City Hope. City Hope. RESEARCH - TREATMENT - CURES

Vision of the Future

Shaping it takes curiosity and bold thinking
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The Mysteries of Lymphoma

Researchers are coordinating efforts and expanding the hunt for answers

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Revolutionizing Diabetes Care

The quest for curing type 1 diabetes is well underway PAGE 20

LEADERSHIPMESSAGE



A Tale of One City

"It was the best of times; it was the worst of times." When Charles Dickens penned the opening line of "A Tale of Two Cities" more than 150 years ago, he couldn't have known those words would describe today's rapidly changing and increasingly complex U.S. health care system.

Yet, the tale of our City is very different. At City of Hope, we see this as the best of times — this inflection point as a time of promise. With our advances in research and compassionate care we are poised to make an even greater difference in the communities we serve and the lives we touch

Futurists predict that, within the next 20 years, cancer will become the leading cause of death in the United States, due largely to the aging of our population. Yet the future also holds great promise. Oncology leaders, scientist and clinicians agree that we are on the verge of a new era of cancer care. They expect that progress in the next 20 years will exceed what has been achieved in the last 50, as personalized, gene-based medicine becomes a reality.

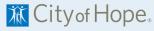
In this issue of City News, you will read the tale of City of Hope. Every year, millions of people around the world benefit from therapies developed here. This is a place where innovative discoveries and novel treatments revolutionize the fields of cancer research as well as cancer prevention, detection and care. In the following pages, you will meet hematological researchers who are unraveling the mysteries of lymphoma, basic researchers who are developing new preclinical models to create a personalized approach to medicine and new leaders who are transforming the future of health. These are only a few of the lives in our City, lives joined together to advance the understanding, prevention, treatment and cure of cancer.

Our goal is to make families whole and futures complete.



Robert Stone

President and Chief Executive Officer City of Hope



RESEARCH · TREATMENT · CURES

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.

2012 City of Hope

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Interim Senior Vice President, External Relations and Strategic Communications MARILYN WILKER

Associate Vice President,

TAMI DENNIS

City News Editor
Senior Director, Communications
FRAN RIZZI

City News Contributing Editor **HOLLY STRAWBRIDGE**

Copy Editor **LAURIE BELLMAN**

Designer, Creative Services **KRISTEN SANTONI**

Director, Creative Services **STACY KIMMEL**

Printing COLORGRAPHICS

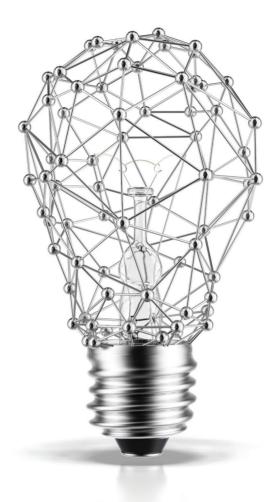
Writers

SUSAN DOUGLASS YATES MINDY FINKELSTEIN JENNIFER FINNIE DOMINIOUF GRIGNETTI YOLANDA GUERRERO LYNNE HAGERUP RACHEL J. HALL SHARI MEEHAN **ERICA HELWICK ROBYN HIMA** NORMA MORRIS ROBERTA NICHOLS **HEATHER OLINTO** AL OLSEN KIM PROESCHOLDT FRAN RIZZI H. CHUNG SO BETSY STEWART HOLLY STRAWBRIDGE NICOLE WHITE



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A SEMIANNUAL PUBLICATION OF CITY OF HOPE



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Hone



WOMEN'S CANCERS WOMEN'S CURES

OMEN'S

PRESENTED BY



SUNDAY, NOVEMBER 2, 2014

City of Hope Duarte, California

Register Now!

WALK4HOPE.ORG

TARGET: LEUKEMIA

Leukemia arises when blood stem cells, which are born in the bone marrow, go awry. The cells turn malignant and rapidly spread. Until the late 1960s, overall survival rates for the disease remained dismally low, hovering around 14 percent.

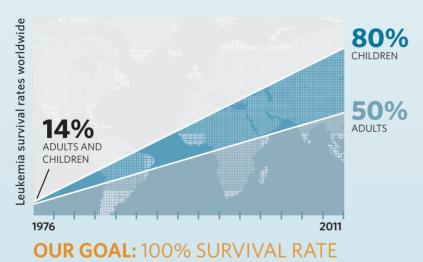
CITY OF HOPE TAKES AIM

Seeing a severe need for improvements, scientists began using a revolutionary and highly experimental new process to replace cancerous bone marrow with healthy marrow from a donor.

City of Hope recognized the potential of bone marrow transplantation, or BMT, to cure deadly blood cancers and launched its own program in 1976 — one of the first six in the world. Six leukemia patients underwent marrow transplants that year, helping to launch what would become one of the most successful BMT programs in the world.

Making an Impact Throughout the World

Advances have helped dramatically improve survival, too. Overall rates for U.S. leukemia patients are above 50 percent. For children, survival rates now top 80 percent for some forms of the disease.



APPROACHING LEUKEMIA FROM ALL ANGLES



City of Hope scientists are gaining crucial insight into the stem cells that give rise to leukemia. Their goal: Find new therapies that can eliminate these leukemia stem cells and abolish the disease completely.



City of Hope researchers are studying specially designed proteins called monoclonal antibodies to bombard leukemia cells with lethal molecules while leaving healthy tissues untouched.



Immune system cells called T cells guard against disease; they can detect invaders such as bacteria and destroy them. City of Hope scientists are working to program T cells to recognize leukemia cells as foreign and wipe them out.

Better Treatments to More People Now 600+

More than 35 years and 12,000 transplant procedures later, the BMT Program has grown. It now performs about 600 transplants each year.

2013

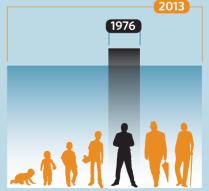
BMTs at City of Hope

1976

12,000+

Total BMTs performed

City of Hope's program treats patients that previously did not qualify for the procedure including the very old (nearly 80 years old), the very young (less than 1 year old) and those previously thought too frail to withstand treatment.



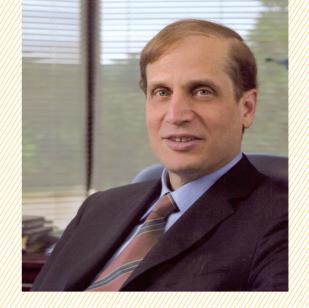
Age of patients eligible for BMT

CITY OF HOPE Q&A

Norman C. Payson, M.D.

NEW BOARD CHAIR COMMITTED TO GUIDING CITY OF HOPE INTO

New Era of Health Care



BY/FR/AN/R/ZZ/

oted business leader and physician Norman C. Payson, M.D., was selected as the new chair of the City of Hope board of directors. A longtime supporter, Payson has chaired several committees and continues to chair the City of Hope Medical Foundation board of directors. With his wife, Melinda Payson, he helped establish a professorship of medicine held by Alexandra Levine, M.D., M.A.C.P., graduate fellowships at the Irell & Manella Graduate School of Biological Sciences and the school's Graduate Studies Center.

Payson shares his perspectives on City of Hope's next chapter.

CN: You have had many transformative roles in your career, how will those experiences help you guide
City of Hope into its second century?

NP: I have had experiences dealing with the unexpected and in volatile situations similar to what we're facing in health care today. In much of my career, I've learned to live with the uncertain and to leverage it.

While City of Hope is performing excellently and is highly stable, the health care environment today is the most unpredictable it has been in the last 40 years. The dramatic change in our demographics and unprecedented developments in science and technology further complicate our society's challenges in affordability and equitability for people obtaining health care. The way health care is organized with networks of hospitals and physicians and the relationships between them is subject to significant change. Also, health care financing will likely dramatically change due to public policy, such as the Affordable Care Act, and other policy uncertainties in health care insurance. It's an exciting time – and it's filled with opportunity.

CN: With tremendous changes underway in health care, how do you think City of Hope will fare?

NP: I believe City of Hope will thrive because of the focus and commitment we have for our patients and in the discovery of new treatments. We have outstanding clinical care, a top notch team of scientists, physicians and nurses, and an exceptional management team to lead them. We are also financially sound. Because of our fairly unique model, we can be creative and flexible while adjusting to the changing environment. We have to stay very nimble to stay on top of our field. We can — and should — play a leadership role in this era of change.

CN: How is City of Hope different from other places — other cancer centers?

NP: Beyond the scientific strength and patient care, it's the culture at City of Hope that stands apart. You can feel it. It permeates the place. It's about the love of people and caring for the most vulnerable. Everyone — no matter what their role — has compassion and a fierce commitment to make the diseases we tackle a thing of the past.

CN: How has City of Hope changed since you were first introduced to the institution?

NP: It's grown enormously in the last decade and continues to prosper through its excellence and sharp focus. We are now providing care for many more patients with more clinicians and more hospital capacity and have more research activities. Our scientific discovery has become well accepted and we have been granted numerous patents for those discoveries. City of Hope's unique model of translational research is pretty revolutionary.

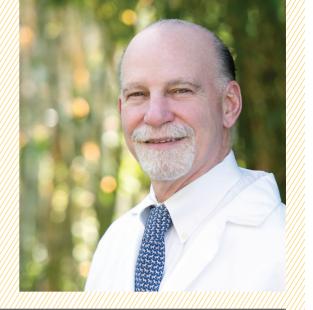
CN: Why have you supported City of Hope for so many years?

NP: I believe so strongly in City of Hope's mission and its people — the leadership, the scientists, physicians and nurses and of course the patients. Because of what the institution stands for and the confidence I have in the team, I've always wanted to do all I could for City of Hope. I wanted to help its cause, help take it into this next chapter. This new role gives me the opportunity to make an impact and I am grateful for it. CN

Steven T. Rosen, M.D.

FIRST PROVOST AND CHIEF SCIENTIFIC OFFICER
TO SET SCIENTIFIC DIRECTION OF CITY OF HOPE

Accelerating the Pace of Discovery



BY FRANKIZZ

Steven T. Rosen, M.D., brings more than two decades of experience and an impressive track record from the Robert H. Lurie Comprehensive Cancer Center at Northwestern University. He assumes his new role at City of Hope as the institution embarks on a new era of strategic growth.

Rosen talks about the efforts he will lead to shape the research and educational vision of the institution.

CN: The Provost/Chief Scientific Officer position is new to City of Hope. What will be your role?

SR: In this new role, I oversee the comprehensive cancer center, Beckman Research Institute of City of Hope and the Irell & Manella Graduate School of Biological Sciences. It's an exciting role. I will work closely and collaboratively with the scientists, clinicians and administrative leaders to help drive City of Hope's mission.

From my vantage point, I'll have a broad perspective of all the scientific, medical and educational aspects of City of Hope and be able to coordinate the efforts. Our ultimate goal is discovery and excellence. I'm charged with ensuring there's continuity as we translate basic science into treatments.

CN: What do you see as your priorities in your new role?

SR: Our priority has always been to foster investigations that lead to advancements that benefit humanity. Every drug — every treatment — we use today started with an experiment. There is a great history and a strong foundation for discovery here and I

City of Hope is one of the great treasures in American medicine, with some of the most important discoveries of the last decades coming from its investigators — both in terms of scientific observations as well as clinical advances."

am excited to build on it. My priorities are to advance research — to impact as many people as we can and to change the face of the diseases we are working on for future generations.

CN: You have advised many cancer centers. What sets City of Hope apart?

SR: Many institutions have talented investigators, but there are fewer layers here. We can be more creative and respond more quickly to opportunities. We have more resources to advance the mission. People here have a passion about being part of the solution — about being part of the cure, regardless of their role. There's a real culture of optimism and an innate desire to make an impact. I've seen it

in individuals before, but not across an entire organization at every level.

CN: There is a great deal of science underway at City of Hope. What excites you most?

SR: Not only are we on the leading edge of investigation and discovery here, but we have the core facilities and the talent and commitment to bring those advances forward. There is incredible work underway at City of Hope that can have a revolutionary effect on the way we treat patients and will have an impact on their survivorship. Every day we get a little closer — that's exciting to me.

CN: What attracted you to City of Hope?

SR: I was attracted to the historic strength of the institution — the many discoveries that have stemmed from this place. I was also inspired by the talent that is here and the commitment that there is to be at the forefront and lead the field. City of Hope may be small in comparison to other institutions, but it has the ability to make a national and global impact. We've done it before and it's just a matter of time before we do it again. CN

Yuman Fong, M.D.

NEW SURGERY CHAIR DEDICATED TO

Developing Better Cancer Treatment



BXKIMPROESCHOLDT

ity of Hope's new chair of the Department of Surgery is esteemed pancreatic and hepatobiliary surgeon, researcher and author Yuman Fong, M.D. Fong has pioneered and enhanced many surgical therapies now widely used around the world to treat cancers of the liver, bile duct, gallbladder and pancreas. He also coordinates and participates in many studies aimed at understanding, preventing and treating these cancers.

Here, Fong discusses how research plays a key role in developing new and improved cancer therapies.

CN: What are your primary areas of research?

YF: I concentrate on designing viral vectors to destroy cancer cells through gene therapy, surgical technology and biological imaging. All viruses attack their hosts and introduce their own genetic material into the host cell. The host then produces additional copies of the virus, leading to more and more cells becoming infected.

We genetically modify viruses to attack and destroy cancer cells, while sparing normal tissues. The viruses only replicate in cancer cells, ultimately destroying them.

In the area of surgical technology, I focus on developing new tools for the operating room. My motto is "less invasive, more cures." Using robotics and other minimally invasive surgical devices, we can make the therapies much simpler.

