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# CONQUEST

**GOING  
TOE-TO-TOE  
WITH  
TOBACCO**

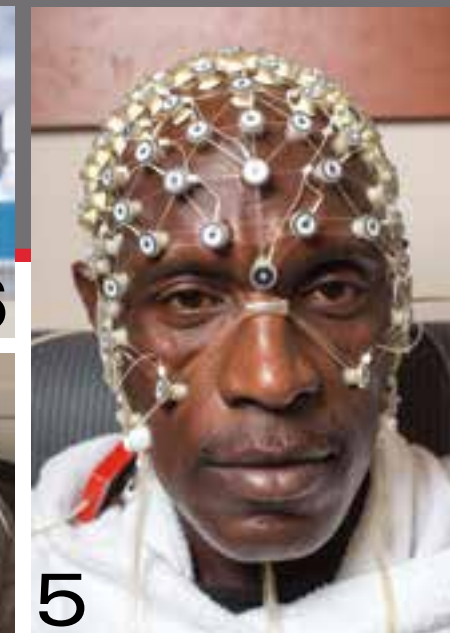
THE UNIVERSITY OF TEXAS  
MD Anderson  
Cancer Center

GLENN  
REYES  
PROFESSIONAL



# CONTENTS

CONQUEST SPRING 2014



## MISSION

The mission of The University of Texas MD Anderson Cancer Center is to eliminate cancer in Texas, the nation and the world through outstanding programs that integrate patient care, research and prevention, and through education for undergraduate and graduate students, trainees, professionals, employees and the public.

## VISION

We shall be the premier cancer center in the world, based on the excellence of our people, our research-driven patient care and our science.

We are Making Cancer History®.

## CORE VALUES

### Caring

By our words and actions, we create a caring environment for everyone.

### Integrity

We work together to merit the trust of our colleagues and those we serve.

### Discovery

We embrace creativity and seek new knowledge.



**On the cover: For years, MD Anderson faculty members have been in the ring, so to speak, fighting tobacco in an effort to end the cancers and preventable death that come with its long-term use.**

**by Wyatt McSpadden**



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## FEATURES

**5 WHERE THERE'S SMOKE, THERE'S IRE**  
Fifty years ago, the surgeon general's first report on smoking was published. Since then, MD Anderson has been steadfast in its fight to help people kick the habit and treat those who've developed cancer caused by smoking and secondhand smoke.

**12 A CHAMPION OF THE STRUGGLE**  
An open letter of thanks from MD Anderson President Ron DePinho, M.D., to former President Charles LeMaistre, M.D., a pioneer in the fight against tobacco.

**13 PAIN, PAIN, GO AWAY**  
For some patients, the hurting never stops. MD Anderson doctors are now working on ways to tailor pain management to each person's disease and genetic makeup.

**16 DRUG DELIVERS ON ITS PROMISE**  
FDA-approved ibrutinib is helping chronic lymphocytic leukemia patients forget they have the disease.

**20 AN IMAGING PROBLEM**  
Since the groundbreaking introduction of the computerized tomography scan in the 1970s, imaging technology has changed every phase of cancer care. But along with its increasing prevalence and accessibility, comes the danger of overuse.

**24 CONVENIENCE COMES STANDARD**  
For 20 years, the Jesse H. Jones Rotary House International has been providing unique hospitality and accessibility, in addition to all the amenities found in Marriott hotels, to MD Anderson patients.

**28 PRIME-TIME NETWORK**  
Eliminating cancer is going to require collaborations with doctors and hospitals around the world. Establishing and maintaining those connections are a big part of what the MD Anderson Cancer Network™ is all about. The man in charge, Thomas Burke, M.D., explains his vision for the future.

**32 STAYING CONNECTED**  
While undergoing cancer treatment, Caitlyn Mortus found that keeping in touch with her friends through social media helped her a lot. So she decided to do something to give other young patients access to that same "social healing."



**MD Anderson's award-winning Conquest magazine is available on the iPad.**

If you'd like to combine the layout and experience of the print version with the convenience of your tablet, the iPad version is for you. The free app can be downloaded from Newsstand or the iTunes App Store by searching "Conquest Magazine." After downloading the app, a free subscription banner will appear. Selecting this option will enable push alerts when a new issue is published.

Conquest also is available at [www.mdanderson.org/conquest](http://www.mdanderson.org/conquest).

# FRONTLINE

## A TALE OF TWO PROTEINS

Consider two drivers, each with a key that fits the same car. Driver 1 wants simply to turn on the ignition and leave the vehicle idling, ready and waiting to roll. Driver 2 wants to take it on a destructive joy ride.

Such is the case with two proteins identified by MD Anderson scientists that fit onto the same binding site of an important cellular growth factor receptor, called FGFR2, with starkly different results.

“There’s competition for binding to FGFR2, and one of the two competitors, phospholipase Cγ1 (Plcγ1), will increase cancer cell metastasis (spread). The other protein inhibits the opportunity for this to occur,” said John Ladbury, Ph.D., professor in Biochemistry and Molecular Biology.

Ladbury is senior author of a paper published online in January at Nature Structural & Molecular Biology that describes the competition and identifies Plcγ1’s role and its relationship to the metastasis-blocking growth factor receptor-bound protein 2 (Grb2).

In a 2012 paper in the journal Cell, Ladbury and colleagues showed that Grb2 binds to FGFR2 and holds it in check, ready to be activated by a growth factor to signal other proteins. In performing this role, Grb2 blocks the binding of other proteins such as Plcγ1.

The protein with the highest concentration levels in the cell wins the contest to bind to FGFR2, or fibroblast growth factor receptor 2, Ladbury said. “In cells with depleted Grb2 concentration, Plcγ1 gets on the receptor, increasing cellular motility — equipping cells to move, escape the tumor, invade other tissue and spread.”

Quantifying the relative concentration of these two proteins in a patient’s tumor, Ladbury said, might be developed into reliable markers for gauging the likelihood that the cancer will spread, and guide treatment decisions. — **Scott Merville**



**John Ladbury, Ph.D.**

## INVASIVE BLADDER AND BREAST CANCERS BEAR A MOLECULAR RESEMBLANCE

Researchers who took a fresh look at muscle-invasive bladder cancer through the lens of gene expression discovered that it looks remarkably like breast cancer. This resemblance has important implications for treating the most lethal form of bladder cancer.

MD Anderson scientists reported in the February edition of Cancer Cell that the gene expression profiles of advanced bladder cancer fall into three molecular categories that closely resemble three of the four major subtypes of breast cancer.



**David McConkey, Ph.D.**

“Several of our findings have immediate potential impact on how we address muscle-invasive bladder cancer with chemotherapy,” said study senior author David McConkey, Ph.D., professor in Urology.

“There are no targeted therapies for this high-grade cancer now, so a future implication of these findings is developing new, better approaches for treating our patients,” McConkey said. Characterization of breast cancer is more advanced, with targeted approaches available for three subtypes and chemotherapy advised for the fourth.

Muscle-invasive disease makes up about 30% of bladder cancer cases but causes the vast majority of deaths. It’s treated with chemotherapy, surgery and radiation. About 15,000 Americans will die of the disease this year. — **Scott Merville**

## SENSOR-BASED TECHNOLOGY BENEFITS BOTH PATIENTS AND CLINICIANS

A new feasibility study that followed head and neck cancer patients undergoing radiation treatment revealed home-based sensors can effectively monitor patients for early signs of dehydration — a common yet dangerous side effect that often occurs during the six- to eight-week recovery phase after radiation treatment.

The lead investigator on the study, Susan Peterson, Ph.D., said patients receiving radiation treatment often have difficulty swallowing because of decreased saliva production and mucositis — inflamed mucus membranes, which are common for head and neck cancer patients.

“Because eating and drinking can be very painful, most patients don’t get enough food and fluids,” Peterson said. “Once the onset of dehydration manifests, it not only can derail recovery, it can lead to other dangerous conditions, including long-term risks with swallowing.”

Using a software-based platform called CYCORE (Cyberinfrastructure for Comparative Effectiveness Research), researchers monitored the weight, blood pressure and daily food and drink intake of 48 head and neck cancer patients at home during two five-day periods. Participants also used smartphones to report pain levels when swallowing and other side effects.

The study showed 60% of patients had at least one event that would suggest dehydration risk; 35% had two or more events. More than 90% of patients found home monitoring didn’t pose a challenge during treatment.

“The data shows that monitoring a patient’s progress from home is convenient and beneficial for both the clinician and the patient,” said Peterson. — **Katrina Burton**



**Susan Peterson, Ph.D.**

## THE WRITE STUFF IMPROVES OUTCOMES

In the largest expressive writing trial conducted on an oncology population, MD Anderson researchers found that patients who recorded their deepest thoughts and emotions saw improved physical function and quality of life.

The study, published in the Journal of Clinical Oncology, and led by Lorenzo Cohen, Ph.D., enrolled 284 patients diagnosed with stage I-IV renal cell carcinoma from 2006-09.



**Lorenzo Cohen, Ph.D.**

Participants were randomly assigned to either a neutral writing group (NW) or an expressive writing group (EW). Neutral writing included general thoughts about dietary behaviors, sleep and attitudes toward smoking, whereas expressive writing focused on a patient’s deepest personal thoughts. Patients in both groups were prompted to write on four separate occasions.

Both groups completed a series of questionnaires measuring intrusive thoughts, cancer-related symptoms, fatigue, depressive symptoms, sleep disturbances and overall quality of life.

Follow-ups were conducted one, four and 10 months after the writing intervention. Ten months later, when the most pronounced group differences occurred, cancer-related symptoms were significantly lower for those in the EW group than the NW group, and the EW group reported better physical functioning aspects of quality of life.

Fatigue levels also were moderately lower for those in the EW group compared to the NW group. At the one-month follow-up point, the data revealed patients in the EW group reported fewer intrusive thoughts compared to patients in the NW group, which is what led to improvements in cancer-related symptoms and fatigue levels at 10 months. — **Will Fitzgerald**

## DRUGS TEAM UP TO HIT TUMORS, BOOST IMMUNE SYSTEM ATTACKS

One drug attacks tumor cells directly; the other treats the immune system by taking the brakes off T cell response. Together, they put half of the patients with relapsed follicular lymphoma into complete remission in a phase II clinical trial at MD Anderson.



