attended the event which raised a record-breaking \$850,000 to benefit the lifesaving research and treatment programs at City of Hope.

Meany has been executing innovative urban infill developments in California since 1985. Presently, he leads the redevelopment of Bay Meadows in San

Mateo, Hollywood Park in Inglewood, and co-manages (with Lennar) the redevelopment of Treasure Island in San Francisco.

Carmen Policy, former 49ers executive, interviewed Meany onstage about the honoree's 30-year real estate career and philanthropic efforts. "Real estate at its best is about helping people have rich, full lives, and that's similar to what City of Hope does, though in much more rarified air," said Meany. City of Hope faculty speaker, Linda Malkas, Ph.D., shared her personal view of City of Hope's unique infrastructure that allows for scientific ideas to move quickly from the laboratory to the bedside, also known as "translational medicine".

The evening included a fund appeal to purchase an Aperio Imaging System which allows Malkas and her team to detect new biomarkers that indicate the presence of cancer, as well as new targets for therapy. This research is critical to developing earlier detection methods and less toxic, more effective treatment.

Top financial sponsors for the dinner include Colliers International, Gibson Dunn, Kilroy Realty Corporation, Stockbridge Capital Group, Wilson Meany, Plant Construction Company LP and Webcor Builders.

NORTHERN CALIFORNIA FOOD INDUSTRIES CIRCLE

Gift to Fund Support for Chinese Speaking Patients

BY HEATHER OLINTO

Longtime food industry supporters, Bob and Susan Lim, have committed to funding the expansion of SupportScreen technology at City of Hope. Their \$100,000 donation will underwrite the expense of translating the technology into Chinese.

"While growing up with Chinese speaking parents, I've experienced firsthand how language and culture can be a communication barrier to the outside world," says Bob Lim. "Susan



Bob and Susan Lim

and I are excited to partner with City of Hope in advancing the revolutionary SupportScreen patient screening process. Developing the Chinese language SupportScreen is a significant step in expanding the technology to more effectively care for patients who may otherwise struggle to

understand and communicate their health concerns and issues."

The Lims have been supporting City of Hope for more than 20 years through the Food Industries Circle. Over the years, Bob Lim has inspired his colleagues and peers to get involved in the group and invest in City of Hope's mission. While as vice president of sales in the western region for Kraft Foods Group, he organized a successful golf tournament and participated in various fundraising promotions that generated more than \$5 million for City of Hope's research and treatment programs.

Bob and Susan Lim's recent personal contribution represents their commitment to City of Hope's dedication to treating the whole person, and not just the disease. [CN](#)



Nearly a century ago, small groups of women and men united to help City of Hope bring care and dignity to people suffering from tuberculosis. These first local chapters reached out nationwide to like-minded people in their effort to support City of Hope in the fight against disease. Today, chapters — dedicated groups of individual volunteers who raise millions of dollars to advance innovative research, treatment and education programs — remain a critical part of City of Hope's fundraising efforts.

CHICAGO



Lorraine Santoro, Phyllis Dropkin Chapter president, Frank Carl Calabrese, Rhoda Ehrlich, Southeast Region president and Christopher Lincoln, director of the Chemical GMP Synthesis Facility at City of Hope

Chicago Native Turns Dreams to Hope

BY SHARI MEEHAN

City of Hope's Phyllis Dropkin Chapter honored Frank Carl Calabrese, thoroughbred racing owner, with the Larry Paskow Award for outstanding philanthropy at Gulfstream Park, Florida. Calabrese gifted over \$50,000 to City of Hope as a tribute to his sister who succumbed to cancer at age 48.

Phyllis Dropkin Chapter vice president,

Ricky Paskow, was on hand to congratulate Calabrese upon receiving the award commemorating her late husband, Larry, a former City of Hope board member.

Calabrese owns about 70 race horses and holds leading-owner trophies from top tracks. His champion filly, Dreaming of Anna, named for his late sister, won the 2006 Breeders' Cup Juvenile Fillies.



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CHAPTERS AND REGIONS

FLORIDA

BRONZE BEAUTY

FLORIDA CHAPTER MEMBER GIFTS BRONZE SCULPTURE TO CITY OF HOPE

BY SHARI MEEHAN

Thanks to Phyllis Dropkin Chapter member Selma Silverman and her late husband Ralfe, the bronze sculpture Sferosnodo by Claudio Capotondi is proudly displayed in the lobby of City of Hope's Annette & Jack Needleman Center. Silverman was recognized for her long-standing support for City of Hope at the Southeast Region's 2014 Children of Hope Luncheon, receiving a prestigious Bess Plasky Award, named for the region's philanthropic founder. In gifting the sculpture,



Selma Silverman (right) and son Scott Barnett

Silverman commented, "This piece reminds me of the brotherhood of man, which suits City of Hope's global impact and philosophy."

red, delicious and nutritious

Wondering what to do with all those pomegranates? Eat'em. They're rich in antioxidants, and compounds in them slow growth of breast and prostate cancer cells.