In biological imaging, we look for ways to see cancer better during surgery using fluorescence, radiology, and even radioisotopelabeled antibodies.

CN: How have research and clinical practice changed during your career?

YF: When I started in medical school. most of the cancers I treated were terminal. Now, we cure more than 50 percent of the patients with these cancers we take to surgery. They live to an old age, and that's gratifying.

CN: What persuaded you to come to City of Hope?

YF: I've been offered chairmanships in the past, but City of Hope's mission appealed to me. Here, it's about dealing with all aspects of cancer, from understanding the cancer's origin to developing new therapies and testing them in clinical trials to delivering superior, compassionate patient care to providing support and education to patients and their families. This is what I do. This is who I am.

City of Hope feels like family. When you step foot on the campus, you feel welcome, as if you belong here. From the volunteers who greet you in the hallways, to the personnel who check you in at the clinics, to the clinical and other support staff, everyone I've ever met at City of Hope has made me feel like I'm part of one big family. To me, that is very important. CN

Now, we cure more than 50 percent of the patients with these cancers we take to surgery. They live to an old age, and that's gratifying."

Dawn Gross, M.D., Ph.D.

CHAIR OF DEPARTMENT OF SUPPORTIVE CARE MEDICINE KNOWS THAT BETTER QUALITY OF LIFE REQUIRES

More Than Just Cancer Treatment



BYKIKIPROESCHOLDT

o put it simply, cancer can be overwhelming. Patients normally experience burdensome physical symptoms and, often, psychological distress. Dealing with these symptoms can require specialized care. At City of Hope, this type of special care is found in the Department of Supportive Care Medicine. Dawn Gross, M.D., Ph.D., Arthur M. Coppola Family Chair in Supportive Care Medicine explains that the department provides patients with the full range of providers needed to deliver comprehensive support to patients and families experiencing a life-altering illness through the Sheri & Les Biller Patient and Family Resource Center.

"It's not just about a medical care; it's about caring for the total body, mind and spirit," says Gross. "Including supportive care into a patient's ongoing cancer treatment provides not only a better quality of life, but also a happier one."

Here, Gross answers common questions about these beneficial, yet little-understood, services.

CN: What is supportive care and palliative medicine?

DG: Supportive medicine — another name for palliative care — is aimed at providing comfort, rather than aggressive treatment to support patients and their families experiencing a life-altering illness. Supportive medicine is delivered simultaneously with other forms of medical care. We focus on alleviating all forms of suffering, including physical, mental and spiritual distress. This allows us to explore and deliver care that meets the patient's and family's goals.

CN: Who provides supportive medicine?

DG: Supportive medicine at City of Hope is delivered by a diverse interdisciplinary

team of health care professionals that typically includes a physician or advanced practice nurse who specializes in palliative medicine, social workers and chaplains. The team may also include child life specialists, health educators, psychologists, psychiatrists, patient navigators, volunteers and others. It truly takes a village to care of someone with a life-altering illness. A team approach allows us to develop creative programs and tools, and to conduct research documenting the difference we make in quality of life.

CN: What's on your wish list for palliative care in the next five to 10 years?

DG: I would love to be put out of a job knowing that palliative care principles and skills are being taught in all stages of medical training, so that every health care provider is comfortable referring patients for palliative and hospice services. To that end, our nursing and nursing research colleagues are in the process of launching a new teaching program for nurses at the bedside who find themselves faced with caring for patients at the end-of-life.

CN: What inspires you to do the work you do?

DG: I became a hospice physician after my father passed away in 2006. My vision is to change the landscape of end-of-life care conversations, so that they open the door to having wishes come true. One of my favorite tools for facilitating this conversation is called GoWish™, an easy game that uses cards to help you talk about what is most important to you. We should not assume we know what a loved one wants or values. An end-of-life discussion about the things that are most important is the most amazing conversation you will ever have, and I get to have these conversations every day!

To learn more about supportive care and palliative medicine at City of Hope, please visit cityofhope.org/supportive-care. CN

CITYROUNDS



City of Hope Expands in Antelope Valley, Arcadia

BY H. CHUNG SO

As part of an ongoing effort to increase access to quality of care, City of Hope recently opened a brandnew clinic in Antelope Valley and is providing radiation oncology services at Methodist Hospital of Southern California in Arcadia, California.

"City of Hope is proud to provide access to our uniquely compassionate, patient-centered care to residents of the Antelope Valley and Arcadia communities," said Robert Stone, City of Hope's president and chief executive officer. "With more people than ever impacted by cancer, more patients and their families will benefit from receiving high-quality treatment close to home."

City of Hope has long had a presence in Antelope Valley, but the new 56,195-square-foot, two-story facility — built in partnership with Antelope Valley Hospital — dramatically expands the availability of a complete range of diagnostic and treatment services, including screening, surgery, radiation and chemotherapy. The building also houses office space for physicians and support staff, a conference center and a 172-seat auditorium.

City of Hope | Antelope Valley officially opened on Nov. 18, 2013, with a grand opening ceremony on Nov. 21 that was attended by more than 250 people, including local officials from the Antelope Valley community and executives from Antelope Valley Hospital.

City of Hope has owned and operated Methodist Hospital's radiation oncology service since Jan. 1, 2014. Radiation therapy is overseen by Jeffrey Y.C. Wong, M.D., chair of radiation oncology at City of Hope, and provided by board-certified specialists who work closely with Methodist physicians and other local physicians to provide quality cancer care to patients in the Arcadia area.

"We are excited to be able to partner with Antelope Valley and Methodist hospitals to provide knowledge and skills to help cancer patients in those areas. Instead of having to commute to and from our Duarte campus, patients can now receive our comprehensive services and leading-edge treatment approaches in their own community," said Vijay Trisal, M.D., medical director of community practices for the City of Hope Medical Foundation.

The Stephensons Pay It Forward



Emmet, Toni and Tessa Stephenson

BY HOLLY STRAWBRIDGE

The diagnosis of lymphoma was a life-changing experience for Toni Stephenson, her husband, Emmet, and their daughter, Tessa Stephenson Brand. Now, their \$10 million gift to City of Hope will change the lives of many others. The money will be used to create the Toni Stephenson Lymphoma Center. This comprehensive Center of Excellence will align clinical care and research to optimize progress in the treatment of blood cancers. It will also be a state-of-the-art facility for providing bone marrow transplantation for multiple myeloma in an outpatient setting.

"We wanted our gift to add to the prestige and capability that City of Hope already has, focus attention on something it already does well and enable it to bring in more experts. The goal is to accelerate the rate of gain in knowledge and rapidity of research in order to get on top of this cancer and beat it sooner rather than later," Emmet explains.

"We're not medical people, but we can help support them and, perhaps, inspire others to donate," says Toni, who is now in remission.

"That's the whole goal here," adds Emmet. "Somebody did it for us years ago by tackling diseases that are now nonexistent in the U.S. Maybe we can do that for the next generation."

Wishes Make Dreams Come True

ELEVEN STORIES OF HOPE AND DREAMS FLOATED DOWN COLORADO BOULEVARD ON NEW YEAR'S DAY

BY DOMINIQUE GRIGNETTI

City of Hope began 2014 on a high note at the 120th Tournament of Roses Parade. The New Year was only eight hours old when the country witnessed the emotional meeting between Hodgkin lymphoma survivor Ben Teller, 24, and Nancy Haag, the bone marrow donor who helped save his life. Stephen J. Forman, M.D., Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation and Jessica Holmes of KTLA helped facilitate the surprise meeting that took place on live television in front of City of Hope's float.

But that was only one miracle of 11 that day. Ten other cancer survivors, treated at City of Hope also rode the float, which was appropriately named, "Turning Hope & Dreams into Reality."

The float, which was built by Phoenix Decorating Company, was designed to resemble the wishing trees at the entrance to City of Hope's campus and the very place where patients' and families' wishes hang. The replica wishing trees topping the float were adorned with 1,000 handwritten wishes, while close to 12,000 colorful roses and gerberas covered the base of the float.

The emotional ride down Colorado Boulevard in Pasadena,



Eleven patients riding the float represented the many stories of hope and dreams saved. Those who helped make it possible, family members, scientists, physicians, nurses and City of Hope staff, walked alongside it.

California, on New Year's Day was fueled by stories about the patients who rode the float and the efforts of families, doctors, nurses, staff and supporters. Approximately 90 million viewers worldwide watched the coverage on KTLA, NBC, HGTV and local stations.

The float was funded in part by Sodexo, The Georgia B. Ridder Foundation and the generosity of donors and volunteers whose wishes rode the float with our patients. A special thank you to all our supporters as we look forward to next year's parade.

USHERING IN A NEW CENTURY OF INNOVATION

THE POWER OF HOPE BROUGHT SUPPORTERS TO THE CENTER OF CITY OF HOPE'S SCIENCE AND PATIENT CARE, THE HEART OF THE INSTITUTION

BY FRAN RIZZI

On Jan. 11, City of Hope celebrated 100 years of hope with a black-tie gala on the medical center campus. The evening, hosted by Cindy Crawford, celebrated the culmination of City of Hope's centennial year — and the successful completion of its ambitious \$1 billion Power of Hope fundraising campaign. The celebration comes as the institution ushers in its second century of innovative research and renowned patient care.

"If you seek groundbreaking science, you will find it at City of Hope. If you seek translational research to bridge the lab and the clinic, you'll find it here. And if you seek compassionate

care, you'll find it here for the last 100 years and the next 100 years," noted Robert Stone, president and chief executive officer of City of Hope, as he recognized the audience's contributions to the successful campaign.

Attended by City of Hope supporters, philanthropists, scientists and physicians, the gala featured a special tribute to outgoing Chief Executive Officer Michael A. Friedman. With Norman Payson, chair of the City of Hope board of directors, and Tony Markel, Power of Hope Campaign chair, Stand Up To Cancer Co-founder Sherry Lansing led the tribute that honored Friedman for his years of dedication. American



Lindy Crawford at the Centennial Gala.

Idol alum, Jessica Sanchez joined the celebration, while guests enjoyed performances by Shades of Music, an a cappella group that led guests into the dinner reception and the LA Opera.

HOW CAN I HELP my loved one?

Did you know ...

- Each month our patients require over 3,000 blood components.
- If your blood type is compatible with the patient, your donation can be given directly to your loved one. If your type does not match, your blood will help replace the blood your loved one used.
- In most circumstances, platelet donations do not need to be the same blood type. Therefore, most friends and family can give directly to their loved one.
- It takes about an hour to donate blood and about two hours to donate platelets.

You can schedule an appointment online at www.iDonateBlood4Hope.org. For further information about the program, contact Jennifer Zuniga at 626-256-4673, ext. 69038.



RESEARCH · TREATMENT · CURES

ADDRESSING OUR OWN

Community's Health Needs

BY FRAN RIZZI

STEP OUTSIDE THE DOORS OF CITY OF HOPE AND ENTER THE REALITY OF HEALTH INEQUALITIES. Some area residents have a disproportionate amount of disease. Others have limited or no health care, or have trouble accessing quality care due to language, educational or cultural barriers.

ity of Hope is working to change these circumstances by implementing specific programs that engage the community in eliminating barriers identified by local residents.

OUR TOWNS, OUR PROBLEMS

In order to fully understand the health needs of our local service area, City of Hope conducted a community health needs assessment during the summer of 2013. Through the data-gathering process, City of Hope identified five areas of community concern relating to cancer and diabetes. During December 2013, local participants in the Foothill Fitness Challenge were asked to prioritize these needs. The five focus areas they identified are:

- Cancer prevention and early detection for lung, colorectal, prostate and women's cancers
- Healthy living, and specifically how nutrition and physical activity impact cancer and diabetes
- 3 Culturally relevant community partnerships that help overcome barriers to care
- Smoking cessation and its impact on lung cancer
- Research alliances

Within these focus areas, the community stakeholders identified specific issues they felt were important to pursue over the next three years:

- Reduction of obesity
- Increase in physical activity
- Culturally competent and culturally specific health education
- Culturally sensitive support
- Assistance in navigating health care system

- Cancer advocacy training
- Increase in community partnerships
- Barriers that prevent vulnerable populations from accessing services, including poverty, lack of transportation and cultural/linguistic issues

MAKING PROGRESS

From this point forward, projects will be broken down into measurable components and shared with partners in City of Hope's service area, who will evaluate each project for its ability to impact at least one outcome in the five priority areas. Most of these priority areas dovetail with Healthy People 2020: HealthyPeople.gov.

A Community Benefit Oversight Committee has been formed and is charged with ensuring that City of Hope delivers programs that are guided by community health needs assessment results, and that outcomes are reported transparently.

"The designation of community benefit programs as an institutional priority increases the sense of urgency in creating strong, useful programs that meet the needs of the vulnerable population in our service area," says Nancy Clifton-Hawkins, M.P.H., M.C.H.E.S., a senior health education specialist in the Department of Supportive Care Medicine.

The implementation strategy will begin by viewing existing and future programs through a new lens that places vulnerable populations in the forefront of the planning process. "The prioritized implementation plan will allow for a more strategic focus on areas critical to our service area, while creating pathways for health and healing," she says. CN



FOR MORE INFORMATION and to learn more about community

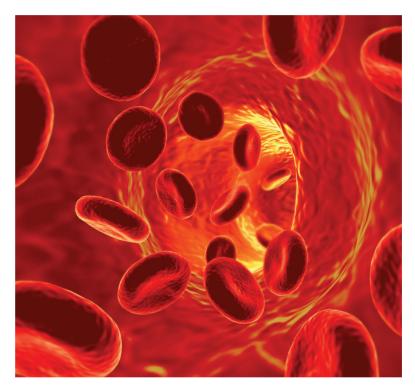
about community benefits at City of Hope, contact Nancy Clifton-Hawkins at nchawkins@coh.org.