**Sattva Neelapu, M.D., Ph.D.**

“Most drugs target only the tumor. This combination is complementary, treating both the lymphoma cells directly and the T cells in a manner that activates them against cancer cells,” said Sattva Neelapu, M.D., Ph.D., associate professor in Lymphoma/Myeloma at MD Anderson and senior author of the paper that appeared in The Lancet Oncology.

“The combination of the established antibody drug rituximab with the experimental drug pidiizumab so far also has a remarkably mild side-effect profile,” Neelapu said.

Of 29 study participants at a median follow-up of 15.4 months, 19 (66%) had either a complete or partial response, with 15 (52%) having a complete response.

There were no grade 3 or 4 adverse events, with all effects at the less serious grade 1 and 2 levels. Patients had no indicators of autoimmunity, which can be an issue in the class of drugs that blocks immune system checkpoints and activate T cells. Such mild effects are particularly important for follicular lymphoma patients, who, on average, are diagnosed with the disease at age 60. — **Scott Merville**

## BLOOD TEST MAY ONE DAY REVEAL CANCER

Some surprising research findings from MD Anderson scientists suggest it’s possible a simple blood test could be developed to determine whether gene mutations associated with pancreatic cancer exist without needing to locate and test tumor tissue.

This appears possible following the discovery that tiny particles called ‘exosomes,’ which are shed by cancer cells into the blood, contain the entire genetic blueprint of those cells. By decoding this genomic data and looking for deletions and mutations associated with cancer, the research team — led by Raghu Kalluri, M.D., Ph.D., chair of Cancer Biology — believes the discovery could lead to a test that helps physicians detect cancer and treat patients.

Historically, researchers knew these minuscule particles existed and that they carried nucleic acids and proteins. It was also believed that exosomes carried small portions of the person’s DNA. However, upon further investigation, the team found that a person’s entire double-stranded genomic DNA, spanning

all chromosomes, can be found in exosomes, including those mutated chromosomes that cause various cancers. Furthermore, Kalluri and his colleagues discovered that DNA derived from exosomes carried the same cancer-related genetic mutations compared to the cancer cells taken from the tumor.

“Because different forms of cancer are associated with different chromosomal mutations, we believe analysis of exosome DNA taken from blood samples may not only help determine the presence of a cancerous tumor somewhere in the body, but also identify mutations without needing a tumor sample,” Kalluri said. “We also believe this ‘fingerprint’ will help lead us to the likely site of the tumor in the body. — **Jim Newman**



**Raghu Kalluri, M.D., Ph.D.**



## MD Anderson isn't pulling any punches in its fight to put smoking down for the count

# PLANS TO KNOCK OUT TOBACCO

by Katrina Burton

Smoking reached the height of its popularity in the United States in the mid-1950s. In those days, it was considered something of a national pastime, like baseball. In fact, stars of the game such as Mickey Mantle, Joe DiMaggio, Ted Williams and Willie Mays all appeared in cigarette ads.

As early as 1951, research in Great Britain tied smoking to lung cancer, yet it was still seen by many as a glamorous, sophisticated, even harmless, thing to do. And it was inescapable. People smoked everywhere — on airplanes and subways; in offices, sports stadiums, movie theaters and hospitals; as well as in their homes, unknowingly exposing loved ones to harmful secondhand smoke.

Tobacco companies such as R.J. Reynolds countered growing concern about the dangers of smoking with ads for Camel brand cigarettes featuring the tagline “More doctors smoke Camels.” Other ads included professional athletes claiming “They don’t get your wind.”

But the smoke screen dispersed in 1964 with the release of the first Surgeon General’s Report on Smoking and Health. The landmark document, informed by more than 7,000 scientific articles, definitively linked smoking to lung cancer and other pulmonary diseases. In the words of then-U.S. Surgeon General Terry Luther, M.D., the report “hit the country like a bombshell. It was front page news and a lead story on every radio and television station in the (nation).” And it snapped the country to attention about the dangers of combustible tobacco.

“There’s been no other government action taken that has impacted tobacco control more than the release of the first U.S. surgeon general’s report,” says Ernest Hawk, M.D., vice president of MD Anderson’s Cancer Prevention and Population Sciences. The division is dedicated to eliminating cancer health disparities through research, patient care, education and control.





In the past, tobacco companies employed marketing tactics that included paying celebrities such as “I Love Lucy” stars Desi Arnaz and Lucille Ball (above) and Bob Hope to endorse their cigarettes. Facing page: When concerns about the dangers of smoking began to mount, advertisements that suggested doctors trusted one brand over another appeared. credit: trinketsandtrash.org

Some, such as Harvard historian Allan Brandt, contend the reverberations of the report’s impact have been felt far beyond smoking. Brandt told National Public Radio earlier this year, “If we look at the history of public health — from the safety of cars and roads, other dangerous products, the environment, clean air, the workplace — all of these issues really have their origins in a moment 50 years ago around the first surgeon general’s report.”

Luther convened a panel of medical academics to prepare the document. Its youngest member, Charles LeMaistre, M.D., later went on to serve as MD Anderson’s second full-time president (1978-1996). LeMaistre and his colleagues revealed the startling reality of smoking’s harmful effects at a time when nearly 45% of the population smoked.

The report linked smoking to 11 different types of cancer, chronic lung disease and heart disease. Today, it’s associated with 15 different cancers, including liver and colorectal cancers, which were added to the list in the 2014 version, the Health Consequences of Smoking — 50 Years of Progress: A Report of the Surgeon General.

Back in 1964, the report sparked debate and led to progressive action. Alerted to the dangers of tobacco, public opinion was swayed. Its details revealed the need for a cultural transformation among a population that for decades was socially encouraged to smoke. When reality set in, public policy was spawned and the slow but steady progression toward ending tobacco began.

Within months of its release, the Federal Trade Commission ordered tobacco companies to place a warning label on their products. By 1970, President Richard Nixon had signed the Public Health Cigarette Smoking Act, banning all television and radio cigarette advertisements.

### Bold advances in tobacco control

Over the years, there’s been a long line of victories and milestones in tobacco control. A recent study in the Journal of the American Medical Association estimated 8 million U.S. lives have been saved through efforts that were a direct result of the first report.

Actions such as the 2010 Affordable Care Act have helped remove barriers to tobacco users by eliminating co-pays for screening services and expanding tobacco cessation benefits. The act also established the Prevention and Public Health Fund to prevent and reduce tobacco use. In addition, the Food and Drug Administration (FDA) recently updated regulations restricting the sale and distribution of cigarettes and smokeless tobacco to children and adolescents, making tobacco products less accessible to minors.

In February, the FDA launched “The Real Cost,” a five-year, \$600 million national public education campaign to prevent tobacco use among minors. And the Centers for Disease Control and Prevention recently released an updated edition of its guide to Best Practices for Comprehensive Tobacco Control Programs to help states develop more effective tobacco programs.

Also on the heels of the 50-year progress report, one of the largest drugstore chains in America, CVS Caremark, announced in February its plan to eliminate the sale of tobacco in its 7,600 stores by Oct. 1.

“We hope other retailers will take similar actions,” Hawk says. “Our goal is to ensure people stop smoking, make sure kids don’t start and make tobacco less attractive to everyone. Actions like this are a good start.”

### Leading the effort

Ellen R. Gritz, Ph.D., chair of Behavioral Science at MD Anderson, has played a role in many major tobacco milestones. Gritz, who contributed to the 1980 Surgeon General’s Report on Women and Smoking, explains that over the years MD Anderson has mirrored the high standards set by the report through the institution’s tobacco control efforts.

“We have a profound tobacco cessation program available free to patients, employees and their families,” Gritz says. “We also are targeting children, adolescents and young adults through tobacco prevention programs and mobile apps designed specifically for the young.”

In 1989, MD Anderson was one of the first hospitals to become smoke-free. The institution has developed multidisciplinary care to treat lung cancer patients and established programs to combat the disease and other cancers associated with smoking.

In addition, it has focused research on discovering the best ways to help people quit smoking or never begin in the first place. Last year, the institution’s behavioral scientists developed and released Tobacco-Free Teens, an app designed to help teenagers.

Researchers are taking anti-smoking programs into schools and into the community, zeroing in on “at risk” populations such as the underserved and mentally ill, while collaborating with other health care systems and policy



Though they smoke less, today’s smokers have an even greater risk of developing lung cancer than those in 1964. Changes in cigarette design, such as ventilated filters, increase smokers’ risk of the cancer because they allow for more vigorous inhalation, drawing carcinogens in cigarette smoke deeper into lung tissue.

## It’s quitting time. Here’s some help

Anyone addicted to nicotine knows that giving up smoking — or any tobacco habit — isn’t easy. Damon Vidrine, Dr. P.H., an associate professor in Behavioral Science, offers these tips to help people succeed in quitting.

### Before quitting

1. Set a target quit date. It may help to choose a meaningful day such as a birthday, anniversary or holiday.
2. Preparation before attempting to quit can be crucial.
  - Throw away cigarettes, ashtrays and lighters.
  - Thoroughly clean your home and car.
  - Identify several coping strategies (taking a walk, snacking on carrot sticks, using sugar-free mints) that appeal to you. These coping strategies will help you handle nicotine withdrawal.
3. Make a list of the reasons you want to quit. You can refer to this list later when you feel the urge to smoke.
4. Tell your friends and family that you’re trying to quit. Positive social support can be tremendously helpful.

### After the quit day

- Avoid situations in which you would normally smoke or would be tempted to smoke.
- Use the coping strategies that you’ve already identified. You can also try to use incompatible behaviors such as brushing your teeth or drinking water.
- If you find yourself in a tempting situation, escape. It’s OK to acknowledge that some situations are too tempting soon after quitting.