A VISION TURNS INTO A FAMILY AFFAIR



NORTHWEST REGION About five years ago, Jackie Lobacki, a longtime Seattle Chapter member, visualized the idea of a mah-jongg luncheon as a fundraiser. Lobacki's vision was successfully implemented and the mah-jongg fundraising luncheon is now a reality. After two years of chairing the event, she relocated to Arizona, and one of the luncheon participants, Joseph Abolafia, vowed to continue this fun event in memory of his beloved mother, Betty, another longtime Seattle Chapter member. When Abolafia volunteered, something unexpected happened: Hosting the mah-jongg luncheon became a family affair. Abolafia's sisters, Marilyn and Vicki Lynn, along with his spouse Mark, became the committee to plan and implement the luncheons. Fundraising luncheons have generated nearly \$50,000. From left, Vicki Lynn Babani, Joseph Abolafia, Mark Larson and Marilyn Shulman.

PACIFIC NORTHWEST



Marshall Cotta, Pam Cotta, Michael Raineri (Circle of Hope Chapter), Michael Jensen, Janice Brumer (Donnez Nous Chapter) and Darlene Siegel (Seattle Chapter)

Deli Night Fundraiser Inspired by Survivor

BY NORMA MORRIS

The Seattle, Donnez Nous and Circle of Hope chapters collaborated to host a Deli Night fundraiser on May 19 at St. Mark's Cathedral in Seattle. The event's featured speaker was 16-year old, Marshall Cotta of San Diego, California. Marshall, a cancer survivor, shared his experiences as a pediatric patient at City of Hope. Accompanied by Seattle's busiest singer/pianist, "Mr. Piano Man," Victor Janusz, Marshall and dedicated a song to the group. Janusz entertained the audience with his rich voice and smooth melodies throughout the evening. [CN](#)

HOW TO REACH US

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MEDICAL CENTER
800-423-7119

PATIENT REFERRAL LINE
(for patient-referral inquiries)
800-826-4673

TO MAKE A GIFT

LOS ANGELES DEVELOPMENT
OFFICE
800-667-5310

CITY OF HOPE REGIONAL
DEVELOPMENT OFFICES

Midwest Region
Chicago Regional Headquarters
800-779-5893

Northeast Region
Philadelphia Regional Headquarters
800-344-8169

Northwest Region
San Francisco Regional Headquarters
800-732-7140

Seattle Office
800-934-9196

Southeast Region
Florida Regional Headquarters
(Fort Lauderdale)
800-584-6709

Southwest Region
Los Angeles Development
Headquarters
800-544-3541

Desert Communities Office
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800-732-7121

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PICTURE THE PAST



A CENTURY OF
DISCOVERY —
a series of photos
and stories from
the City of Hope
Archives reflect the
institution's rich
history, showcasing
its scientific
achievements,
compassionate
patient care and
philanthropic
achievements from
the past century.

A Valuable Resource ... TO MEDICAL AND SCIENTIFIC PROGRESS

BY SUSAN DOUGLASS YATES

On a warm day in May of 1983, friends, family and staff gathered to break ground for the Graff Medical and Scientific Library. After the first shovels of earth had been turned over, everyone joined in a luncheon and speeches to thank Lee Graff for her ongoing support of City of Hope and to acknowledge the value of the new library.

Graff's commitment to building the facility that bears her name began when she learned that a comprehensive library was at the top of the medical and scientific staff's wish list. A longtime supporter of City of Hope and member of the board of directors, Graff quickly set to work to raise funds. She provided an endowment and enlisted the help of business associates and friends to raise additional dollars. By the time the groundbreaking took place, more than \$1.35 million had been raised.

The library opened on Aug. 20, 1984, the tangible result of the Graff family's long history of support of and connection to City of Hope. It all began when Lee Graff

and her husband, Seymour Graff, joined the Merchants Club (later known as the Apparel Industries Group). Seymour Graff served on the board of directors starting in 1954 and served as chair from 1961 to 1964. The western wing of the new biology research complex, known as the Richard Lippman-Seymour Graff building, was dedicated in honor of Seymour Graff in 1965. Dedication of the Graff Garden Plaza followed in 1975. This plaza, located near the main entrance to the medical center, continues to provide a restful spot for visitors, patients and staff.

At the 1983 groundbreaking luncheon, former Executive Medical Director Rachmiel Levine, M.D., said that, "A library is the source of cures for all diseases. It is in the library that physicians and scientists read of others' ideas in the literature and then go back to their labs or bedsides to try further improvements." Thirty years later, Levine's words still ring true as the Graff Medical and Scientific Library continues to be a key resource supporting the mission of City of Hope. **CN**



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City of Hope strongly supports and values the uniqueness of all individuals and promotes a work environment where diversity is embraced.

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