UNRAVELING THE MYSTERIES OF LYMPHOMA

BY RACHEL J. HALL





n cancer research, there are many things we don't know. For example, how cancer develops, and how it can evade our body's natural tendencies to kill an invader.

Finding the answers to these questions will allow us to make great strides in our understanding of one disease, even as we discover new genes with mysterious actions and effects.

T-cell lymphoma is one cancer that continues to elude our understanding. Affecting just 10 percent of patients diagnosed with lymphoma, this hematological cancer is actually comprised of different types of cancers that produce cancerous T cells. Because of this diversity, there is no "one size fits all" therapy.

In an effort to defeat this difficult cancer, City of Hope has partnered with Toni, Tessa and Emmet Stephenson Jr., to establish the Toni Stephenson Lymphoma Center at City of Hope, a new initiative that builds on our proven track record of applied scientific achievement to develop more effective and curative treatments. The goals of this far-reaching program span from labs to clinics and include identifying new molecular targets for therapy and developing new immunotherapies for patients battling different forms of T-cell lymphoma.

LYMPHOMA LEADERSHIP

John Chan, M.D., professor of pathology, is spearheading the effort to meet the goals of this new program. Recently arrived from the University of Nebraska, Chan is nationally recognized for his work deciphering the biology of lymphoma and factors that cause lymphomas to develop. As a hematopathologist, Chan identifies and examines the genetic mechanisms underlying the different subtypes of lymphoma, including T-cell lymphoma.

"We have so much to learn about this disease. We know very little about the abnormalities associated with T-cell lymphoma. In order to develop the most effective therapy, you need to know what these abnormalities are and what

causes them, so you can go about finding the best ways to target them," he says.



JOHN CHAN

By utilizing genome-sequencing technology, Chan and his team plan to examine all of our 20,000 genes in order to identify abnormalities that will elucidate how cancer develops and grows.

EXPANDING THE SEARCH

One vital step — and potential hurdle — involves finding a sufficient number of samples from patients diagnosed with this cancer to analyze.

To meet this challenge, Chan is collaborating with Stephen Forman, M.D., Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation, as well as other physicians at City of Hope and cancer centers across the nation to form a consortium similar to the Lymphoma & Leukemia Molecular Profiling Project (LLMPP). The LLMPP, which was established with National Cancer Institute funding, comprises a group of international lymphoma researchers who pool their resources and talent to advance understanding of the molecular pathogenesis of lymphoma. By working together, they have many more samples that any single institution could have acquired alone. This type of collaboration has resulted in better diagnosis and prognostication, and a better understanding of the biology of the disease based on the molecular characterization of the cancer.

Ultimately, Chan's research, combined with other vital studies in the lymphoma program, will advance our understanding of lymphoma and result in clinical trials to test new, potentially more effective and targeted treatments.

"It is an exciting time for lymphoma research, because we have technology that allows us to study global changes in the genome of lymphoma cells. We can now analyze abnormalities in a disease about which very little is known," says Chan.

With City of Hope's culture of multidisciplinary collaboration, Chan's research can quickly be translated into promising therapeutics that attack the cancer and spare healthy cells — ultimately improving the quality of life and saving the lives of patients fighting lymphoma. CN



STEPHEN FORMAN



CHRISTINE BROWN

LYMPHOMA RESEARCH AND CARE: NEW TREATMENTS START WITH CLINICAL TRIALS

Stephen Forman, M.D., Francis & Kathleen McNamara Distinguished Chair in Hematology and Hematopoietic Cell Transplantation, and Christine Brown, Ph.D., associate director of the T-cell Immunotherapy Laboratory, have opened an Food and Drug Administration (FDA)-approved clinical trial of an investigational drug for patients with T-cell lymphoma who are undergoing transplantation for recurrent disease, to reduce the chance of relapse.

Plans are now underway to extend this promising new therapy to treat patients with B-cell lymphoma who are not undergoing transplantation. That trial is expected to begin this year.

Amrita Y. Krishnan, M.D., director, Multiple Myeloma Program, is leading an international clinical trial to test whether Zevalin radioimmunotherapy given prior to high-dose chemotherapy plus autologous stem cell transplantation will reduce the rate of disease recurrence and improve overall and disease-free survival

in patients with aggressive lymphoma.

AMRITA KRISHNAN







LESLIE POP<u>PLEWELL</u>



ROBERT CHEN

- City of Hope was the first institution to show that hematopoietic stem cell transplantation could cure patients of lymphoma who suffered from HIV infection. This has changed the standard of care for patients in the U.S. Joseph Alvarnas, M.D., associate clinical professor of hematology and hematopoietic cell transplantation is leading a national trial in the treatment of patients with lymphoma and HIV infection. He is also leading a study aimed at determining whether allogeneic (donor) transplants will cure both leukemia and HIV infection.
- Leslie Popplewell, M.D., associate clinical professor, and Robert Chen, M.D., assistant professor, both of the Department of Hematology & Hematopoietic Cell Transplantation, continue to advance clinical trials of new agents that may be more effective and less toxic in treating patients with hematologic cancers. Chen led a national study of the drug brentuximab in patients with relapsed Hodgkin disease, in whom the drug produced a high rate of response. The drug was subsequently approved by the FDA. Current research is directed at assessing the efficacy of brentuximab in preparing patients for transplant, as well as in preventing posttransplant relapse.



Sumanta Pal, Jeremy Jones and Marcin Kortylewski in the lab.

Turning the Tide IN PROSTATE CANCER CARE

BY BETSY STEWART

Creativity, precision and collaboration — scientists in search for better ways to target cancer and improve outcomes.

reatment for prostate cancer has involved targeting one pesky protein: the androgen receptor. This protein drives the growth of nearly all prostate cancers. A straightforward if physically arduous approach to inhibiting this protein involves eliminating testosterone.

All Food and Drug Administration-approved drugs interfere with testosterone's ability to activate the androgen receptor. These drugs can temporarily control the growth of the cancer, but mutations that develop in the androgen receptor eventually create resistance, enabling the androgen receptor to be active, even when testosterone is absent.

Jeremy Jones, Ph.D., assistant professor of molecular pharmacology, has devoted his career to understanding how to regulate the androgen receptor to halt prostate cancer growth. His recent efforts have been directed toward creating a model that will enable him to better understand the points of activation. He hopes this will lead to an effective treatment other than eliminating testosterone. Using this model, Jones and his lab have tested the effectiveness of thousands of compounds.

ONE COMPOUND STANDS OUT

In his research, Jones discovered that a drug called pyrvinium inhibits a part of the receptor that is essential for its function, but operates independently of testosterone, making resistance by mutation unlikely. This drug, used for decades to treat pinworm infections, inhibits DNA-binding in the androgen receptor, preventing the protein from transcribing genes to create new cells. In cell and mouse studies, pyrvinium stopped the growth of castration-resistant prostate cancer growth.

Jones is hopeful about the increased ease of this therapy for men. "This drug is unusual in that it works better in prostate cells than in other cells. So, theoretically, it should have fewer androgen receptor-mediated side effects," he says.

This means it should have less effect — or none — on brain and nervous cells.

ADVANCEMENTS IN UROLOGIC ONCOLOGY AT CITY OF HOPE

- Prostate cancer first spreads through lymphatic channels to lymph nodes, so the nodes are routinely removed and examined during prostate cancer surgery. However, it is difficult to identify which nodes might actually contain prostate cancer, so most lymph nodes removed do not harbor any cancer cells. Bertram Yuh, M.D., assistant clinical professor of urology and urologic oncology, is studying how indocyanine green dye and near-infrared imaging can be used to highlight which lymphatic channels to target during surgery. Yuh is running a pilot study to evaluate how this new technique helps improve outcomes.
- Jones is working with Cy Stein, M.D., Ph.D., Arthur & Rosalie Kaplan Chair of Medical Oncology, to treat prostate cancer that is resistant to hormone therapy. They have designed a compound called COH11023, which inhibits the production of testosterone, prevents the hormone from binding to the androgen receptor and breaks down the androgen receptor to rid cancer cells of the protein. COH11023 may prevent or delay cancer resistance, and Jones and Stein are developing a compound for testing in mouse models and, eventually in human clinical trials.
- Sumanta Pal, M.D., assistant professor of medical oncology and co-director, Kidney Cancer Program, is advancing research aimed at fighting kidney cancer. In one project, he and Jones are using next-generation DNA sequencing technology to obtain the most advanced genetic information about sarcomatoid tumors, a rare and challenging type of kidney cancer. Their goal is to identify targets for treatment. Pal is also studying compounds that target a molecule called PD-1, which stifles the immune system's response against cancer. He is leading a clinical trial studying the effectiveness of a drug combination in blocking PD-1 in patients with advanced kidney cancer.
- One of the greatest challenges in cancer treatment is killing cancer cells without harming normal cells. Jacob Berlin, Ph.D., associate professor of molecular medicine, and Karen Aboody, M.D., professor of neurosciences and neurosurgery, have developed a promising method that uses tiny, nontoxic gold particles called nanorods. These particles are enclosed in neural stem cells, which deliver them to tumor sites. When near-infrared light is directed to the tumor area, the gold particles heat up and destroy surrounding cancer cells, while sparing healthy tissues. The researchers plan to test this treatment in mouse models of bladder cancer.

Jones is now addressing challenges to using the compound in men with prostate cancer. The small molecule is insoluble and not easily absorbed when taken orally, so he is collaborating with the Synthetic Chemistry Core at City of Hope to improve the drug-like properties of this molecule and to test it in cells and against prostate cancer in mouse models. This requires developing a potent formula that can be absorbed in the digestive system and has the

necessary solubility, stability, toxicity and other properties to advance to clinical trials within three years.

"This is the translational aspect of medicine that many people don't know about. It takes a lot of chemistry to get a compound from the bench to the point we can use it in humans," says Jones. "The androgen receptor drives this cancer, and we have never been able to fully shut it down. I'm hoping pyrvinium will be the answer to that challenge."

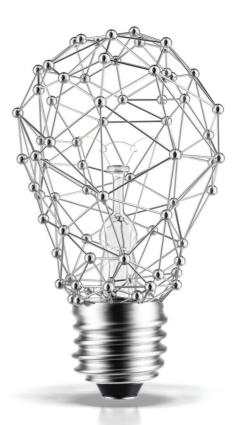
NEW AGENTS HOLD PROMISE FOR CURING ADVANCED PROSTATE CANCER

Men with distant prostate cancer metastases have a five-year survival rate of 28 percent. Researchers plan to improve those odds by using two novel agents developed at City of Hope to attack cancerous cells with the patient's own immune system. Thanks to a \$1 million Movember-Prostate Cancer Foundation Challenge Award, preclinical progress can continue for the next two years, with human clinical trials beginning in early 2016.

One unique agent, designed by Marcin Kortylewski, Ph.D., assistant professor, cancer immunotherapeutics and tumor immunology, inhibits the cancer's ability to grow and dodge the immune system, while bolstering the patient's immunity.

Christine Brown, Ph.D.,
City of Hope's group leader
in T-cell therapy preclinical
research, and Saul Priceman,
Ph.D., assistant research
professor, are engineering T cells
to attack prostate cancer cells.

Ultimately, combining the two agents will mount a three-way strike designed to halt the tumor's spread, break down the cancer's anti-immunity barriers and direct an immunological assault against the cancerous cells throughout the body. If successful, the approach will create a powerful immune response against prostate cancer, with the potential to better treat and possibly cure patients with advanced-stage prostate cancer. CN



Designer Genes:

TAILORING CANCER TREATMENT TO THE INDIVIDUAL

TARGETING
CANCER
TREATMENT,
EXPLORING
THE GENES
THAT DRIVE
THEM AND
FIGURING OUT
WHAT OTHER
CANCERS HAVE
IN COMMON

BY ROBERTA NICHOLS

his year, an estimated 96,830 people in the United States will be diagnosed with colon cancer and 40,000 with rectal cancer.
When these cancers metastasize — as

they often do — patients may be left with no medical options to continue fighting it.

City of Hope researchers hope to rewrite that script.

The researchers are documenting the molecular profiles of various colorectal cancer subtypes and cataloguing them, in hopes the information will lead to new therapies.

"We want to develop preclinical models, so we can better test drugs and create personalized treatment," said Marwan Fakih, M.D., director, Gastrointestinal Cancer Program.

INDIVIDUALIZING TREATMENT

At the time a colorectal tumor is removed, tiny pieces of tissue are taken and, with the patient's permission, implanted into laboratory mice. These are called xenografts. Colorectal tumors grow easily in mice and retain the same characteristics as in the patient.



MARWAN FAKIH

The information yielded through the mouse-grown tumor is enormously helpful to researchers.

"Because the tumors are molecularly

characterized, we know what genes are involved or driving the cancer," said Fakih. "Eventually, we will have a library of different xenographs with molecular signatures. When we identify certain

Knowing what doesn't work is as important as knowing what does.

drugs that attack a specific pathway, we can look at their effectiveness in blocking those pathways," he explained.

Once a drug or combination of drugs is found to work on a specific molecular pathway in the mouse-grown tumor, the treatment may be offered to patients whose tumors have the same molecular signature.