Use FDA-approved pharmacotherapy. There are several drugs on the market that can greatly improve your chances of successfully quitting. Some, such as nicotine patches, nicotine gum and nicotine lozenges, are available over the counter. Others, like varenicline and bupropion, are only available by prescription. They’re all effective if used as directed.

makers. The institution's combined efforts through the Cancer Prevention and Control Platform support MD Anderson's Moon Shots Program — an aggressive 10-year push to drastically decrease cancer deaths.

Later this year, prevention leaders will hold the first Texas Tobacco Summit with plans to announce EndTobacco, a comprehensive initiative to combat tobacco use. Through actions in policy, education and community services, the program potentially will help eliminate tobacco use in organizations and communities across Texas, the nation and around the world.

**What still needs to be done**

Even with the noted successes in tobacco control over the years, smoking continues to be the leading cause of preventable death in the U.S. Tobacco is linked to 87% of lung cancer deaths and one in three cancer deaths. Each year, 70% of smokers attempt to quit (see "It's quitting time" on Page 7).

"More than 40 million people still smoke in this country, and that's a problem," says Lewis Foxhall, M.D., vice president for Health Policy at MD Anderson. "Although we've seen a lot of movement recently and over the years in tobacco control, there's still much work to do."

MD Anderson has made tobacco control an institutional public health priority with renewed efforts. According to Gritz, winning the battle necessitates an investment in basic, clinical and population-based research commensurate with the economic, medical and societal burden of diseases caused by tobacco use.

"We need targeted research to improve and refine prevention approaches for children and youth. We need pharmacologic and behavioral interventions promoting tobacco cessation with an increased, more uniform access and application in health care," Gritz says. "Research on other underserved groups and populations also is critical."



**Jennifer Ng, Behavioral Science laboratory technician, places a geodesic sensor net on James Verdine, a member of the smoking cessation study Project ACTION at MD Anderson. Behavioral Science also developed the Tobacco Treatment Program, which offers tobacco cessation services, including in-person behavioral counseling and several tobacco cessation medication treatments, at no cost to patients, employees and their families. © Wyatt McSpadden**

**Clearing the air about e-cigarettes**

By Katrina Burton

With the rise in popularity of electronic cigarettes, a once declining — and reviled — industry is making a comeback.

Featuring flashy packaging and popular flavors such as vanilla, cherry and piña colada, e-cigarettes are marketed as a "safe" alternative to cigarettes. How they work: Heated by a battery-operated device, liquid nicotine is turned into an inhalable smokeless vapor. They deliver an unregulated amount of nicotine — a highly addictive chemical — in every puff.

"The absence of smoke, which is replaced by the odorless vapor, gives smokers a false sense of security that there's less risk involved with using e-cigarettes, known as vaping," says Paul Cinciripini, Ph.D., a behavioral scientist at MD Anderson and director of its Tobacco Treatment Program. "Because e-cigarettes aren't regulated by the Food and Drug Administration (FDA), we have no evidence to prove they're safe."

"Unbiased studies must rigorously investigate e-cigarettes because, if these products are regulated and their safety is ensured, there's considerable potential benefit for nicotine addicts," he says.

The average smoker attempts to quit at least seven times during his or her lifetime. And for the more than 42 million smokers in the United States, promoting e-cigarettes as a safer alternative may ignite a temptation for those trying to quit. It may also send the wrong message about the dangers of smoking to those who still smoke or possibly become a gateway to smoking for young people.

Currently, more than 3 million middle and high school students and one in four high school seniors in the U.S. smoke. The U.S. Department of Health and Human Services estimates that if more isn't done to stop the epidemic, 5.6 million children eventually will die prematurely from tobacco-related diseases.

"Passing e-cigarettes off as safe and harmless not only is misleading, it's irresponsible," says Alexander Prokhorov, M.D., Ph.D., a tobacco

prevention behavioral scientist at MD Anderson and director of the Tobacco Outreach Education Program. "Tobacco companies are well aware that kids are impressionable, and glamorizing 'vaping' as the new thing to do will lure a younger generation of smokers along with a new adult population of smokers."

A recent study conducted by the Centers for Disease Control and Prevention showed e-cigarette use among middle and high school students more than doubled between 2011 and 2012. "This should be a major red flag to everyone because nicotine is very addictive and most smokers start the habit before the age of 18," Prokhorov adds.

At this time, there are no regulations to stop e-cigarette advertisements on TV, and manufacturers are adopting marketing tactics from long ago, such as paying celebrities to endorse their products. The distribution and promotion of e-cigarettes likely will continue to increase as big tobacco companies such as Lorillard (Newport), Altria (Marlboro) and Reynolds American Inc. (Camel) enter the market.

With these developments and the surge in use — an estimated jump in sales from \$500 million in 2012 to \$1.5 billion in 2013 — tobacco cessation experts Cinciripini and Prokhorov see an urgent need to regulate the product before more smokers become lifelong addicts.

"It's encouraging that the FDA recently announced plans to include e-cigarettes as part of the tobacco products it regulates," Cinciripini says.



**Taking a page from the history books, e-cigarette manufacturers are using film stars such as Stephen Dorff in advertisements. credit: trinketsandtrash.org**

**We've come a long way, baby.**

**1964** Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service is published. The report, the surgeon general's first on smoking, concludes smoking cigarettes causes lung cancer and other diseases. Charles LeMaistre, M.D., president of MD Anderson from 1978-1996, served on the advisory committee.

**1966** In response to congressional legislation, health warnings are printed on cigarette packs that read, "Caution: Cigarette Smoking May Be Hazardous to Your Health."

**1970** Congress passes legislation banning radio and television cigarette advertising.



**U.S. Surgeon General Luther Terry answers questions during a news conference in January 1964, following the release of his landmark report. Behind him on stage are members of his advisory committee, including Charles LeMaistre, M.D.**



**1972** Environmental tobacco smoke (ETS) is identified as a health risk to nonsmokers in the Surgeon General's The Health Consequences of Smoking.

**1975** The Minnesota Clean Indoor Air Act, which requires designated smoking areas in public places, takes effect.

**1975** The Army and Navy stop including cigarettes in service members' rations.

**1980** MD Anderson's Ellen R. Gritz, Ph.D., contributes to the Surgeon General's Report on Women and Smoking.

**1981** LeMaistre serves as chair of the National Conference on Smoking or Health.

**1985** LeMaistre serves as chair of the International Summit of Smoking Control Leaders.

**1986** LeMaistre serves as president of the American Cancer Society.

**1988** A ban on smoking aboard commercial airline flights lasting two hours or less takes effect.

**1988** The surgeon general concludes that nicotine is addictive in The Health Consequences of Smoking: Nicotine Addiction.

# “What’s next in the fight against tobacco?”

That’s the question we asked some of MD Anderson’s experts on tobacco control. Here’s what they told us ...



**Alexander Prokhorov, M.D., Ph.D.**  
*Professor in Behavioral Science*

Fifty years ago, cigarettes dominated the market. Now we’re also dealing with a wide variety of new products — e-cigarettes, snus (moist tobacco placed under the upper lip that doesn’t require spitting) and hookahs (water pipes) — that often are marketed as ‘safe.’ Impactful and sustainable educational programs need to be designed, tested and broadly implemented so that the public, especially young people, understand the consequences of using both conventional and new products.



**Ellen R. Gritz, Ph.D.**  
*Chair of Behavioral Science*

What’s needed most is a comprehensive and concentrated approach to tobacco use. Among other things this approach would include attention to disparities in underserved groups such as the poor, less educated, and those with mental health and substance abuse diagnoses. We need greater state funding of tobacco prevention and cessation programs (from monies provided by the settlements with the tobacco industry). And the “will” of city, state and federal legislators to impose significantly higher taxes on any form of tobacco use.



**Mark Moreno**  
*Vice president for governmental relations*

Over the past 50 years, health care and community advocates and policy makers have made significant progress toward reducing the tremendous burden of tobacco-related diseases through legislative and regulatory policy changes (i.e., high excise taxes on tobacco products, stringent marketing restrictions). While comprehensive approaches such as statewide smoke-free legislation are sometimes resisted, the advocacy community has persisted with success by adopting local ordinances. Eliminating tobacco-related illnesses will require even more creative and tireless efforts such as these.



**Lewis Foxhall, M.D.**  
*Vice president for health policy*

Over the past 50 years, smoking rates have been cut in half, but we need to take what we’ve learned and act now to protect the next generation from the illness and suffering that are completely preventable.



**Maher Karam-Hage, M.D.**  
*Associate professor in Behavioral Science*

I hope we can see an end to smoking very soon. It shortens life by about 10 years. However, quitting by age 40 can reduce that by 90%. Even quitting by age 60 can reduce those 10 years by half. Today we have excellent treatments for those who want to quit. We have new and safer ways of delivering nicotine to those who are addicted and can’t quit smoking.



**Ernest Hawk, M.D.**  
*Vice president and head of Cancer Prevention and Population Sciences*

“Progress” is no longer our primary goal. We’re striving for a cultural transformation that promotes the health and wellness of our entire community. In that vision, tobacco has no place. This will be achieved through the prioritization of the public’s health; commitment to collaborations; implementation of comprehensive, evidence-based actions; and compassionate assistance for tobacco users who want to stop.



**Paul Cinciripini, Ph.D.**  
*Professor in Behavioral Science*

Improve tobacco control by bolstering the FDA’s newly acquired regulatory authority over tobacco products with empirical research and, most importantly, convince government leaders to extend this authority to all products that contain nicotine, including e-cigarettes. We need to extend our treatments to the most vulnerable in our population, including the disadvantaged and underserved and particularly people with mental health and substance abuse problems.



**Ron DePinho, M.D.**  
*MD Anderson president*

Of the 94 million former and current smokers, 88% started smoking as children. But I’m energized by the traction we’ve gained on numerous fronts. Thanks to our philanthropy-supported Moon Shots Program, we have organized an aggressive, wide-ranging tobacco control effort encompassing a unique institutional initiative, EndTobacco, which spans childhood prevention programs, adult cessation services and public education and policy collaborations. We’ll build on the momentum gained in recent years to further reduce access to and interest in tobacco products while further empowering current tobacco users to quit for good.



**David Wetter, Ph.D.**  
*Chair of Health Disparities Research*

Given that smoking has become increasingly concentrated in populations with low socioeconomic status, new interventions and policy initiatives must concentrate on reaching these underserved populations.



**Jennifer Irvin Vidrine, Ph.D.**  
*Associate professor in Health Disparities Research*

People with limited economic resources are vulnerable and more likely to smoke and tend to have greater difficulty quitting. We need to focus our efforts on treating them.



**1990** Smoking on all domestic flights is banned.

**1992** ETS is classified as a “Group A” carcinogen by the Environmental Protection Agency.

**1993** Smoking is banned in the White House.

**1994** MD Anderson becomes one of the few U.S. academic medical centers to adopt a policy prohibiting the receipt of tobacco money for research funding.

**1994** Mississippi sues the tobacco industry to recover Medicaid costs for tobacco-related illnesses.

**1996** Texas sues the tobacco industry in Federal court. MD Anderson tobacco experts advise the state attorney general.

**MD Anderson**  
**ASPIRE**  
A Smoking Prevention Interactive Experience

**2000** Funds from the National Cancer Institute and the George and Barbara Bush Endowment for Innovative Cancer Research help MD Anderson establish ASPIRE (A Smoking Prevention Interactive Experience). ASPIRE is an evidence-based, multimedia tobacco prevention and cessation program for middle and high school students.

**2006** MD Anderson launches the Tobacco Treatment Program, a free tobacco cessation program for patients and their family members, with funding from the Texas Settlement Lawsuit.

**2007** MD Anderson joins the Smoke-free Houston Coalition, which results in the passing of an ordinance to make all Houston workplaces and public spaces smoke-free.

**2008** MD Anderson establishes the Duncan Family Institute for Cancer Prevention and Risk to study how to predict and reduce cancer risk. Tobacco research is a major focus of the institute.

**2009** President Obama signs legislation granting the FDA regulatory authority over tobacco products.

**2010** Marketing restrictions on tobacco products take effect, specifically for those targeting youth. Cigarette companies are prohibited from using “light,” “low” and other misleading health descriptors.

**2010** President Obama signs legislation that includes provisions to expand tobacco cessation benefits and establishes the Prevention and Public Health Fund to prevent and reduce tobacco use.

**2012** Launch of the Moon Shots Program, an unprecedented effort to dramatically accelerate scientific discoveries into clinical advances that reduce cancer deaths. Lung cancer is one of the initial cancers targeted by the program.

The following is an open letter to Charles LeMaistre, M.D., MD Anderson's second full-time president, from Ron DePinho, M.D., the current president.

Dear Dr. LeMaistre,

On this historic anniversary, I'm writing to thank you for delivering a wake-up call to Americans. I'm referring to **your role in the 1960s**<sup>1</sup> on the U.S. surgeon general's panel to investigate the health impacts of smoking. The result of your work — the first U.S. Surgeon General's Report on Smoking and Health — transformed America's view of cigarettes.

As of February, that report is 50 years old, but like many of your cancer-fighting efforts, its impact not only is still felt, it continues to grow.

The report led to **mandatory safety labeling**<sup>2</sup> on tobacco products and a **ban on all radio and TV cigarette ads**<sup>3</sup>. Most importantly, its ripple effect led to **a significant decline in the number of smokers**<sup>4</sup> in America. As of today, that rate has been cut in half. Sadly, smoking remains our country's **leading cause of preventable deaths**<sup>5</sup>. Approximately 440,000 Americans die each year because of **smoking-related diseases**<sup>6</sup>. It's also linked to approximately 30% of all cancer-related deaths and nearly 90% of lung cancer deaths.

To this day, your vision, passion and commitment to end cancer resonate strongly in the halls of MD Anderson. Most notably, your unwavering focus on combatting cancer caused by smoking has become one of the pillars of our mission. It's reflected in our past, present and future efforts.

In the years since your presidency, our faculty has carried on your legacy. They've assisted the surgeon general with several follow-up reports on smoking. Our research has remained focused on developing new interventions, including the prescriptions that **help smokers quit**<sup>7</sup>. As you know, smoking is a complex issue, but our measures of success remain remarkably simple: **longer lives**<sup>8</sup> and more time with loved ones.

But we must do more, as I'm sure you would agree.

We have to fight cancer on several fronts: We need improved treatments and better diagnostic methods aimed at catching cancer early.

We need to educate and empower people to change their lifestyles to prevent cancer altogether. That's why we established the Duncan Family Institute for Cancer Prevention and Risk — stemming from prevention efforts you first launched. Through this work, we're identifying the best methods for **convincing future generations to avoid tobacco products**<sup>9</sup>. We're using that knowledge to develop programs such as ASPIRE, a school curriculum taught in classrooms across Texas and several other states to keep cigarettes out of the hands of kids.

We plan to go even further. In a few short months, as part of our Moon Shots Program, MD Anderson will unveil the EndTobacco plan. We're doubling down efforts to snuff out smoking in Houston, Texas and as far beyond as we can reach.

But we can't do it alone. We need lawmakers to write new legislation aimed at making cigarette use a thing of the past. We need increased access to cancer screenings, particularly in underserved communities where tobacco use is high.

We need greater involvement in our classrooms. Approximately **82% of adult smokers began smoking as children**<sup>10</sup>. Most importantly, we need parents to join the fight. As a parent of three, I refuse to accept the idea that our children, and perhaps even their children, should be forced to witness the tragic yet entirely preventable cost of **diseases caused by smoking**<sup>11</sup>.

Finally, as one of the institutions leading the cancer fight, we must set an example. Years ago, we were proud to be the first major comprehensive cancer center in the country to become smoke free. In the future, we must continue to promote healthier lifestyles for our employees and volunteers.

You have left us an unprecedented legacy, and I am honored to follow in your footsteps. As the current MD Anderson president, I pledge to help finish the remarkable journey the surgeon general, you and your colleagues began five decades ago.

Let's hope that together we can extinguish smoking before another 50 years have passed.

Ron DePinho, M.D.  
President  
The University of Texas MD Anderson Cancer Center

1. *Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service was published in 1964. LeMaistre served on the advisory committee.*

2. *In response to congressional legislation, beginning in 1966, health warnings are printed on cigarette packs that read, "Caution: Cigarette Smoking May Be Hazardous to Your Health."*

3. *In 1970, Congress passed legislation banning cigarette advertising on radio and television.*

4. *Since 1964, the percentage of Americans who smoke has dropped from 42% to 18%.\**

5. *Smoking remains the largest cause of preventable disease and death in the U.S.*

*20 million Americans have died because of smoking in the 50 years since the surgeon general's first report.*

*2.5 million of those deaths are nonsmokers who died from diseases caused by secondhand smoke.\**

6. *More than 440,000 deaths annually, including deaths from secondhand smoke.*

*Each year, nearly 50,000 deaths are caused by secondhand smoke.*

7. *Nicorette became available by prescription in 1984. Over the counter sales of nicotine patches and gums were launched in 1996.*

8. *On average, nonsmokers live 10 years longer than smokers. That's 3,650 days. That's 87,600 hours.\**

9. *If current rates continue, 5.6 million Americans younger than 18 who are alive today are projected to die prematurely from smoking-related disease.\**

10. *In the U.S., 3 million middle and high school students smoke.\**

11. *Smoking causes:*

*32% of coronary heart disease deaths*

*79% of chronic obstructive pulmonary disease*

*Colorectal and liver cancer (and increases the failure rate of cancer treatment), diabetes, rheumatoid arthritis, immune system weakness, impaired fertility and erectile dysfunction.\**

\*The Health Consequences of Smoking — 50 Years of Progress: A Report of the Surgeon General, 2014

# The pain won't stop, but it won't stop her. Healed, but hurting

By Julie Penne  
Wyatt McSpadden







## Angela Pace believes she's earned the right to call herself a survivor.

**T**he 27-year-old lived through a rare cancer that only one other person is known to have survived. She's also lived most of her life with constant and severe pain.

Today, the cheery young woman from Nacogdoches, Texas, is cancer free and her pain is under control.

Pace's long journey of faith and fortitude, care from myriad MD Anderson specialty teams and her family's support has led her to where she is today: teaching music to preschoolers and attending school and church activities regularly and enthusiastically. She also enjoys being the best aunt possible to her three active nieces and nephews and looking ahead to a bright future for which she's always prayed.

When Pace was diagnosed at age 3 with ganglioglioma — a rare, slow-growing tumor — in her spine, her parents were told their toddler had only two months to live. Even as a tyke, Pace fought hard through years of chemotherapy that resulted in painful peripheral neuropathy — chemo-induced nerve pain — so severe that even a bed sheet touching her feet felt like stabbing pins and needles.

She also underwent radiation that would later lead to another cancer. At 17, Pace was diagnosed with osteosarcoma, a bone cancer that had to be treated with multiple major surgeries to rebuild her pelvis, hips and back. The second diagnosis meant months of chemo and rehabilitation to learn to walk again — and more pain.

"Looking back on my twenty-some years at MD Anderson, I spent as much time going to appointments that addressed my pain as my cancer," she says. "It's important to not give up, to try different things until something works for you. I'm living proof."

Not only is Pace an example of persistence and optimism, she's a study in the evolution of pain management and its wide range of options. Her experience underscores the importance of seeing

specialists who work in an integrated and collaborative program.

Over the years, Pace has had several nerve blocks, Botox injections in her legs and back for spasms, radiofrequency treatments and almost nonstop prescriptions for potent painkillers.

Recently, she had a pain pump inserted into the intrathecal space around her spinal cord by Brian Bruel, M.D., a device she controls through a handheld remote. Pace can use the pump, which works like an epidural, up to four times a day to better control her pain. She sees Bruel every three months to refill and charge the computerized device.

"My pain isn't completely gone, but the pump has helped it tremendously, keeping me in the classroom with my students and living my life," she says. "I also use other nonprescription techniques to help me 'zone out' of the pain. You can't let the pain take over, but it can be difficult sometimes."