City of Hope researchers plan to use this model to test drugs that inhibit mitogen-activated protein kinase enzymes, or MEK. "We're trying to figure out how to use MEK inhibitors during chemotherapy, and what particular molecular profiles benefit the most," said Fakih.

As soon as these questions are answered, the project will be incorporated into a phase I clinical trial for patients with refractory metastatic colorectal cancer. As a phase I trial, the researchers will evaluate whether the therapy is safe, and whether combining MEK inhibitors with the chemotherapy agent oxaliplatin improves molecular activity. Enrollment is expected to begin by early summer.

TARGETING MULTIPLE CANCERS

Molecular pathologists at City of Hope have been proactive in searching for a variety of genetic mutations found in particularly aggressive and deadly types of colorectal cancer. They have developed a test for BRAF (as well as KRAS and NRAS) — mutations affecting 10 percent of patients with colorectal cancer.

Using this test, City of Hope researchers are currently conducting a phase I trial testing an molecular inhibitor in patients with the BRAF mutation. A phase II clinical trial for colorectal cancer patients will begin soon, Fakih said.

An important part of scientific success is realizing what treatments will not

work. Crossing ineffective treatments off the list spares patients from undergoing therapies that will not provide benefit.

For example, researchers have long known that colorectal cancer patients with the KRAS mutation do not benefit from certain types of supplemental therapy, like radiation or drug therapy. Today, there is growing consensus that patients with extended KRAS as well as NRAS mutations will not benefit either. "We are adding another 10 percent of people we won't treat with toxic substances that won't help them," said Fakih, sparing them the toxic effects.

The year, an estimated 96,830 people in the United States will be diagnosed with colon cancer and 40,000 with rectal cancer.

SUCCESS IN ONE CANCER BENEFITS ANOTHER

At City of Hope, research is underway to help patients with gastric cancer, an often deadly malignancy affecting nearly 1 million people worldwide.

A few years ago Herceptin, a drug given to HER2-positive patients with breast cancer, was shown to be effective in treating patients with gastric cancer. At least 25 percent of gastric cancer patients — maybe more — have the HER2 protein and may respond to Herceptin treatment.

HER2, or human epidermal growth factor receptor 2, stimulates the growth of cancer cells.

Two tests are available to identify HER2 positivity. Unfortunately, neither is very precise, said Joseph Kim, M.D., head, upper gastrointestinal surgery, and

associate professor of Surgery.



Using technology developed at City of Hope to detect patients who are HER2-positive for

breast cancer, researchers plan to launch a pilot study this year to detect HER2 positivity in gastric cancer patients.

"This will change the way we diagnose and treat gastric cancer," said Dr. Kim.

The Cu-DOTA-trastuzumab-PET test is a non-invasive radiographic "biopsy" that assesses HER2 expression in patients with gastric cancer. "The test is expected to be more accurate than a standard biopsy and assessment in determining gastric cancer patient eligibility for anti-HER2 therapy," said Dr. Kim.

This test was created by City of Hope investigators Andrew Raubitschek, M.D., chief of radioimmunotherapy, Joanne Mortimer, M.D., director, Women's Cancers Program, Larry Couture, Ph.D., senior vice president of the Sylvia R. & Isador A. Deutch Center for Applied Technology Development, and John Shively, Ph.D., chair and professor of immunology, and initially used to determine which breast cancer patients were HER2 positive and might benefit from anti-HER2 therapy.

If the pilot study on gastric cancer patients proves successful, it is expected to be tested in a large, multicenter trial.

"This is something that potentially may save people from undergoing invasive biopsies," he said. (N



hat's the most exciting new tool for fighting lung cancer? The patient's own immune system! Drugs that give the immune system the boost it needs to attack cancer are being touted as the future of lung cancer treatment. Some of these drugs are being tested at City of Hope.

Getting a patient's own immune system to attack the cancer is phenomenal for lung cancer."



"This is one of the most exciting new treatments on the horizon," said Karen Reckamp, M.D., M.S., co-director of the Lung Cancer and Thoracic Oncology Program. "Getting

a patient's own immune system to attack the cancer is phenomenal for lung cancer, which tends to be an immune-suppressing disease."

The drugs, known as PD1 or PDL-1 inhibitors, are being tested in nonsmall cell lung cancer, which accounts for 85 to 90 percent of lung cancers.

Preliminary studies of these drugs have been very promising, with higher rates of response than are often seen with chemotherapy, even in patients whose cancers have been resistant to other treatments.

City of Hope was fortunate to be selected as a site for clinical trials of these new therapies, said Marianna Koczywas, M.D., a physician in the Department of Medical Oncology & Therapeutics Research, who is leading a new study of one of these drugs.



KOCZYWAS

Lung cancer tumors have a specific protein (receptor) on their surface that tricks the immune system into believing the cancer cells are healthy cells that belong in the body. The trial drug disables this receptor,

allowing the immune system to identify the cancer and attack it.

PALLIATIVE CARE STUDY FOCUSES ON QUALITY OF LIFE WHEN LUNG CANCER STRIKES

Typical lung cancer care focuses on treating the disease, not the patient. Yet patients generally experience pain, fatigue, depression and other symptoms from chemotherapy, surgery and radiation. Symptoms that intensify as their disease progresses.

These symptoms often remain unaddressed and uncontrolled. Worse, patients may have delayed or no access to palliative care — care that focuses on their quality of life and includes pain management, and psychological and spiritual care.

City of Hope researchers are studying what early results already indicate is a better way: offering lung cancer patients comprehensive palliative care starting at the beginning of their treatment. Funded by the National Cancer Institute, the program on which their study is based is now entering its final year, but is already being considered for patients with other diseases.

"We started with the toughest cancer in some ways," said Betty Ferrell, Ph.D., R.N., director of the Division of Nursing Research and Education at City of Hope. "There are so many things that make lung cancer a real challenge. Often, patients have late-stage disease and face a poor prognosis."

The current phase of the study offers comprehensive interventions for patients and their families. Patients are assessed not only for the status of their tumor, but for many other factors affecting quality of life. These include symptoms, other conditions or

illnesses, their family situation, mental health and any major life events — such as the loss of a close family member — that may have occurred.

In weekly meetings, nurses present the patients' cases to a team that includes the patients' doctors, rehabilitation and pulmonary rehabilitation staff, social workers and others. The team focuses on four key areas: physical, psychological, social and spiritual wellbeing. From finances to family issues, pain management to nutritional needs, the team identifies areas of need for the patient and takes action to support the patient and family.

Family caregivers are coached separately in each of these four key areas, as well. Their curriculum focuses not just on taking care of their loved one, but also taking care of themselves.

"We take away the cancer cells' ability to block our immune system from recognizing and destroying them," Koczywas said.

Before receiving the new drug, patients are screened for the specific receptor that the drug targets. "About one-third of all nonsmall cell lung cancers have this receptor, so the potential to help many patients is great," Koczywas said.

Three groups of patients qualify for this clinical trial: those who are newly diagnosed with nonsmall cell lung cancer, those who have had one prior therapy for this cancer and those who have undergone multiple therapies.

Researchers are already designing other trials that combine immunotherapy drugs with chemotherapy in the hopes of creating powerful combination therapies able to obliterate the disease.

"At City of Hope, you get a team who thinks about lung cancer all day long," Reckamp emphasized. "We have many, many options and a team with the expertise to develop the best treatment plan for every one of our patients."

LUNG CANCER SCREENING NOW RECOMMENDED

■ More than 160,000 people die from lung cancer each year. Screening could put a dent in that number.

The U.S. Preventive Services Task Force, a panel that determines which therapies and tests must be covered by insurers under the Affordable Care Act, adopted lung cancer screening guidelines beginning this year. The task force recommends that current and former smokers between the ages of 55 and 80 who have smoked the equivalent of a pack of cigarettes a day for 30 years be screened with a low-dose CT scan.

City of Hope lung cancer experts agree. "Lung cancer screening saves lives, and anyone who fits the criteria should absolutely be screened," says Dan Raz, M.D., co-director of the Lung Cancer and Thoracic Oncology Program at City of Hope. "Lung cancer is aggressive, and by the time symptoms appear, it is often no longer curable," he says.

Without screening, only about 15 percent of lung cancers are detected at an early stage. Studies predict that with screening, about 80 percent of lung cancers could be detected at Stage 1, when they're most easily treated.

City of Hope is designated as a Center of Excellence for screening by the Lung Cancer Alliance. City of Hope uses low-dose CT scans, which are more effective than chest X-rays. The medical center is staffed with an experienced multidisciplinary team that can accurately interpret the screening results and has a protocol for responding accordingly. Since about one-fourth of screenings turn up some kind of nodule, the ability to direct lung cancer patients to treatment, while avoiding unnecessary invasive tests in patients with benign lesions, is important.

"If you can catch your cancer early, you can be cured. Be proactive about protecting your health," says Dr. Raz. CN

BY NICOLE WHITE

Islets of Hope

CELL TRANSPLANTATION PROMISES TO

CURE TYPE 1 DIABETES, ELIMINATING THE NEED

FOR INSULIN AND OTHER MEDICATIONS

nless current trends reverse,
ONE IN EVERY THREE PEOPLE
IN THE UNITED STATES
WILL BE DIAGNOSED
WITH DIABETES BY THE YEAR 2050.

This makes diabetes one of the nation's most serious public health threats.

City of Hope recognizes that threat and has responded with a robust and vibrant research program. The bold plan is based on scientific inquiry attacking diabetes on multiple fronts, from unraveling the mechanisms that cause the disease to uncovering new treatments and potential cures. In fact, City of Hope is the West Coast's leading center for cell therapy for diabetes and is in the midst of a new study of a procedure with the potential to cure type 1 diabetes in patients whose disease cannot be controlled with medication: islet cell transplantation.



FOUAD KANDEEL

"Since our first islet cell transplant a decade ago, we have developed new techniques and made improvements to our protocols that we believe will make the procedure even more successful," said Fouad Kandeel, M.D., Ph.D., director of the Division of

Developmental & Translational Diabetes and Endocrine Research. "Islet cell transplantation is one avenue to a solution for patients whose diabetes has progressed to a life-threatening stage."

In type 1 diabetes, the body's immune system destroys insulin-producing beta cells that live in island-like clusters (islets) in the pancreas. The hormone insulin allows the body's cells to absorb glucose from the blood and extract energy from food. Patients with type 1 diabetes produce little to no insulin and must take insulin injections to survive.

In an islet cell transplant, cells from a donor pancreas are infused into a patient's abdomen in an hour-long procedure.

IMPROVING THE PROCEDURE

It is now possible to use biomarkers to identify the healthiest islet cells that are most likely to thrive in the recipient. Advanced imaging techniques developed by Kandeel and his colleagues allow physicians to assess the health of the cells after the transplant.

"We're using a different kind of immune suppression in a new clinical trial," said Kandeel. "We believe the longevity of the transplanted islets will be better, and the chances of rejection will be reduced."

Previous islet transplant studies have found that more than three-fourths of patients were able to discontinue insulin injections for up to 20 months. Although most resumed taking insulin within five years, their diabetes was well-controlled and their insulin doses were much lower.

City of Hope has a rich history of leadership in diabetes treatment and research beginning with its founder, Rachmiel Levine, M.D. He was the first to describe the role of insulin in regulating glucose entry into cells.

REVERSING AUTOIMMUNITY TO CURE DIABETES

BY BETSY STEWART

Defu Zeng, M.D., professor of Molecular Diabetes Research, is focused on curing type 1 diabetes by reversing the underlying condition of autoimmunity, which occurs when the immune system attacks the body instead of defending it against invaders.

Zeng's preclinical research has already demonstrated the potential of curing autoimmune-related diabetes through transplantation



DEFU ZENG

using mixed chimerism, a combination of immune cells from both host and donor. More recently, Zeng showed how

mixed chimerism was able to eliminate diseased immune cells.

This study has been submitted for publication.

In parallel research, Zeng showed that after autoimmunity was reversed through mixed chimerism, the body was able to produce mature beta cells that produce insulin. Next steps toward clinical application of this research involve animal studies and developing more effective agents to induce mixed chimerism and prepare the patient's immune system for transplant.

In related research, Zeng seeks to reverse autoimmunity in prediabetic patients in order to prevent the onset of diabetes. He recently found that the protein B7H1-Ig can help to accomplish this by driving the growth of protective Treg cells and inducing death in pathogenic Teff cells. He is now working with Arthur Riggs, Ph.D., chair of Diabetes and Metabolic Disease Research to synthetically refine this protein for treatment and test the protein's ability to prevent type 1 diabetes in mouse models.

This led to the discovery that type 2 diabetes is caused by a defect in this mechanism which is now known as insulin resistance. A City of Hope team of scientists led by Arthur Riggs, Ph.D., chair of diabetes and metabolic diseases research, also developed synthetic insulin, which continues to be used by millions of diabetic patients worldwide.

City of Hope is already at the forefront of offering advanced treatment options for diabetic patients who need it most."

advanced treatment options for diabetic patients who need it most," said Fouad Kandeel, M.D., Ph.D., director of the Division of

Developmental & Translational Diabetes and Endocrine Research. "With our rich history of scientific discovery, an already vibrant and accomplished research program

and an environment that allows promising discoveries to go from the lab to clinic as quickly as it is safe to do so, City of Hope is uniquely positioned to lead the

charge against diabetes."

New scientists are being recruited in the areas of cell biology, immunology, diabetic complications, gene regulation and obesity research — areas of study integral to developing new treatments and potential cures for diabetes.