Bruel, an assistant professor in Pain Medicine, agrees with his patient about the range of options and not giving up.

"There are many ways to treat pain, and it's important to understand where the pain is originating, why it's occurring and if it's signaling a recurrence or spread of disease. But also important is the impact it has on a patient's treatment, life, outlook and relationship with their family," Bruel says. "Our goal is always to see a patient as soon as they begin to develop symptoms because, like their cancer, that's when we have the most options and greatest chance for success. Plus we know that if we can control a patient's pain, they're more likely to do well with treatment."

**There's hope that there may be an established biological marker to target for chronic pain, just as there are treatment targets for so many types of cancer now.**

Working closely with Bruel and others in the Pain Management Center is psychologist Diane Novy, Ph.D., who sees up to 10 patients a day. They talk about how their pain is affecting their lives and families, not just their treatment. She also sees survivors still impacted by pain and patients facing end-of-life decisions.

Novy, a professor in Pain Medicine, says cancer pain is unlike any other pain because it's often linked with uncertainty, fear of recurrence or progression of disease, loss of control and death. Pain can be associated with or magnified by depression and anxiety, so she works closely with patients and families to understand the influence it may have on a patient's daily life and their relationships.

"Pain is as individual as each person and each patient's cancer experience," Novy says, who's been a part of the pain management team since 2001. "It's vital that our team understands not just the physical aspects of a patient's pain but the psychological elements as well. We talk so much about treating the whole patient at MD Anderson, and this is a great example of that philosophy."

Among the many issues Novy, Bruel and their colleagues clue into are the fears patients and survivors may have about the long-term use of a class of prescription painkillers known as opioids. Last fall, the Food and Drug Administration (FDA) proposed new restrictions on the most commonly prescribed opioids.

"It's vital that patients in pain from cancer or its treatment see a pain specialist," says Salahadin Abdi, M.D., Ph.D., chair of Pain Medicine. "We agree with the FDA that there should be greater regulation of these potent painkillers. That said, it's also important that patients who are under the care of proper specialists, and who need these medications, have access to them."



**After years of cancer treatment and constant pain, Angela Pace is enjoying a life that includes teaching music to children.**

For now, pain specialists match the right patient with the right pain management option at the right time by communicating openly, sharing information and using clinical expertise. However, that could change. In the years to come, with the introduction of personalized medicine, pain management could be more tailored to each patient's disease and genetic makeup, in the same way much of cancer care is today.

Research in this area is just beginning, but there's hope there may be an established biological marker to target for chronic pain, just as there are treatment targets for so many types of cancer now.

It's one of many areas that Abdi is eager to explore with colleagues as part of an expanded research agenda for his group.

According to Abdi, previous research shows there are a number of genes affected by injury, inflammation and/or nerve damage. If those markers can be pinpointed, there may be better opportunities to predict which drugs or therapies are most effective for each person's pain.

"We're moving into this exciting new era of genetics and pharmacogenomics in pain management, and we're just starting to understand the many possibilities," he says. "MD Anderson is the ideal place to explore and apply the science behind pain because we have the expertise, resources, spirit of collaboration and patient focus."

Abdi and his colleagues also are pursuing research on the use of nanotechnology to deliver some anesthetics directly to a pain site. And there are early studies underway looking at how free radical scavengers may be used to alleviate pain in patients who have neuropathy.

**Salahadin Abdi, M.D., Ph.D., and his colleagues hope to develop pain management based on research that shows genes are affected by injury, inflammation and/or nerve damage.**

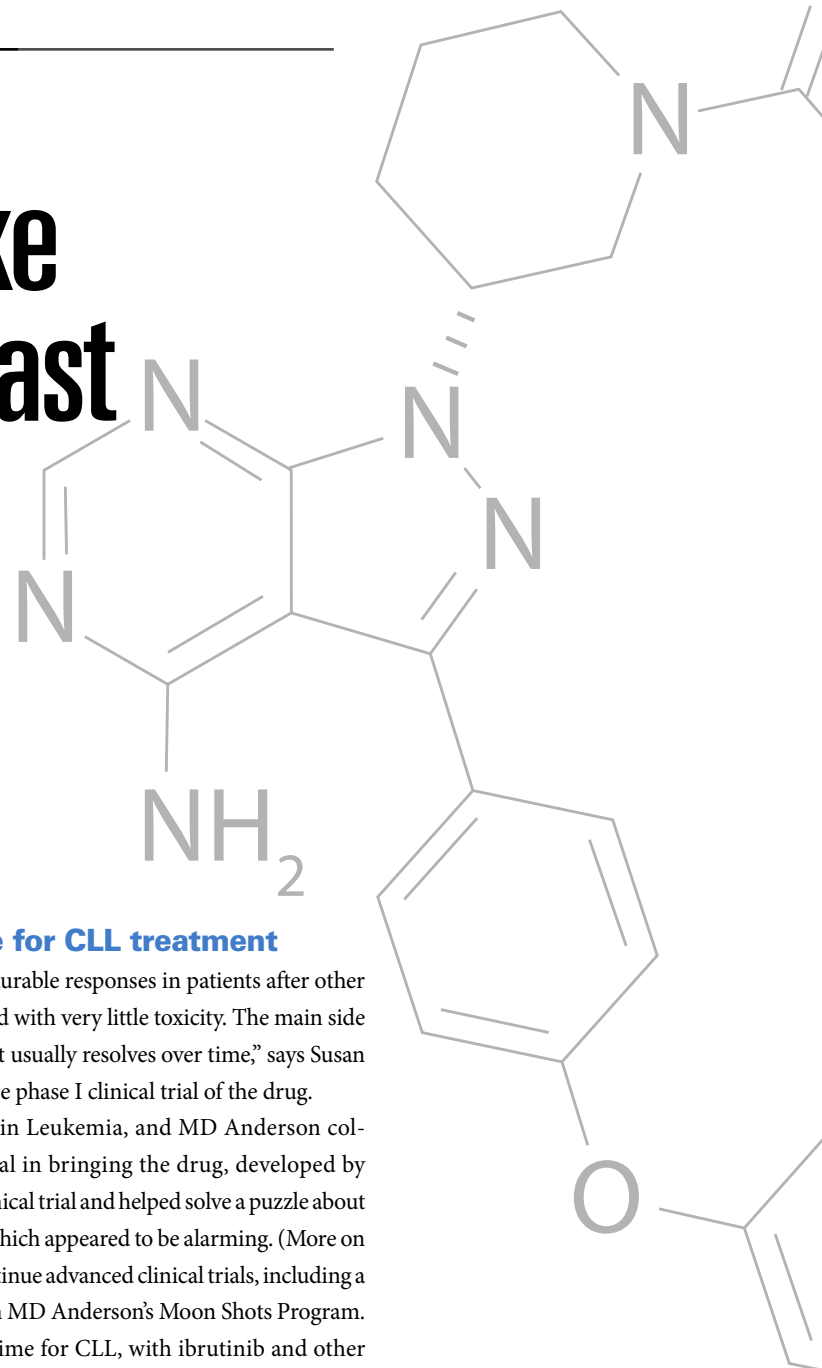
**"Looking back on my twenty-some years at MD Anderson, I spent as much time going to appointments that addressed my pain as my cancer. It's important to not give up, to try different things until something works for you. I'm living proof."**

— Angela Pace

# The drug that may make chemo a thing of the past

FDA-approved ibrutinib is helping chronic lymphocytic leukemia patients forget they have the disease

By Scott Merville



Looking for an answer to his worsening chronic lymphocytic leukemia (CLL) that didn't involve chemotherapy, Phoenix cardiologist Marvin Padnick came to MD Anderson at his wife's suggestion in 2012.

"There was one last opening in a clinical trial of ibrutinib," he recalls. "Fortunately for me."

At the time, ibrutinib was a promising experimental targeted therapy for CLL, a cancer of the white blood cells that has been treated with some success by combining chemotherapy and the antibody rituximab.

"For me, ibrutinib is a miracle drug that saved my life. I don't believe I would have survived another round of chemotherapy," says Padnick, 69, now director of cardiology at an Oklahoma hospital.

Having exchanged the discomfort and fear of advanced CLL for a regimen that includes running 3-6 miles daily on a treadmill and busy, gratifying days at work, the fact that Padnick is a cancer patient has slipped to the back of his mind.

"I forget I have this disease," he says via phone on his way to pick up his wife, Dee, for a dinner date. "The only reminder is when I go to MD Anderson every three months for routine blood work."

That and the three capsules of ibrutinib he takes daily.

Now, more patients have that option. In February, the U.S. Food and Drug Administration granted accelerated approval of the drug, now called Imbruvica, for previously treated CLL patients.

## An exciting time for CLL treatment

"Ibrutinib produces durable responses in patients after other treatments have failed, and with very little toxicity. The main side effect is mild diarrhea that usually resolves over time," says Susan O'Brien, M.D., who led the phase I clinical trial of the drug.

O'Brien, a professor in Leukemia, and MD Anderson colleagues were instrumental in bringing the drug, developed by Pharmacyclics, Inc., to clinical trial and helped solve a puzzle about ibrutinib's initial effects, which appeared to be alarming. (More on that later). Today they continue advanced clinical trials, including a combination trial through MD Anderson's Moon Shots Program.

"This is an exciting time for CLL, with ibrutinib and other drugs in clinical trials providing new approaches that move us away from reliance on chemotherapy combinations," O'Brien says.

One important advantage is that ibrutinib does not suppress bone marrow production of normal blood cells such as red cells, platelets and infection-fighting white cells. CLL already does that, exposing patients to potentially lethal infections and to bleeding. Chemo also can worsen this effect, known as myelosuppression.

Even successful drug regimens such as the fludarabine-cyclophosphamide-rituximab (FCR) combination, developed at MD Anderson and now considered the CLL standard of care, can be difficult for older patients to tolerate. Chemo also raises a patient's risk of developing other cancers later on.



Jan Burger, M.D., Ph.D., is seeing dramatic improvements in chronic lymphocytic leukemia (CLL) patients who are on Imbruvica.  
© F. Carter Smith



Susan O'Brien, M.D., and her MD Anderson colleagues were instrumental in bringing ibrutinib to clinical trial and helped solve a puzzle about the drug's initial effects. F. Carter Smith

"Our goal now is to eliminate the need for chemo in treating CLL," says Michael Keating, M.D., professor in Leukemia and a pioneer in treatment of the disease.

CLL — the most common adult leukemia — is a malignancy of immune system B cells (white blood cells that normally produce antibodies against infection). The American Cancer Society estimates 15,720 new cases will be diagnosed in 2014, and about 4,600 people will die of CLL.

Ibrutinib blocks Bruton's tyrosine kinase (BTK), a vital component of B cell receptor signaling. In doing so, it disrupts a number of molecular signaling networks that are important for the survival and growth of CLL cells.

### High response rates, low disease progression

In December, O'Brien reported on a clinical trial involving 140 CLL patients that showed ibrutinib alone produces complete or partial responses in 88% of those who have had previous treatment, and 86% who have received the drug as initial therapy. At the 30-month mark, 76% remained on the drug and showed no sign of the disease progressing.

Combining the drug with the antibody rituximab boosted the response rate to 95% in a clinical trial led by Jan Burger, M.D., Ph.D., an associate professor in Leukemia and Padnick's oncologist. At 18 months, 78% of a 40-patient group showed no progression.

### Driving CLL cells out of hiding

CLL develops slowly and often is monitored for years before high white blood cell counts and other indicators point to the need for treatment.

Alarming, patients who enrolled early in the phase I trial showed an increase in their white blood cell counts after taking ibrutinib. "That's normally a sign of disease progression that would result in the patient being taken off the drug," O'Brien says.

But there were offsetting clinical observations that discouraged jumping to conclusions.

"CLL cells accumulate in the lymph nodes, so these patients have a lot of swelling, especially around the neck," O'Brien explains. Just as the white cell counts rose, bloated lymph nodes began to retreat and patients reported feeling better. Eventually, white cell counts began to fall.

Burger conducted laboratory studies that illuminated what was going on. "Ibrutinib flushes the leukemia cells out of the bone marrow, lymph node and spleen and into the bloodstream, where they lose the support they get from surrounding tissue and slowly die," Burger says. "CLL cells generally are long-lived, even without survival signals."

### Rapid response

It can take months for blood counts and bone marrow involvement to return to normal as the interrupted growth signaling caused by ibrutinib slowly takes its toll. Some patients who lack certain genetic mutations in their CLL cells respond more rapidly. Padnick, apparently, is one of them.

"My spleen was larger than ever when I started ibrutinib, and within a week it started to shrink, and in a month I couldn't feel it at all," Padnick says. "My white blood cell count went from 150,000 to 5,000 (normal) in a month. I had no side effects and didn't miss a day of work during treatment."

This was a stark contrast to his experience in Arizona with a chemotherapy combination, which knocked him out of work for three months and resulted in hospitalization at one point because of an allergic reaction to one of the drugs.

### Looking like a weightlifter on steroids

Patients such as Bob White may never know what it's like to be on a chemotherapy/rituximab combination.

The retired petroleum engineer from the Fort Worth area went straight into the arm of the phase II trial that was added for previously untreated patients after the strong results for those previously treated.

"My lymph nodes were so swollen I couldn't button a size 19 shirt, and I normally wear a 17. I looked like a weightlifter who had been on way too many steroids," White recalls, referring to when he started ibrutinib in 2011.

His experience was more typical than that of Padnick. White's white cell count shot from 60,000 to 100,000 per cubic milliliter of blood, but within two weeks his lymph nodes began to shrink and soften. He had some fatigue caused by low red blood cell counts and some diarrhea, which he chased away with Imodium.

By October, his anemia subsided as his white blood cell counts fell. By spring 2012, his counts were normal, and by the fall of 2013, CLL

cells were only detectable in 4% of his bone marrow — down from 40%.

"It took about six months, but for a patient like me, who was in otherwise good health, taking the drug itself is just fine, even if it takes it six months or a year to really do its thing," White says.

### CLL Moon Shot advances the cause

So far, ibrutinib has led to few complete remissions. The drug tamps down CLL, but so far doesn't cure it, Burger reports. However, complete response rates are increasing in the group of patients taking the ibrutinib/rituximab combination. O'Brien suspects that, over time, more complete remissions will emerge as the ibrutinib slowly destroys CLL cells and patients are followed longer.

New drugs are in the pipeline. Idelalisib blocks a different molecular pathway called PI3K. O'Brien co-led a clinical trial of the drug combined with rituximab, compared with rituximab alone, for heavily pretreated CLL patients who weren't eligible for chemotherapy combinations.

The combination was so superior that the clinical trial was halted in October after an early data analysis.

CLL was chosen as one of MD Anderson's moon shots, a program to dramatically reduce cancer deaths. Burger leads a new combination trial launched in December that compares ibrutinib to ibrutinib plus rituximab in 208 previously treated CLL patients.

Genomic analyses of patients' CLL cells will be done before and during treatment and at the point of resistance, when it develops, to reveal how the disease changes during treatment.

Burger and colleagues are trying to stay ahead of CLL by studying cases where the leukemia became resistant to ibrutinib. "We'll need to identify and understand these mechanisms so we can develop ways to defeat resistance as it arises."



before

"My lymph nodes were so swollen I couldn't button a size 19 shirt," says CLL patient Bob White, a retired petroleum engineer.



after

White was treated with ibrutinib and didn't undergo chemotherapy.

# Too much of a good thing:

## UNDERSTANDING OVER-IMAGING

By Laura Sussman

**THERE'S NO DENYING THE MEDICAL MARVEL OF IMAGING. The technology has dramatically altered all aspects of cancer care — from diagnosis and treatment to surveillance and prevention.**

It began with the revolutionary introduction of the computerized tomography (CT) scan in the 1970s. For the first time, physicians were provided with a 3-D view of the body's organs, bones and other tissues, as well as tumors. Since then, CT technology has evolved in such a transformative way that in the not-too-distant future, novel therapies may be guided in real time based on what the most sophisticated of imaging equipment identifies.

"Thirty years ago, the most common surgery done was an exploratory laparotomy — a high-risk procedure that's associated with morbidities and, in some cases, death," explains Marshall Hicks, M.D., head of Diagnostic Imaging. "Now it's hardly ever performed because of the ability to diagnose and determine therapy using cross-sectional imaging."

Imaging's impact reaches far beyond cancer, stretching across the entire health care spectrum. Yet, as technology has advanced and its potential has skyrocketed, so have concerns about overuse and appropriate use of imaging, as well as the cost to the nation's health care system. According to the National Council of Radiation Protection and Measurements, it's estimated that annual medical radiation exposure has increased six-fold since the 1980s.

The reasons for that eye-popping statistic are as obvious as they are complex. Clinical, legal and economic factors are involved, as well as the empowered patient's demand.

"Clearly, imaging has revolutionized medicine. Yet there's an obvious paradox," notes Hicks. "When applied and used appropriately, imaging is undeniably valuable. But as it has become more accessible and more prevalent, an overuse issue has developed — both across the country and beyond cancer — that we're now trying to address as a society."

As the nation continues to try and tackle growing health care costs, the field of medical imaging is on notice, with policy makers and insurers taking a stand against excessive use and cost. Many professional medical societies have launched campaigns promoting "appropriateness criteria" and/or clinical guidelines for imaging and procedures.

In fact, the imaging community has been barraged with recommendations over the past few years, says Wei Yang, M.D., professor in Diagnostic Radiology and section chief of Breast Imaging.

"But it's a very difficult issue to perfectly navigate. From the policy point of view, we want something for everyone that offers maximum benefit at minimal cost," she explains. "That doesn't always work on a personal level, especially for the patients who may want all the imaging possible and feel that empowerment will help them navigate their cancer journey."



**“As we evolve as physicians who practice clinical diagnostic imaging, I’ve found that the more time we spend helping our patients understand the quality of care, the less heavily they rely on imaging,” says Wei Yang, M.D. [Wyatt McSpadden](#)**

## Over-imaging and breast cancer

One professional society’s surprising recommendations motivated MD Anderson researchers to investigate the issue of over-imaging in diagnosing early-stage breast cancer.

In 2011, the American Board of Internal Medicine launched “Choosing Wisely,” an initiative that encourages conversations between physicians and patients that, ultimately, may discourage the overuse of the country’s health resources. In 2012, as part of its participation in the national campaign, the American Society of Clinical Oncology (ASCO) recommended against the use of CT, positron emission tomography (PET), tumor markers and nuclear bone scans in early-stage breast cancers.

Carlos Barcenas, M.D., points out that the recommendations of the National Comprehensive Cancer Network — the gold standard for treatment guidelines — clearly state that for women with early disease, the proper procedures for diagnosis only include mammograms, ultrasounds, clinical exams and blood work.

“ASCO’s broad recommendations against procedures that are not recommended by the national guidelines gave us the idea to investigate and understand just how pervasive over-testing and imaging really are,” says Barcenas, an assistant professor in Breast Medical Oncology. “We’ve known that the overuse of staging procedures is a problem and may also affect the cost-effectiveness in diagnosing women with early breast cancer — just not to what extent.”

For the retrospective study, Barcenas and his MD Anderson colleagues analyzed claims from a national database of 42,651 women with an initial diagnosis of breast cancer between 2005 and 2010. All were younger than 65 and had undergone breast cancer surgery. Claims for imaging and tumor markers were analyzed between the specific period of three months before surgery and one month after.

Of the patients, 37% had at least one claim for an unnecessary staging test, with minimal change in rate over the five-year period. Most alarming to the researchers was that 18% had tumor markers performed — a staging procedure with no role in the nonmetastatic breast cancer diagnosis setting.

Undergoing chemotherapy had the highest association with overuse of staging procedures, with hormone and radiation therapy also being overused. Finally, the youngest of breast cancer patients — women under 35 years old — were most likely to undergo inappropriate testing. However, this statistic may reflect the perception that the younger population is perceived to be at higher risk of metastatic and/or aggressive disease, Barcenas explains.