INVESTMENT BRINGS DIABETES CURE CLOSER TO REALITY

BY NICOLE WHITE

To reinforce City of Hope's commitment to accelerating the speed of scientific discovery to treat and cure diabetes, \$30 million will be invested in recruiting highly experienced, well-published scientists to join the Department of Diabetes and Metabolic Diseases Research at Beckman Research Institute of City of Hope.

"As one of only a few centers able to perform potentially lifesaving islet cell transplants, City of Hope is already at the forefront of offering

PANCREATIC STEM CELLS

Islet cell transplantation is potentially a powerful tool for treating type 1 diabetes, but coming up with enough healthy donor cells for the procedure is difficult: Because islet cells comprise only 3 to 4 percent of the organ, one transplant can require cells from two donor pancreases. Of the approximately 200,000 patients with advanced diabetes who cannot be sufficiently managed with insulin, only 1 percent will be able to receive a transplant.

H. Teresa Ku, Ph.D., an associate professor in the Department of Diabetes and Metabolic Diseases Research, and her team have been exploring how donor cells might be supplemented with islet cells grown from stem cells. They recently published a paper describing how the process might be expedited through the overexpression of a specific RNA molecule. This discovery could prove crucial to growing islet cells for transplantation. CN



A NEW PROGRAM FOR

Couples Coping with Cancer

BY BETSY STEWART

ew couples are prepared for the challenges that accompany the diagnosis of breast cancer. Anxiety, depression and isolation can threaten even the most loving and healthy relationship.

How a couple copes can impact not only their relationship, but also the woman's ability to heal and thrive. Research shows that one of the most important factors in ensuring that a woman receives the most benefit from her treatment is the presence of a supportive partner. At the same time, partners need guidance themselves — and yet are often overlooked when it comes to support.

City of Hope's Women's Cancers Program and the Department of Supportive Care Medicine have joined forces to pioneer a program that supports women with breast cancer and their partners. This unique program is the result of years of experience and research.

Matthew Loscalzo, L.C.S.W., Liliane Elkins Endowed Professor in Supportive Care Programs at City of Hope, is renowned for his expertise in partner and family communication and couples preservation. Loscalzo, along with Courtney Vito, M.D., assistant clinical professor of surgery, piloted an innovative strengths-based couple intervention known as the Partners' Clinic. In this program, social work teams engaged women and their partners in biopsychosocial consultations prior to surgery. By providing support early in cancer treatment, the social worker and surgeon team helped couples identify and address potential issues before overwhelming problems arose.

BENEFIT VERIFIED

Over the past three years under the guidance of Loscalzo and Courtney Bitz, L.C.S.W., City of Hope social workers in the Partners' Clinic, assessed 86 women and their partners. The data they collected verified that women and their partners found the intervention



MATTHEW LOSCALZO

useful and timely.
The surgeons
consistently reported
that women served
by the Partners'
Clinic seemed to be
much calmer and
more focused than

those who were not served by the program. As a result, the surgeons were better able to focus on patient care.

Bitz, along with Joanne Mortimer, M.D., Director of the Women's Cancers
Program, is using information gathered from the Partners' Clinic to build a new program of patient and partner support called Couples Coping with Cancer
Together. This program reframes cancer as an opportunity for couples to grow closer. Facing challenges armed with an openness to expressing emotions and supporting each other in a new way can actually strengthen relationships, instead of depleting them.

Bitz has developed a screening tool to identify couples, who are in distress and can benefit from participating in the program. She is also creating educational materials that support healthy communication and gender-based problem-solving skills. Individual, group and Web-based psychological counseling will become major components of the program. By collecting data on the participants, we can continue to refine the program into a model of care that other institutions can replicate.

THE POWER TO HELP WOMEN

Research Aimed at Improving the Lives of Women Here and Around the World

- Jeffrev Weitzel, M.D., director of clinical cancer genetics, has studied the role and prevalence of the BRCA mutation in the Latin American population. His research has revealed the need for in-depth BRCA testing for Latinas. Now Weitzel and his team are training doctors, performing risk assessments and finding more cost-effective ways to perform laboratory testing, so that underserved women in Latin America can receive this important preventative care. Weitzel is also recruiting women from these countries for City of Hope's hereditary cancer registry, which furthers understanding about the clinical impact of dangerous genetic mutations.
- Rahul Jandial, M.D., Ph.D., assistant professor of neurosurgery, and his collaborators are studying the molecular pathway breast cancer follows to spread to the brain, leading to loss of quality and length of life. Their research has shown that breast cancer cells imitate the functions of brain cells in order to fit into their surrounding environment. They recently identified key molecules in the brain that breast cancer cells exploit for their own survival. This vital information can be used to explore therapeutic interventions that target these key molecules and stop breast cancer cells from thriving in the brain.
- Courtney Vito, M.D., assistant clinical professor of surgery, is participating in a multi-institutional study of a promising treatment for women with breast cancer called intraoperative radiation therapy (IORT). Performed during a lumpectomy, IORT delivers intense radiation directly to the cancer site.

The brief procedure replaces six to seven weeks of daily radiation treatment, saving women time and stress. More importantly, IORT can help women avoid the devastating side effects of radiation to one side of the chest, including second cancers.

- Research suggests that women treated with chemotherapy to overcome breast cancer develop metabolic syndrome at a faster rate. Metabolic syndrome is a dangerous group of health factors that includes large waist size, high blood pressure and high cholesterol, which increase the risk for diabetes and heart disease. Joanne Mortimer, M.D., director of the Women's Cancers Program, is conducting research aimed at understanding whether this risk is related to treatment or other factors such as aging or menopause. Her research could lead to treatment decisions that help women receiving chemotherapy for breast cancer avoid metabolic syndrome.
- Peter P. Lee, M.D., Billy and Audrey L. Wilder Professorship in Cancer Immunotherapeutics and chair of cancer immunotherapeutics and tumor immunology, is studying the role of immune and stromal cells in the progression of cancer. He found that stromal cells, a component of connective tissue, support cancer by attracting and modulating immune cells. His team is currently developing three-dimensional microculture systems to study the interactions among stroma, cancer and immune cells in tumors. Their goal is to determine how to disrupt cancer's support system and restore immune function. Lee is also advancing the use of spectral imaging to view two- and three-dimensional images of cell locations, making it possible to understand how immune cells and cancer cells interact within and around the tumor. A leader in using this sophisticated imaging technique, Lee recently led a worldwide webinar to teach other researchers about spectral imaging. CN

PREVENTION TO SURVIVORSHIP

BY H. CHUNG SO

UNDERSTANDING PATIENT NEEDS IS CRUCIAL TO IMPROVING OUTCOMES

t City of Hope, cancer research goes beyond finding better screening tests and new treatments. In the Department of Population Sciences, clinicians and researchers are vigorously studying the causes of cancer and the impact of the disease and its treatment.

Their goal: not only to reduce the incidence of and mortality from cancer, but also to also ensure that cancer survivors lead full, productive lives free from complications and side effects.

Recently, the department has made significant progress toward those goals with studies aimed at preventing relapses among childhood cancer survivors, providing genetic screening to underserved populations and pinpointing factors that contribute to cognitive decline after a hematopoietic cell transplant.

PREVENTING RELAPSES BY IMPROVING FOLLOW-UP ADHERENCE

In a study recently funded with a \$3.2 million, five-year grant from the National Cancer Institute, Smita Bhatia, M.D., M.P.H., Ruth Ziegler Chair in Population Sciences, and Wendy Landier, Ph.D., M.S.N., R.N., C.N.P., assistant professor and director in the Center for Cancer Survivorship, are examining ways to improve medication adherence among young cancer survivors.

Their previous research has shown that in pediatric survivors of acute lymphoblastic leukemia (ALL), failure to adhere to regular use of follow-up medication (maintenance therapy)



SMITA BHATIA



WENDY LANDIER

results in a threefold increased risk of disease relapse. Relapsed ALL is often more difficult to treat and requires more aggressive therapies, which are costlier and have more side effects.

"We've probably all forgotten to take a prescription medication at some

time or another. It's just that in children with leukemia, the stakes are very high," says Landier.

After observing this trend, Bhatia and Landier have developed a strategy to help patients and their families stay on track with maintenance therapy.

The first is an educational video showing how patients and their parents can be mindful of following their medication regimen. Currently, they are testing whether the addition of a Web-based scheduling tool that includes text message reminders to the patients and/or their parents, in additional to the video, boosts adherence to maintenance therapy, compared to viewing the video alone.

"If this trial is successful, it would prevent relapses and improve survival at a fraction of the cost," says Bhatia.

SCREENING AND STUDYING BRCA GENE MUTATIONS AMONG LATINAS

Specific mutations in the BRCA1 and BRCA2 genes increase the risk of breast and ovarian cancers. Although these mutations are common among certain populations, such as Ashkenazi Jews, their prevalence is less well understood in others, including Latinas.

Jeffrey Weitzel, M.D., director of the Division of Clinical Cancer Genetics, aims to change that.

In previously published research, Weitzel showed the need for in-depth BRCA testing for Latinas, who have a If this trial is successful. it would prevent relapses and improve survival at a fraction of the cost."

high incidence of mutations missed by basic sequencing tests.

To support his efforts, he has received funding from the Avon Foundation and the Breast Cancer Research





NEUHAUSEN

Foundation to train doctors, perform risk assessments. and conceive of more cost-effective ways to perform laboratory testing. so that underserved women can receive this important form of preventative care. Additionally, Weitzel is recruiting women from Latin American countries

to be included in City of Hope's BRCA registry in order to learn more about this dangerous mutation.

Susan Neuhausen, Ph.D., The Morris & Horowitz Families Professor in Cancer Etiology & Outcomes Research and co-leader of the Cancer Control and Population Sciences Program, is also conducting research aimed at uncovering additional gene mutations that cause breast cancer in Latinas. These women are more likely to be

diagnosed with breast cancer at younger ages and with more aggressive disease than their white, non-Latina counterparts.

Ultimately, Weitzel and Neuhausen hope these results will lead to the development of an effective risk-based screening approach that will save lives and improve women's health.

INVESTIGATING LINKS BETWEEN TRANSPLANTS AND BRAIN FUNCTION

In a study, presented at the American Society of Hematology Annual Meeting in December 2013, Bhatia and clinical research coordinator Alysia Bosworth looked at factors that contribute to cognitive decline following myeloablative conditioning, the high-intensity chemotherapy and radiation regimen that precedes a hematopoietic transplant.

After evaluating 242 patients for various cognitive functions, such as verbal and motor skill proficiencies, and comparing them to healthy control subjects over a

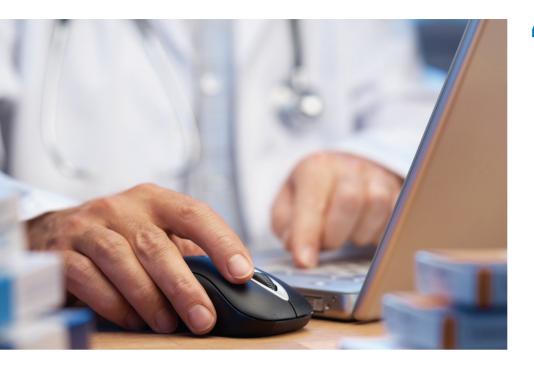
two-year period, Bhatia and Bosworth found that patients who have shorter telomeres (the "end caps" of chromosomes that typically shorten with age) are at greater risk of facing cognitive decline after myeloablative conditioning.

Because chemotherapy and radiation can speed up the telomere-shortening process, Bosworth said patients who are at increased risk for cognitive decline should be monitored closely following transplantation, so that timely intervention can be used to minimize impairment.

Bosworth also said that further studies are needed to see which other factors contribute to telomere shortening and cognitive decline in cancer patients. This will allow the factors to be mitigated in order to help survivors maintain a high quality of life following treatment. CN

Research reported in this publication was supported by the National Cancer Institute of the National Institutes of Health under grant number 1R01CA174683-01A1. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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NEW COMPUTER PROCESS STREAMLINES

Doctors' Orders

BY ROBERTA NICHOLS

CITY OF HOPE'S CHIEF NURSING AND PATIENT SERVICES OFFICER Shirley Johnson, R.N., is not prone to hyperbole. So when she describes an event as a "big day in City of Hope history that will touch every department, every patient and every provider," it's time to sit up and take notice.

n April 27, the
Computerized
Provider Order
Entry system went
live. In this latest
evolution in the move
toward electronic medical records at
the hospital, physicians and providers
began entering their own orders into

various departments for action."

For the past several years, Johnson worked on this complex project with colleagues from many departments,

computers, orders that "cascade to

including Clinical Information, Nursing, Pharmacy, Radiology, Laboratories, Clinical Nutrition and Rehabilitation. Physicians were also involved in creating the new ordering process.

NO MORE 'SNAIL MAIL'

Until this system went "live," a doctor's written order for a hospital patient was sent to an inpatient unit clerk, who entered it onto the Medication Administration Record and other vehicles used by the nursing staff. After a unit nurse ensured its accuracy, the order was entered into the patient's

As we built the system, our foremost concern was patient safety.

chart. Pharmacy then checked before the drug was sent to the unit to administer.

Under the streamlined system, orders for medications, physical therapy or wound care treatments are entered into a computer near the patient's bedside, at the nurses' station or in the physician's office or home, and go directly to the appropriate department.

STREAMLINING THE PROCESS

City of Hope physicians and care provider teams have developed almost 700 order sets which group commonly prescribed orders together into menus of procedures and medications specific to individual diseases and treatments.

"I think we have one of the best order sets of any cancer program in the country. A lot of people will want to see what we've done here," says Johnson.