The researchers found regional differences in overuse trends, as well as a higher rate of unnecessary procedures in women with preferred provider organization (PPO) coverage compared to those with health maintenance organization (HMO) coverage.

Sharon Giordano, M.D., says that the research should offer some validation to physicians, granting them permission to not order unnecessary tests.



“Often doctors think they’re not being good to their patients if they don’t do all they can by way of testing,” explains Giordano, chair of Health Services Research, who co-authored the study with Barcenas. “But there’s a shift in focus to doing what matters for the patient and what’s proven to improve outcomes, rather than testing for the sake of testing. Ultimately, our goal is to bring the best care and value to our patients.”

## Partnering with the patient

To ensure success in reducing the demand for imaging, MD Anderson experts agree that strong communication between physician and patient is paramount.

“As we evolve as physicians who practice clinical diagnostic imaging, I’ve found that the more time we spend helping our patients understand the quality of care, the less heavily they rely on imaging,” says Yang.

Overwhelmingly and understandably, says MD Anderson’s George Chang, M.D., a colorectal surgeon, a major concern for cancer patients is recurrence. And as cancer patients — fortunately — live longer, their desire for surveillance continues.

“Specifically for colorectal cancer surveillance, there’s very little data to help us monitor patients and guide the care we provide — the guidelines we use actually are based more on expert opinion,” says Chang, professor in Surgical Oncology. “Therefore, we really don’t have a way to appropriately communicate with patients.”

Chang and colleagues across the country have embarked on a study, with the help of their patients, to specifically address the data issue, as well as understand their personal needs. Conducted by the Alliance Cooperative Group and sponsored by a nonprofit research institute funded by the Affordable Care Act, the researchers hope to better understand what patients look for in surveillance. Ultimately, they want to identify ways surveillance can be tailored according to risk of recurrence, ability to be treated and, just as important, a patient’s personal preference.

“Our study partners physicians and patients in hopes of developing a decision-making tool for both,” says Chang, the study’s principal investigator. “Surveillance is inherently patient-centered, yet that communication is critical throughout their cancer experience. Ultimately, the patient is the most important component of all aspects of care.”

## MD ANDERSON’S CHECKS AND BALANCES

**W**ith patients’ best care in mind, a unique system of imaging checks and balances is the standard at MD Anderson, which is unique, even for academic cancer centers, says Joseph Steele, M.D., deputy division head of Clinical Operations in Diagnostic Imaging. When a clinician orders a CT, PET or MRI, that order — along with the patient’s medical history — is thoroughly reviewed by an MD Anderson radiologist before imaging.

“Our radiologists look at all relevant clinical information such as previous imaging studies, prior surgeries, pathology reports and treatment regimens. We want to ensure that the imaging study ordered is the most appropriate and, if it is, determine how best to proceed with the testing,” says Steele, a professor in Diagnostic Radiology. “Our goal is to ensure that the imaging protocol ordered answers the specific question of the clinician, so we tailor the examination to meet each patient’s unique needs.”

This practice is very different from the majority of imaging conducted in the United States, he explains. Often, the first time a radiologist learns of the patient’s care is when their image comes up on a screen to be reviewed.

With additional imaging exams, there often comes additional radiation exposure, reminds Steele. It’s critical that both clinicians and radiologists explain to the patient that, while often minimal, additional radiation exposure does come with risk. Anecdotally, Steele has noted a stark contrast in patients’ understanding and comfort level with additional radiation exposure: some are overly fearful and may even refuse necessary testing, while others want as much testing as possible, regardless of the risk-benefit ratio.

To address the issue, Steele and his colleagues have opened an MD Anderson survey-based study in lung cancer patients, measuring their personal knowledge about risk from radiation exposure.

“Our concern is that some patients don’t understand their own risk and may make poorly informed decisions — either for or against imaging — that may not be in their best interest,” he says. “We hope our findings will identify populations in need of greater understanding, and then we can focus our education efforts on those people.”



# Close quarters

By Julie Penne  
 Wyatt McSpadden

## Rotary House International celebrates 20 years of providing hospitality, support and accessibility to MD Anderson patients

A spacious room, comfortable bed, free WIFI and other amenities can make a few days away from home bearable for any traveler.

But for many MD Anderson patients on cancer journeys far from friends and supportive families, the Jesse H. Jones Rotary House International offers more than convenience and a restful place to sleep for a night or extended stay.

For the past two decades, it's been a respite that keeps patients connected to their MD Anderson team. It also provides a welcome disconnect from their cancer experience.

The fitness center, indoor swimming pool, daily recreational activities and free shopping shuttles deliver diversions, but the large, wheelchair-accessible guest rooms, an onsite lab for blood draws, quiet rooms for support groups, a dedicated multicultural staff and covered skybridges to MD Anderson clinics serve the special needs of guests.



Angelica Evans,  
 housekeeping supervisor

General Manager Kyle Ariza says her staff understands that, unlike most hotel patrons, their guests aren't traveling for business or pleasure. "Anything we can do to ease our guests' stay is what we aim to do," says Ariza, who left nursing school to pursue a career in hospitality 25 years ago. "There are so many unknowns in cancer, and we don't want them to worry about any aspect of their stay here. That's one burden we can take off their shoulders."

Like so many MD Anderson programs and facilities, the Jesse H. Jones Rotary House International was conceived of need, funded by philanthropy and named for one of Houston's great benefactors.

After the popular Mayfair Hotel, located at Holcombe and Braeswood boulevards, was imploded in 1991, the Rotary Club of Houston helped raise \$17 million to build a new patient and family hotel in its place. With gifts from people, foundations and other sources, Rotary House opened two years later. It stood

11 floors with 198 guest rooms.

"If we can't accommodate everyone who calls for a room, we do our best to help place patients in a nearby hotel that can accommodate their needs."

— Kyle Ariza, general manager

In the late 1990s, as the demand for MD Anderson care grew — particularly among patients from outside Houston — Rotary House expanded as well. In 2001, a new wing with 124 rooms — including a floor of executive suites — and a 10-story parking garage opened.

Today, the hotel's 322 rooms have an average occupancy of more than 85% on Sundays through Thursdays, Ariza says. The hotel is owned by MD Anderson and operated by the Marriott International, a model unlike any other facility in the United States that provides lodging exclusively for patients.

The Rotary House's 160-member staff includes housekeepers, bellhops, servers, front-desk attendants and patient-guest relations representatives. Ariza says that, unlike other hotels, employee turnover is low because of the strong commitment to accommodating guests' unique needs.

Many have worked at Rotary House for a decade or more, including Lisa Apodaca, who has staffed the front desk for 12 years.

"It's the small things that you can do for a guest that can make the most impact," she says. "Every day you have the chance to go the extra mile for someone. They become our family, just like we become theirs."



"Being at Rotary House keeps you in your comfort zone, even though we're hundreds of miles away from our own home and family," says LaMerle McIntyre, a patient from Carrollton, Ga.

### Among the services available to Rotary House guests:

- Business Center with Internet access
- Landscaped park area and outdoor seating
- Guest laundry and same-day dry cleaning
- Courtesy shuttle for shopping, attractions within 2-mile radius
- Full service restaurant and in-room dining service
- Concierge service
- Learning Center
- Check-On program for guests traveling unaccompanied
- Support groups
- On-site lab for blood draws
- Guest activities such as musical performances, games, massages and skin-care demonstrations
- Liaisons to clinic services
- New patient orientation



# CASTING A WIDE NETWORK

For MD Anderson Cancer Network members, ending the disease is a team effort

By Andy Olin



Thomas Burke, M.D.



## Making Cancer History.®

That three-word goal has been the rallying cry for MD Anderson since 1996. It's both catchy and clever, but it's also substantial. It's not Making Cancer History in Houston or Making Cancer History in Texas. It's Making Cancer History — period.

Such a lofty ambition requires partnerships within and outside of the Texas Medical Center (TMC), across the nation and around the globe. MD Anderson and other health care institutions must prepare for the "tidal wave" of cancer cases that World Health Organization (WHO) scientists say is approaching. Their prediction of 24 million cases a year by 2035 necessitates significant planning today.

"We're all aging. The number of people who are going to get cancer and need cancer services in the next 20 years will be huge," says Thomas Burke, M.D., executive vice president, MD Anderson Cancer Network®. "A single institution in a single location doesn't have the financial resources or the reach that we could have if we were doing this with five, 10, 15 partners scattered around the country, all articulating the same agenda."

To address this need and improve patient outcomes nationally, Burke is overseeing MD Anderson's efforts to treat populations beyond Houston through the network. It's divided into four member tiers — certified, associate, specialty and partner. A varying degree of expertise is shared at each level, from quality assurance based on MD Anderson's approach to cancer care to co-branded oncology programs focused on a single disease site to full clinical integration. The network works with community hospitals and health systems, as well as Houston-area care centers and others, to elevate clinical care, share prevention and screening education, and launch clinical trials.

"We'd like to provide our services to a lot more people with cancer than we can in Houston," Burke says. "It's not possible without these kinds of relationships."

To make this effort more efficient and effective, Burke has zeroed in on two areas of focus for the network: cohesion and trainee development.

### More cohesion in care

Burke wants to engage patients and partners by uniting the network components into a more cohesive team and group of efforts.

"In the past, we built things as individual pieces," he says. Those pieces included the LBJ Hospital Oncology Service, the Houston-area care centers, two large-scale partners in Arizona and New Jersey, and 12 certified-member hospitals and health systems in 10 states.

"But now we want a way to bring themes together that truly work as a network. To do that, we'd like to have clinical trial opportunities that cross over all of those sites. We're putting together a team to identify the types of cancers that occur in those regions and develop clinical trials that match the needs of the patients who live there."