The system reminds doctors who place an order of things they may want to consider, such as medications to reduce pain and prevent nausea caused by the drug they are prescribing.

"As we built the system, our foremost concern was patient safety. We created structures within the ordering process that ensure safe ordering," Johnson says.

When an order is entered, screens pop up with reminders about drug methods to reduce toxicity or potential interactions with other medications.

Having the information available electronically enables caregivers to ultimately improve efficiency and safety.

Equally important, the ability to access rich data electronically will allow City of Hope caregivers to continually evaluate the needs of their patients, provide better therapies and offer better care plans in the future. CN

SPEARHEADING CHANGE FOR PATIENTS NATIONWIDE

Shifting from Fear to Peace of Mind

ADVANCED CARE PLANNING IS NOT ABOUT DYING; IT'S ABOUT ENJOYING THE BEST POSSIBLE QUALITY OF LIFE FOR THE REST OF YOUR LIFE.

BY JENNIFER FINNIE

ith this in mind, City of Hope's
Department of Supportive Care
Medicine is spearheading a
movement to take the fear out of
advanced care planning by making
it a standard topic of conversation with all patients. This
program is designed to change the culture surrounding
advanced care decision-making from that of a passive



DAWN GROSS

clerical practice to a patient- and family-driven interactive conversation.

"Supporting and facilitating conversations about our patient's lives, their hopes, their dreams, and what's important to them before they're faced with tough choices and

a limited time to make them, can relieve unnecessary stress and suffering", says City of Hope's palliative care expert, Dawn Gross, M.D., Ph.D.

MUCH MORE THAN A FORM

Having an advanced directive on file is a good first step, but it's not enough. The legal form does not facilitate a family dialogue or capture evolving wishes about the continuum of care. "With quality of life at the heart of our patient care model, talking about what's really important to our patients opens the floodgates for a shift from fear to peace of mind," says Gross. As the new Arthur M. Coppola Family Chair in Supportive Care Medicine, Gross is on the front lines of this new program. "Knowing patients' wishes are being fulfilled

gives families, patients and physicians a sense of peace and relief. Their loved ones will no longer be charged with guessing what a patient would want, as is so often the case now," she says.

By normalizing the advanced care decision-making process, City of Hope is laying the foundation for a national shift to incorporate advanced care planning in a larger plan to preserve and support quality of life when a patient is faced with a chronic or life-threatening disease. "Changing the culture of advanced care planning will transform the emotionally charged landscape of a topic most families tend to avoid out of fear, lack of knowledge or limited access to one of planning," says Gross. City of Hope's national reputation and influence will play an important role in making mainstreaming the conversation into health care settings across the country.

With a coordinated, systematic and sustainable model for the early introduction of an advanced care planning discussion, City of Hope's Department of Supportive Care Medicine is pioneering the next level of compassionate supportive care designed to give patients and families a sense of dignity, comfort and hope as they journey through the most difficult time in their lives. CN

MY CANCER DIAGNOSIS: What I Wish I'd Known

THE BEST ADVICE COMES FROM PEOPLE WHO'VE BEEN THERE

The City of Hope series "My Cancer Diagnosis: What I Wish I'd Known" asks former patients to look back and let us know what they wish they'd known at the time they were diagnosed. What wisdom, soothing words, practical tips or just old-fashioned advice did they wish they had had—and would like to give to other newly diagnosed patients. Here is some of their advice

BY ROBERTA NICHOLS

J. Jon Bruno

BISHOP OF LOS ANGELES' EPISCOPAL DIOCESE

A larger-than-life figure, J. Jon Bruno is the father of three and grandfather of seven. He's also an Episcopal bishop who oversees 147 parishes and missions, 44 schools and 20 institutions. He has been credited with making the diocese a more "human-friendly place" by establishing programs to feed the poor, stop gangs, wash the clothes



of the homeless, house AIDS patients, collaborate with all religious faiths and, most controversially, support gay, lesbian and transgender rights.

Still, he never realized his impact on others until after he was diagnosed with, and treated for, acute monocytic leukemia at City of Hope.

"I literally received more than 100 prayer shawls. I covered myself in them and felt the stitch-by-stitch love," he remembers. "One lady made a quilt, and I used that to pray with for many days."

Bruno attributes his restored health to a "conjoined effort of all the scientists, all of our prayers and all of the community's love. My life is rich and more abundant now than anybody could ask for or imagine," he says.

HIS ADVICE ...

Don't try to be tough. You don't have to say, 'I can do this by myself.' Trust other people. When you enter into a community, all of a sudden certain things happen. You learn to love yourself. Most of us are taught to love other people more than we love ourselves. I found out I was taking care of everybody else better than I was taking care of myself."

Christine Pechera

WRITER AND FILMMAKER

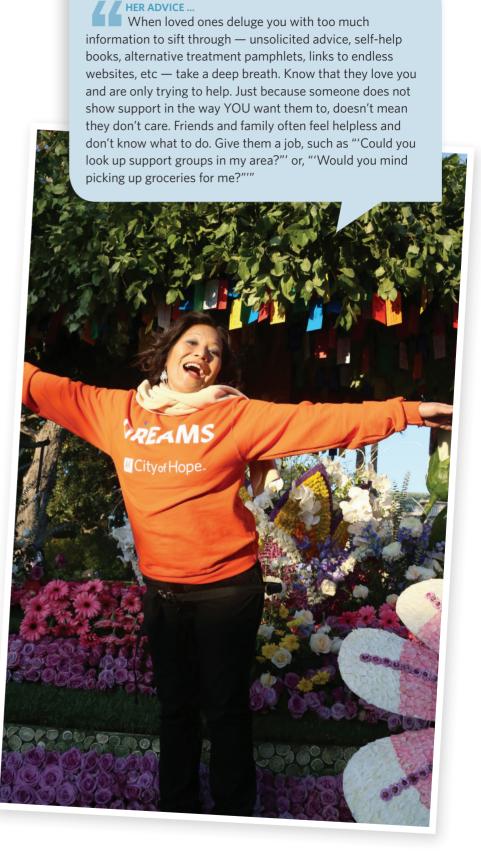
Christine Pechera still finds it hard to watch a 2006 YouTube video imploring people to help a young woman searching for a bone marrow donor. "My heart breaks for the poor girl," she says. "And then I remember that girl was me."

The filmmaker was diagnosed with non-Hodgkin lymphoma in 2002 and underwent chemotherapy, radiation and a transplant in which her own stem cells were used. She returned to health, but relapsed in 2005. When the Be the Match registry failed to turn up a donor who would be compatible with Pechera's Filipino ancestry, her friends helped her produce the recruitment video.

Her search for a match was even featured on a "Nightline" segment chronicling the need for more minority donors.

Finally, a Chinese man living in Hong Kong — who had never seen these videos — was identified as a match. In 2006, 37-year-old Kam Tsuen "Kent" Wong donated the stem cells that saved Pechera's life.

Today, Pechera is flourishing. She completed a master's degree in fine arts from Pepperdine University and just finished her first season working on a TV show. On New Year's Day, she rode City of Hope's Tournament of Roses Rose Parade float, fulfilling a lifelong dream.



THEIR ADVICE TO WELL-MEANING FRIENDS AND VISITORS: I can stop talking a few minutes. Short visits are cool,



I would hold him and Kenny would poke him. We'd say, 'This this, but we stayed positive and wished for the best. It's helped us remain sane and close. If we could find humor in serious

Ken and Diana Wolfrank

PARENTS OF GAVIN WOLFRANK, FORMER LEUKEMIA PATIENT

When a child is diagnosed with cancer, friends and relatives of the family often don't know what to say, what to do, how to react. Some visitors linger for hours in the child's hospital

room, further exhausting already weary parents. Others pose painfully rhetorical questions: "Don't you wish this weren't happening?"

Ken and Diana Wolfrank know the difficulties firsthand. Their son, Gavin, was only 7 months old in 2006 when his mother first noticed the "blueberry" bruises on his tiny hand. Ultimately, Gavin was diagnosed with acute lymphoblastic leukemia.

That diagnosis was the start of a years-long ordeal for Gavin, his parents and his sister, Emma. Gavin soon began chemotherapy at a local hospital, ultimately going into remission. He was able to stop chemotherapy in June 2009, but by the following October, the disease was back.





For the fourth time, he underwent chemotherapy — this time to make him strong enough to endure his only chance at survival, a bone marrow transplant.

A donor was identified in February 2010, and Gavin underwent a transplant at City of Hope in March. But the family's elation soon turned to fear, when Gavin developed graft-versus-host disease. Steroids to treat the condition caused his head and body to balloon, and he stopped walking. His legs began to wither, and his parents had to carry him everywhere — no small feat, given that he weighed 75 pounds.

Over time, the new cells began to work, his grotesque swelling subsided and the couple began to recognize their little boy again.

Today, Gavin is an active second-grader who likes science and math. His parents breathe a little easier, knowing that he's strong and healthy. They would now like to share some hardwon wisdom – not just with other parents in their position, but also with well-meaning family and friends.

Jeanelle Folbrecht

DIRECTOR OF PSYCHOLOGY, CITY OF HOPE

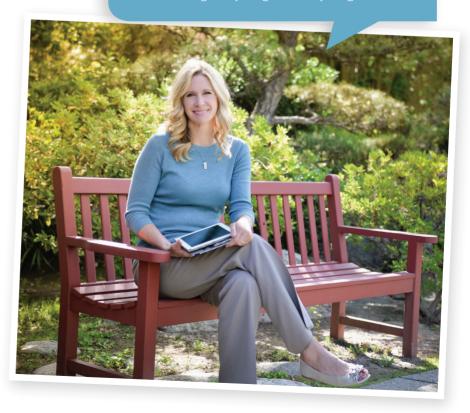
Jeanelle Folbrecht, Ph.D., sees many families wonder how they will ever cope with their child's cancer diagnosis. She also understands how the diagnosis puts pressure on friends and loved ones who want to help.

"People often don't know what to do or say, so they back off and wait for the family to reach out. Meanwhile, the family is traumatized and in chaos, and doesn't know how or when to reach out," says Folbrecht, director of psychology in the Department of Supportive Care Medicine at City of Hope.

She offers advice based on her years of experience.

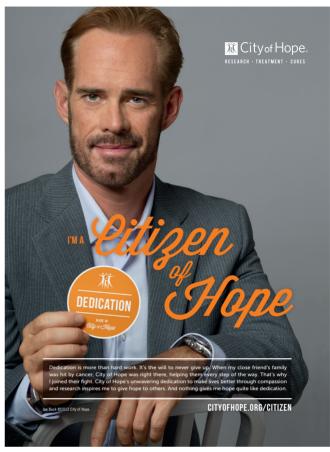
To friends and family, she advises: Unless the parents say it first, avoid comments that attempt to provide a meaning to the experience, such as, "There's a purpose in this for you," or "This is all for the good." Putting the situation in a religious framework may be helpful to some, she says, but is outside the experience of others. CN

HER ADVICE TO PARENTS, SHE REMINDS:
You still have to be a parent. Your child is developing, and you need to be engaged in that safety, a feeling that things aren't so bad that all of a



SUPPORTINGHOPF





MEET OUR NEWEST

Citizens of Hope

BY ERICA HELWICK

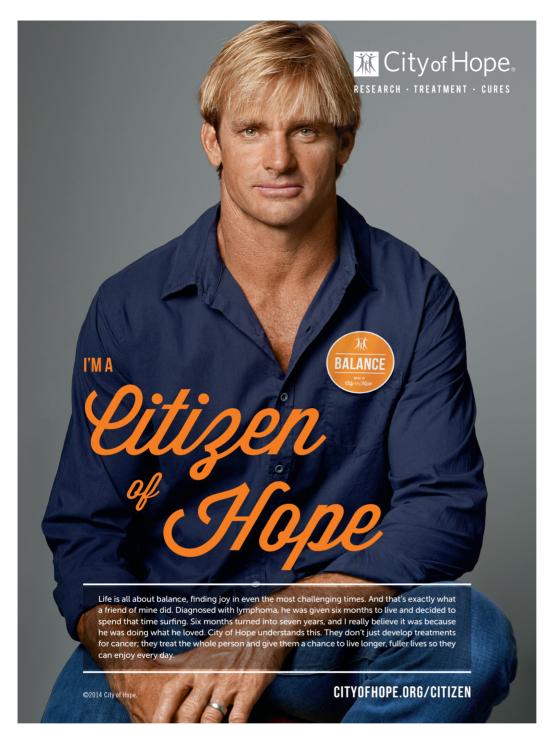
WE'RE PROUD TO INTRODUCE OUR NEWEST CITIZENS OF HOPE — ALISON SWEENEY, LAIRD HAMILTON AND JOE BUCK.

Il are passionate advocates for City of Hope. They join a group of distinguished Citizens: Kiefer Sutherland, Taraji P. Henson, Archie Panjabi and Josie Maran, who help support our efforts to find cures for cancer and other life-threatening diseases.

You may recognize **Alison Sweeney** from her role as host of NBC's hit reality series, "The Biggest Loser," or from "Days of Our Lives," where she recently marked her 21st consecutive year playing the role

of Sami Brady. In addition to these commitments, Sweeney is an author, producer, director, wife, mother, and health and wellness advocate.

Sweeney decided to join City of Hope's fight, because she shares our belief in the power of hope. Her parents taught her that when someone is determined, the possibilities are endless. This philosophy has been a guiding principle in her life ever since. She decided to sign on to the Citizens of Hope campaign, because she believes that City of Hope is the "textbook definition of determination." In addition to her role as a Citizen, Sweeney lends her support to City of Hope as a Fitness Ambassador to help promote our groundbreaking research linking exercise to cancer prevention.



Laird Hamilton is arguably the most legendary surfer in the world. Not only is he the co-inventor of tow-in surfing, he is also largely responsible for the rise of kitesurfing and the popularity of stand up paddle surfing. In addition, he is an action-sports model and fitness enthusiast.

Hamilton became a Citizen of Hope because he believes that we don't just develop treatments for cancer; we also treat the whole person and give them a chance to live longer, fuller lives so they can enjoy every day. This resonates with him because he had a close friend who was diagnosed with lymphoma and chose to live his remaining life to the fullest

by doing what he loved — surfing. Although he was given six months to live, it turned into seven years.

The son of legendary sportscaster Jack Buck, Joe Buck is a longtime supporter of City of Hope, and an esteemed sportscaster who covers primarily the National Football League and Major League Baseball. He is one of only several announcers to call both the World Series and the Super Bowl. Buck has

won numerous Sports Emmy Awards for his play-by-play work for Fox Sports.

When a friend of Buck's family was struck by cancer, the team at City of Hope was by his side the entire time. Our unwavering dedication to treating his friend, and to making lives better through compassion and research, inspired Buck to support our cause. He believes that dedication is more than hard work — it's the will to never give up. He sees this at City of Hope.

Join Alison Sweeney, Laird Hamilton and Joe Buck in becoming a Citizen of Hope at www.cityofhope.org/citizen. CN

SUPPORTINGHOPF



OUTHOPE SHARE YOUR STORY, IMPACT YOUR CAUSE

BY DOMINIQUE GRIGNETTI



City of Hope recently launched an online fundraising network called ourHope

urHope was designed to allow patients and supporters of any age to create their own webpage, share their story and collect donations from friends, family and associates. You can be part of a collective effort to raise funds for cancer research that will shorten the time it takes to advance treatments and discovery cures. The funds you raise can be directed to any of the causes below:

- Cancer Any Type
- Anesthesiology
- Sheri & Les Biller Patient and Family Resource Center
- Bladder Cancer
- Blood Donor Center
- Brain Cancer
- Breast Cancer
- Cancer and Aging
- Cancer Research
- Cancer Survivorship
- Cervical Cancer

- Colon Cancer
- Colorectal Cancer
- Diabetes
- HIV/AIDS
- Kidney Cancer
- Leukemia
- Liver Cancer
- Lung Cancer
- Lymphoma
- Melanoma
- MusculoskeletalCancer
- Myeloma

- Oral Cancer
- Ovarian Cancer
- Pancreatic Cancer
- Pediatric Cancer
- Prostate Cancer
- Radiation Oncology
- Stomach Cancer
- Thyroid Cancer
- Urologic Cancer
- Uterine Cancer
- Women's Cancers Program













There are six different themes you can base your fundraising campaign on to honor the life of a friend or loved one.

ourHope gives fundraisers multiple opportunities to seek support from friends and family.

IS YOUR BIRTHDAY COMING UP?

Instead of gifts, request donations to your ourHope page. Want to honor the memory of loved ones? You can set up a fundraising page in their honor.
Running a marathon? Ask friends and family to support each mile. Countless meaningful events in our lives can become fundraising opportunities, including graduations, weddings, personal survival milestones, births, deaths and cancer awareness months, to name a few.

START TODAY

To set up your own ourHope page and start raising money and awareness today. Go to cityofhope.org/ourhope

For more information, contact: ourHope@coh.org



MARATHON EFFORTS FUND BRAIN CANCER

Dan Kamas is using ourHope to raise money for brain cancer research — a topic that hits close to home for the 32-year-old.

Kamas was only 5 years old when his father, Daniel Calvin Kamas, was diagnosed with glioblastoma. Within two years of his diagnosis, his father had passed away.

Kamas set up a webpage, which he dedicated to the memory of his father, to raise money and awareness to fight brain cancer. His father was a runner, so Kamas chose to run the Austin Marathon in his honor and asked family and friends to sponsor his run by donating to City of Hope.

"ourHope provided a great space for me to honor my father and support City of Hope's mission," he says.

Kamas has found results of his ourHope fundraiser to be rewarding in more ways than he expected. Not only did he raise over \$5,000 for brain cancer research at City of Hope, but he learned so much about his father through the many people that knew his father and reached out to support. (N



Kamas' ourHope page, with over \$5,000 going directly to brain cancer research at City of Hope

Birdies Bring Hope at the Northern Trust Open





In February 2014, City of Hope returned for the second year as the official charity of the Northern Trust Open. The tournament, held at legendary The Riviera Country Club in Pacific Palisades is one of the longest-running and most-respected stops on the PGA TOUR.

Proceeds from the tournament are directed toward research and treatment programs. The tournament also provides a superb coverage for City of Hope, with significant opportunities to showcase its mission and connect with the community over the four-day event.

With each birdie recorded at the



Northern Trust Open, Staples provided \$500 to City of Hope though the Birdies for Hope program. Golfers scored 1,449 birdies during the tournament, netting City of Hope the maximum amount of \$500,000.

Golf legend Amy Alcott, City of Hope's golf ambassador, hosted the Birdies for Hope daily putting challenge, and encouraged fans to join the bone marrow registry and become Citizens of Hope.

Throughout the week, it was wonderful to see many City of Hope patients, families and supporters enjoying themselves at the Northern Trust Open. With a field of venerable golfers, the play, the setting and the benefit to City of Hope were unmatched.



Hydration is part of a healthy eating plan. Drink approximately eight cups of water

per day. It's essential to your health — it helps energize your muscles, helps clear your kidneys of toxins and keeps things flowing through your digestive system.



shield yourself from the sun

Skin cancer is — by far — the most common cancer among Americans. It's never too early to protect yourself from the sun's damaging ultraviolet rays. Use powerful sunscreen (SPF30 or above) a lot and often, and cover up.



SHOP4GOOD

GIVING TO CITY OF HOPE DOESN'T NEED A SPECIAL OCCASION. THESE PARTNERSHIPS GIVE BACK EVERY TIME YOU SHOP.



OF CONSUMERS ARE VERY LIKELY TO SWITCH BRANDS TO ONE THAT IS ASSOCIATED WITH A GOOD CAUSE*

3M continues its support for City of Hope by

donating between 30 cents and \$2 for purchases of a plethora of pink products, including 3M Scotch tape dispensers shaped like a stiletto heel or a pebble, both created by renowned designer Karim Rashid. And don't forget pink multipurpose scissors and Post-It pop-up note dispensers in the shape of a heart; those purchases also benefit City of Hope. The products are available at quill.com and at Staples, Office Depot and other office product retailers.

ACCO BRANDS USA

Get organized

support lifesaving breast cancer research with specially marked pink planners, calendars, notebooks and more from ACCO Brands USA. Mead, an ACCO brand and a longtime supporter of City of Hope, has donated more than \$2 million to date for breast cancer research, treatment and education. Specially marked ACCO. AT-A-GLANCE, Cambridge, **Quartet and Swingline** products can be purchased online at mead.com and quill.com, as well as at Staples and Office Depot.

ALEXIS BITTAR

Luxury jewelry designer, Alexis Bittar, features

a variety of sales throughout the year benefiting our breast cancer research, treatment, and education programs. Go to alexisbittar.com for sales updates, store locations and to see Bittar's unique designs.

CE SUPPLY

Carry hope with you, with stylish

cases from CE Supply's
Making the Case for Hope
product line, which includes
phone armband carriers and
iPad folios. For each case
sold, CE Supply will donate
\$2 to City of Hope for cancer
research. Products are
available at cesupplystore.com
and amazon.com.

GEORGIA PACIFIC

Georgia-Pacific supports

City of Hope's effort to transform the future of health. In 2013, the company generously donated \$225,000 and will feature City of Hope on specially-marked consumer goods this Fall.

HARD ROCK AND KISS

Hard Rock and KISS have

teamed up to donate 15 percent from the sale of the brand's KISS Signature Series Edition 32 T-shirt and collectible pin, in support of City of Hope. These special-edition products will be available for a limited time in stores and online at hardrock.com.

LINEA PELLE

Linea Pelle, which offers casual luxury

handbags, belts and other leather goods, donates 5 percent of sales every Thursday to City of Hope's breast cancer research, treatment, and education program. Go to lineapelle.com to see their collection.

MURAD

Look good and feel good with Murad's Hydrate

for Hope, a limited edition, specially marked moisturizer duo that comes in a pink polka dot cosmetic bag. Murad donates 10 percent from the sale of each set for City of Hope's women's cancers research, treatment and education programs. Hydrate for Hope will be available in October at Massage Envy, Sephora.com (online only), Sephora inside JCPenney, Beauty Brands, Army and Air Force Exchange Service, and independent spas and salons.

NEWELL RUBBERMAID

Newell Rubbermaid is

donating to City of Hope with each purchase of a Pink@Work product, including specially marked PaperMate, Parker and Uni-ball pens, Expo and Sharpie markers, Liquid Paper and various Rolodex products. The donations for breast cancer research, treatment and education range from 10 cents to \$1, with information on the product packaging. More information is at pinkatwork.com. Products are available from CVS/pharmacy, Staples, OfficeMax and other office products retailers.

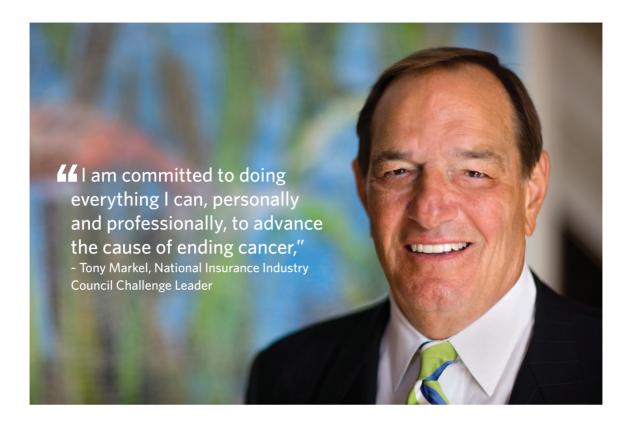
PRAVANA INTERNATIONAL

Pravana International has created NEVO, a gluten-free and vegan hair-care line with no sulfates, parabens or phthalates. Pravana is donating 5 percent of NEVO product sales to City of Hope for cancer research, treatment and education. Available at specialty salon supply shops.

STAPLES

Staples' tireless dedication to City of Hope's

mission has been evident through their continuous support of industry events, Walk for Hope and Celebrity Softball Game sponsorship, as well as specially-marked product promotions. Collectively, the company donated \$675,000 in 2013 and plans to exceed that figure in 2014.



Ensuring the Future: CITY OF HOPE'S INDUSTRY GROUPS LEAD THE WAY

BY LYNNE HAGERUP

INDUSTRY PARTNERS HAVE HELPED CITY OF HOPE ACHIEVE SCIENTIFIC AND MEDICAL BREAKTHROUGHS

that have touched the lives of people across the country and around the world. Now, as City of Hope begins its second century of achievement, many industry leaders are poised to partner with it.

n order to continue a long record of impressive achievement, a visionary and dedicated group of industry leaders (pictured at right) has stepped forward to lead the Industry Challenge to secure City of Hope's next 100 years of care and discovery. Longtime City of Hope industry supporter, Tony Markel, helped launch the campaign. "I am committed to doing everything I can, personally and professionally, to advance the cause of ending cancer." he says.

The Industry Challenge is an effort to encourage estate commitments — gifts made by bequest in a will or trust or by beneficiary designation — from participants in City of Hope's industry groups. Those featured here, and the industry colleagues who have joined them in this effort, have set a wonderful example by putting their values into action. Most estate gifts cost nothing now, and beneficiaries can be changed at any time. Some gifts provide estate, capital gains and income-tax savings.

Through their leadership, these philanthropic individuals are helping to ensure that industry partners continue their extraordinary legacy of support. Most important, their gifts will enable City of Hope to continue making important scientific and medical advances for generations to come.

TO READ THE PERSONAL STORY of each industry leader and learn more about the Industry Challenge, please visit myplanwithcoh.org/industry.



"It's easy to appreciate what City of Hope does. You see the difference in lives saved." ~ Dick and Carole Spezzano, Food Industries Circle Challenge Leaders



"Some of the research that's being done could help our kids and grandkids and generations down the line." - Sarah, Jeff, Lindsay and Tyler Howard, National Business Products Industry Challenge Leaders



"We have been moved by the passion and dedication of City of Hope's talented doctors and staff. A bequest in your will for City of Hope is an effortless way to help." ~ Hodges and Joe Carroll, National Home Furnishings Industry Challenge Leaders



"We understand there won't be a cure for every disease, but City of Hope is in the best position to have an impact. We want this to be part of our personal legacy." ~ Tracy and Doug Lape, Food Industries Circle Challenge Leaders



"I see how City of Hope has grown, with industry support, from a small hospital to a world-class institution, and I know our bequest will be put to good use." - Bruce and Marielena Merino, Hardware/Homebuilding Industry Challenge Leaders



"If we each make a gift to City of Hope through our estate, we will be doing our part to secure the future of City of Hope for many years to come." ~ Betsy and Jeff Kapor, Fashion & Retail Group Challenge Leaders CN

HARDWARE/HOMEBUILDING INDUSTRY

Medical Center Improvements Granted

THE HOME DEPOT FOUNDATION GRANTS MORE FUNDING FOR CITY OF HOPE

BY AL OLSEN

The Home Depot Foundation has granted an additional \$200,000 to be used to install and to retrofit bungalows in Hope and Parsons Village with new energy efficient air conditioning.



Bungalow at Hope Village

For the past 14 years, The Home Depot Foundation supported City of Hope by funding improvements to the village bungalows and rebuilding the Village Information/Visitors' Center. The foundation also funded the first solar panels used at the medical

center that helped the Michael Amini Transfusion Medicine Center achieve LEEDs certification as an energy efficient building.

With this recent gift, the foundation's support total almost \$3 million.

NATIONAL HOME FURNISHINGS INDUSTRY

National Support Goes Global

BY YOLANDA GUERRERO

Vowing to beat all records, George Tsai of Fairmont Designs is challenging his partners, including those overseas, to meet his fundraising goal of \$1.2 million for the 2014 National Home Furnishings West Coast Golf & Tennis Tournament. As the honoree for the event, Tsai personally pledged \$450,000 and sought support from franchisees in Asia. Leading the international efforts is Woodworth Int'l Corp with a donation of \$50,000 to City of Hope. These efforts, and those of the National Home Furnishings Industry (NHFI) membership, are well on their way to meeting, even beating, Tsai's challenge in time for the golf event on June 9. Tsai and Jason Liu are the first Asian-Americans to be honored by NHFI



and through their commitment to City of Hope, are spreading awareness to new supporters in Asia. Under Tsai's leadership, the industry may soon be known as the "International Home Furnishings Industry." HARDWARE/HOMEBUILDING INDUSTRY

Industry Efforts are Life Changing and Affirming for Honoree

HONOREE COMMITTED TO HELP PATIENTS SURVIVE AND THRIVE

BY AL OLSEN

City of Hope's Hardware/ Homebuilding Industry's honored Karen Mendelsohn, vice president, chief marketing and strategy officer of MASCO Corporation, with City of Hope's highest honor,



KAREN MENDELSOHN

the 2014 Spirit of Life® Award. at a gala on Feb. 3 at the Venetian Hotel in Las Vegas — the day before the industry's biggest trade

show opened at the Las Vegas Convention Center.

Craig Menear, president, U.S. Retail, Home Depot and past Spirit of Life honoree, introduced Mendelsohn saying "she truly is one of the industry's leaders for this great cause."

About the honor, Mendelsohn said: "City of Hope is about surviving and thriving. Together all of us united to raise \$850,000 for this organization that is life changing and life affirming. And for that I am thankful." In addition to the industry's fundraising efforts, Masco affiliated companies, coupled with personal gifts from many of their top executives, donated over \$100,000.

HEATHER CURBOW FOR TEAM PHOTOGENIC © 2013, THOMAS BROWN

LIFETIME ACHIEVEMENT AWARDS HONOR WHILE GUESTS FUND PROGRESS



PACIFIC NORTHWEST FOOD INDUSTRIES CIRCLE On Nov. 2, 2013, City of Hope's Pacific Northwest Food Industries Circle hosted the 25th Harvest Celebration Ball. Lifetime Achievement awards were presented to Chuck Bundrant, founder and chairman of Trident Seafoods and to Ste. Michelle Wine Estates. At the event, more than \$100,000 was raised to purchase a spectropolarimeter for use by researchers in the Department of Molecular Medicine. The machine is used to development "smart drugs" that target cancer with minimal toxicities.

At the event, guests were welcomed by Robert Stone, president and chief executive officer of City of Hope, and celebrity chef Jenn Louis, who shared her mother's journey with cancer while a patient at City of Hope. The event was the culmination of activities for the Pacific Northwest Food Industries Circle which generated more than \$900.000 for 2013. ~ Norma Morris

Pictured from left, Karen Burke and Rachael Ellas of St. Michelle Wine Estates. Chuck Bundrant and Robert Stone.

THE HEALING POWER OF MUSIC



NATIONAL HOME FURNISHINGS INDUSTRY Thanks to a generous donation of a piano from Joyce and Larry Powell, patients and their families will now experience the healing power of music as they wait in the first and second floor lobbies of City of Hope Helford Clinical Research Hospital. Joyce and Larry Powell are pictured in front of the player piano with their son, Rick Powell, co-chair of the National Home Furnshings Industry West Coast Golf & Tennis Tournament.

NORTHERN CALIFORNIA FOOD INDUSTRIES CIRCLE



Matt Tuttle of Excelsior Wines with Aaron Fein of Banfi and Wilfred Wong of BevMo

Taste of Hope

AMID TOASTS AND DANCE, FOOD INDUSTRY
COMMITS TO CURES

BY MINDY FINKELSTEIN

The 16th Annual Taste of Hope event on Thursday, Feb. 27 at the Palm Event Center in Pleasanton, California, was another success for our Northern California Food Industries Circle (NCFIC), raising more than \$93,000 for groundbreaking research and treatment at City of Hope.

Executives of the retail trade volunteered as tasting station hosts while vying for "Hope Cash" tips. A variety of companies participated this year, including BevMo, Costco, Cost Plus, Draeger's, Food4Less, Food Maxx, Lucky, Lunardi's, Mi Pueblo, Raley's, Safeway, Save Mart Supermarkets and Unified Grocers.

The NCFIC's Emerging Leaders Committee kicked off their fundraising year with a surprise "flash mob."

Following the dance, NCFIC Board President Steve Junqueiro of Save Mart Supermarkets thanked guests for providing "the necessary funding for City of Hope to find tomorrow's cure for today's most devastating diseases." Established in 1978, the NCFIC represents a unique commitment among the region's leading retailers, brokers, manufacturers and related vendors to support City of Hope's humanitarian mission. To date, the group has raised over \$34 million.



spice it up

Scientists have found that **cinnamon can do more than just spice up your life**. Cinnamon extract interferes with the protein that helps tumors grow. It's also thought to lower blood sugar and reduce cholesterol.

CHAPTERS AND **REGIONS**



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.



Going the Distance

PALM AIRE CHAPTER MEMBER CELEBRATES SOUL MATE'S LIFE

BY SHARI MEEHAN

It's a long way from Brooklyn's lower East Side to philanthropist, but 94-year-old Louis Brickman has gone the distance. His mother and father emigrated from Poland in the early 1900s and found work in the garment business.



LOUIS BRICKMAN

Brickman learned to sew as a young age. "Actually we were very poor, but I never knew it," he guipped.

Brickman retired to Florida after running a successful bookbinding business, where

he met the late Lucie Pilcer Harnick, his soul mate of many years, who introduced him to City of Hope and the Southeast Region's Palm Aire Chapter.

In 2013, Brickman established a City of Hope charitable gift annuity in her honor. "Lucie was always helping others," he recalled. "She was a devoted supporter of City of Hope and an avid chapter member. Making a gift to City of Hope was a meaningful way to celebrate her life."

When you create a charitable gift annuity, you donate cash or appreciated assets such as securities or real estate to City of Hope in exchange for a guaranteed lifetime income.

Brickman appreciates the income he receives from his annuity. But his biggest source of satisfaction comes from supporting City of Hope.

He recently created his second charitable gift annuity as a tribute to the Brickman Family Foundation, his children and grandchildren who will carry forward his legacy of hope and healing.

"Through these gifts to City of Hope," he said, "I am leaving an eternal legacy, marking my footprints in the sand."



eat the rainbow

But, not the candy variety — for a healthier diet, eat a colorful one filled with fresh fruits and vegetables. The more colorful, the more nutrient rich and disease fighting your plate will be. You can't control your genes, but you can take charge of what's on your plate.



EASTERN DIVISION



From left, Richard Ehrlich, National Ambassador Leadership Council member and chair, Florida Leadership Council, Jean Katz, Selma Ehrlich and Richard Katz

A Family Legacy

ATLANTA COUPLE AFFIRMS CITY OF HOPE LEGACY WITH \$1 MILLION LEADERSHIP GIFT

BY SHARI MEEHAN

Philanthropists Richard and Jean Katz committed to a \$1 million pledge to fund construction of The Richard & Jean Katz Central Courtyard in the Arthur & Rosalie Kaplan Family Pavilion conference core.

Dick Katz cites his late mother Hazel's longtime involvement with City of Hope as inspiration for furthering his family's legacy. Hazel Katz helped found the Atlanta Chapter, which has raised more than \$1 million since its inception in 1957. The Katz's previous spouses died from the same type of cancer, further spurring their support.

Over the years, the Katzes have made multiple \$100,000 gifts, but Dick Katz yearned to commemorate not only his family's legacy but also honor City of Hope's past and future.

While visiting City of Hope during the Centennial Convention, Jean Katz reflected on the adage that life is not measured by the number of breaths you take, but by the moments that take your breath away. They seized the opportunity to help build the Kaplan Family Pavilion, a testament to the dedication of City of Hope's founders and supporters.

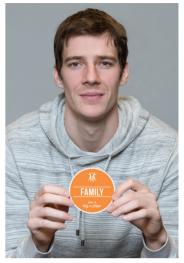
"Had I known how much satisfaction I would receive through philanthropy, I would have worked a lot harder to make more money" Dick Katz added with a grin.

SOUTHWEST

Zone Defense A NEW CITIZEN IN PHOENIX

BY HEATHER OLINTO

Phoenix Suns basketball star Goran Dragic has become a Citizen of Hope and will lend his support in the Phoenix area. Dragic is looking forward to utilizing basketball as a platform to give back and help spread important messages about cancer prevention, exercise and healthy living. Dragic, who helped lead the Suns to a phenomenal season, was awarded the 2013-14 Kia NBA Most Improved Player Award in April. As part of its support of the award, Kia Motors America will donate a 2015 Kia



Goran Dragic is one of the newest Citizens of Hope, supporting the Phoenix area.

Sorento LX CUV to City of Hope on Dragic's behalf.

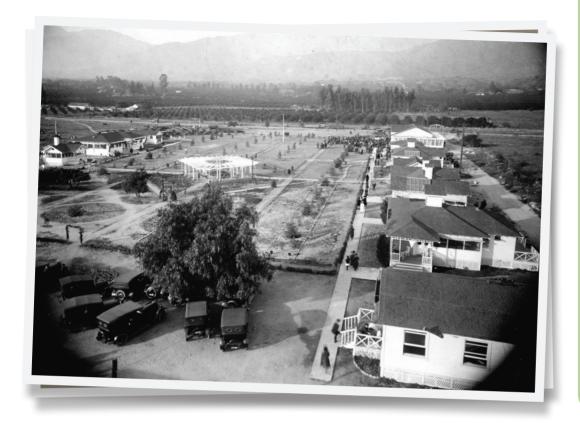
"We are so fortunate to have Goran lend his star power to City of Hope as our new Phoenix Ambassador. In addition to donating a new car to the Southwest region, he has attended fundraising events and is 'giving his birthday away' to City of Hope through the ourHope program. Goran has a huge heart to go along with his huge talent," noted Teri Lane, City of Hope southwest regional office director.

LESLIE'S SWIMMING POOL SUPPLIES



LESLIE'S SWIMMING POOL SUPPLIES, headquartered in Phoenix, has made a donation of \$20,000 to the City of Hope Southwest Regional Office. The generous donation supports the 23rd annual Spirit of Hope golf tournament and dinner presented by the Southwest Food Industries Circle. From left, Marie Sousa, vice president of human resources; Mike Hatch, executive vice president (EVP) and chief marketing officer; Barbara Westberg, City of Hope; Larry Hayward, chief executive officer; Teri Lane, City of Hope; Brad Smith, EVP; Steve Ortega, EVP and chief financial officer.

PICTURETHF**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.

Welcome, San Francisco!

AUXILIARIES AND DEDICATIONS

BY SUSAN DOUGLASS YATES

estive streamers and a banner emblazoned with, "Welcome San Francisco," adorned the buildings and gazebo at the Jewish Consumptive Relief Association's Los Angeles Sanitorium in Duarte, California, when crowds gathered on a cool day in January 1921 to honor their San Francisco Auxiliary and the funds it had raised for a new building. Standing on a nearby water tower, a photographer captured the growing campus, surrounded by citrus fields and the San Gabriel Mountains, in a region whose salubrious climate had long attracted health seekers.

The San Francisco Building (seen in the upper portion of the photograph) was the first concrete structure at the sanatorium. In addition to adding 12 beds to the institution's overall capacity, the building housed the most modern hospital facilities. Bed-ridden patients who were formerly scattered throughout the various cottages could

now be housed in one location, allowing for better care.

The San Francisco Building marked just one of many improvements made to the sanatorium that year. Other enhancements included a new bath house, an enlarged and improved medical building, an open-air theater, and a reconstructed and refurnished synagogue and beautified grounds (made possible by the Los Angeles Junk Peddlers Protective Association).

Although patients came to the sanatorium from throughout the United States, the bulk of contributions during these early years came from Los Angeles, San Francisco, Detroit, Chicago and New York. San Francisco was one of the first to form an auxiliary. Organized in October of 1917, the auxiliary began the following year to raise funds for a building to be known as the San Francisco Building. In 1920, they sent \$4,000 – almost \$46,000 in today's money – to the sanatorium's building fund.

In subsequent years, the San Francisco Auxiliary continued to raise money for maintenance, new buildings and a sewage disposal system. San Francisco Auxiliary delegates also assisted with the merger of the Jewish Consumptive Relief Association and the Ex-Patients Home, believing that consolidation of the two Los Angeles-based organizations would offer optimal benefit for the treatment and support of patients with tuberculosis, and for prevention of the disease. CN

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Seattle Office 800-934-9196

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

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