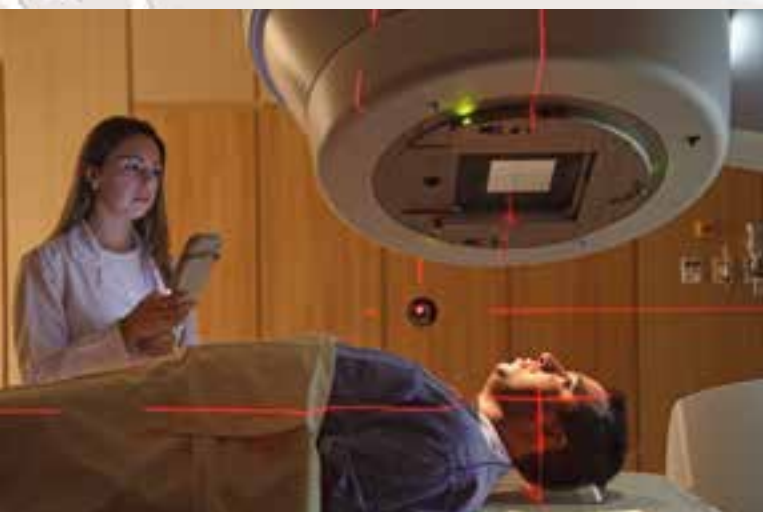
By transferring developments made in the Texas Medical Center to somewhere such as the Phoenix area, where Banner MD Anderson Cancer Center is located, they become accessible to a local population of 5 million. This also can help the institution build a clinical trials operation that transcends both Houston and Phoenix, as well as bring value to the partner and its population.

"And it furthers MD Anderson's mission of new discovery, new treatments and new ideas because we'd have access to a greater number of patients who can participate," Burke says.

Banner MD Anderson opened in 2011, and another partner member, MD Anderson Cancer Center at Cooper in Camden, N.J., launched in 2013. Establishing subspecialties such as surgery, radiation and medical oncology at those sites laid a foundation with the ultimate goal of building sophisticated breast cancer, prostate cancer or lung cancer teams, similar to those found at the TMC campus.

According to Amy Hay, vice president for business development, the network wants to add four more partner members in the next eight years.

(Photos at top, from left) Albert Einstein Hospital in São Paulo, Banner MD Anderson in Arizona, MD Anderson Cancer Center at Cooper in New Jersey



**Albert Einstein Hospital will become the cancer network's first associate member, a level that's specifically geared toward top-ranked oncology providers outside of the U.S.**

"The primary goal of the partner membership is to identify and integrate high quality, large-scale providers committed to delivering the highest quality, innovative cancer care," Hay says. "This requires full integration with MD Anderson faculty and staff across patient care, research, education and prevention."

Burke says it only makes sense to partner with more hospitals in large geographic parts of the country. These partners will provide access to a larger and more diverse group of people who need care. Doing so will help advance some of MD Anderson's most ambitious initiatives to eventually end cancer.

"If you think about discoveries that we expect to come out of our Moon Shots Program, you want to get those to the widest segment of the population as quickly as you can," Burke explains. "Having these kinds of relationships really allows us to disseminate knowledge much more quickly than a single site in Houston."

### Certified surge

Presently, the most potential for dynamic growth is found at the certified level. These members are mostly located in midsize cities outside of Texas at cancer programs that share core values similar to MD Anderson's. Through the Physicians Network team, cancer programs at hospitals such as East Jefferson General Hospital in Metairie, La., are developed and built.

"Rather than geotargeting cancer programs, we focus on health systems that have a desire to elevate, standardize and assimilate cancer care using MD Anderson's evidence-based guidelines," says Melanie Wong, vice president, Physicians Network.

MD Anderson also helps these members track the outcomes of patients treated in their programs. The certified member provides the cancer practice professionals and facilities, and MD Anderson helps elevate the care.

But, according to Wong, as the certified group grows, the new members and those in development are "breaking the mold" of those from five years ago.

"They're more mature cancer programs with highly developed physician leadership models leading integrated cancer programs in multi-hospital systems. In some cases, the volume of patients, physicians and clinical staff is five times the average historical values. The standard of cancer care is outstanding and the hospitals are affiliating with us to sustain and exceed that standard."

So far, certified members have been largely concentrated in the eastern half of the U.S., among community hospitals. Wong says she expects that to change.

"It would be wonderful to further the national program with certified members in the western half of the U.S. This year we welcomed our first state university-based, academic member into the network," Wong says.

## The doctor will see you now... close to home

By La Chanda Ricks

New Jersey couple Ted and Marianne Colanduno were thrilled to learn about the partnership between MD Anderson and Cooper Health in Camden, N.J.

In 2008, after being diagnosed with a rare liver cancer, Ted followed a friend's advice and came to Houston for treatment at MD Anderson. Two weeks later, he returned home. But every six months he was back for follow-up care.

Three years after her husband's diagnosis, Marianne learned she had a very aggressive form of breast cancer. She opted to stay close to home and be treated by a breast cancer specialist at Cooper Health.

With the 2013 opening of MD Anderson Cancer Center at Cooper in Camden, the couple believes they now have the best of both worlds, and the best cancer care available, all conveniently located near their home. Marianne will continue her care at the center, which is now fully integrated with MD Anderson. And Ted plans to have his follow-ups there.

Like Banner MD Anderson in Arizona, MD Anderson at Cooper is a partner member of MD Anderson Cancer Network™, a program that allows patients across the country to benefit from MD Anderson's high-quality, multidisciplinary care without traveling to Houston.

"When I heard the news that MD Anderson care was coming to New Jersey, I looked at my wife with a huge grin — this will be the best thing for cancer patients in our region," Ted says.

The network recently welcomed its first certified member in Connecticut and the first academic member, Ellis Fischel Cancer Center, a part of the University of Missouri Health System. At least five prospective certified members may join later this year.

### Going global

With the WHO reporting that 60% of the world's total new cancer cases each year occur in Africa, Asia and Central and South America, the benefit of building MD Anderson's international presence also is evident. Currently, there are affiliates in Spain at MD Anderson Madrid and in Turkey at the MD Anderson Radiation Treatment Center at American Hospital in Istanbul, as well as 29 sister institutions that act as academic collaborators throughout the world.

This year, the network will launch its associate member level, specifically geared toward top-ranked oncology providers outside of the U.S. The program is designed to collaborate across prevention, clinical care, research and education, and will provide international health care providers the opportunity to have a more integrated relationship with MD Anderson.

"It's an important step toward eradicating cancer around the world," Hay says. "By exporting our research-driven multidisciplinary care, we'll take a leading role in improving patient care globally."

Associate members will complement the current Sister Institutions Network to share MD Anderson's clinical expertise and collaborate on research. Such relationships give researchers access to more data and larger patient populations.

"Over the years, collaborations with Albert Einstein Hospital in São Paulo, the first sister institution, have grown significantly," Hay says. "Building on that alliance, Albert Einstein will this year become the first associate member."

At the same time the network expands its reach, Burke recognizes the opportunity to recruit and support trainees who can extend MD Anderson's model of multidisciplinary care across its affiliate practices.

### Homegrown talent

In January, a senior baseball analyst for ESPN ranked the Houston Astros' farm system as the best in baseball. In the world of sports, a farm system provides training and experience for young players whose goal is to play in the major leagues.

Burke essentially wants to re-create that system for the network, using the Graduate Medical Education program to help partners build expert cancer teams.

"We train nurses. We train fellows. We train pharmacists. Some of whom we hire and they work here on the TMC campus. It would be great if you're trained here, when you finish, you work here," he says.

Those opportunities would include the East Coast or the Southwest, as well locations in the 10 states where certified members currently exist, and care centers around Houston. Based on what they want out of their work environment or geographic location, trainees have a lot of options within the network.

When reflecting on the WHO's grim prediction of a 60% rise in cancer cases in the next 20 years, Burke points out the greatest needs going forward are preventive, primary care and cancer care. There'll be no shortage of demand for health care professionals.

"We're going to need everyone we train at some level. So we want to continue to train great people."

## Do you know Tom Burke?

Thomas Burke, M.D., was recruited to MD Anderson as an assistant professor in 1988. Before becoming executive vice president for the MD Anderson Cancer Network®, he was physician-in-chief from 2005 to 2013. Burke is a practicing gynecologic oncology surgeon with a research emphasis in vulvar and endometrial cancers. Burke spoke to Conquest about his life before Houston, his passions outside of work and his love of old movies. Just don't ask him to sing. "I'm completely tone deaf and have absolutely no musical talent."



### Tell us about some of your stops before landing in Houston.

I grew up in suburban Chicago, but have spent most of my life in warm weather climates: New Orleans, Hawaii, San Antonio and Houston. Though there was a two-year stint at Fort Leavenworth, Kansas, that was mighty cold. I joined the U.S. Army to pay for my medical education, and stayed in for 10 years.

### You did your clinical internship and residency at Tripler Army Medical Center in Honolulu. What's one thing you could get in Hawaii that you wish you could get here?

I have many wonderful memories of Hawaii — it's where I met and married my wife. A favorite of mine was the ability to make weekend hospital rounds at seven in the morning and be on a dive boat off the North Shore of Oahu by 9:30 a.m.!

### There's a life-size cutout of John Wayne outside your office. What's your favorite film of his?

John Wayne is awesome in "Stagecoach." I'm also partial to Humphrey Bogart, Ava Gardner and Marilyn Monroe. My wife, Cathy, loves old movies. We have a nice collection at our place outside of Fredericksburg.

### It would surprise people you work with if they knew what about you?

I'm pretty transparent. Most of my work colleagues know me well. Not much would surprise them.

### What do you enjoy doing when you're not working?

Like most of us, I enjoy not working (he says with a laugh). I have a nice patio garden with cacti, herbs and water lilies. Cathy and I are chronic Rockets fans. And we've done a fair amount of antique furniture refinishing.



# CANCER BRIEFINGS

## MD ANDERSON IMMUNOTHERAPY PIONEER'S LIST OF AWARDS KEEPS GROWING

A Canadian institution that annually recognizes seminal medical discoveries selected James Allison, Ph.D., chair of Immunology, for one of its 2014 Canada Gairdner International Awards.

The honor, announced in March by the Gairdner Foundation, lauds cancer immunotherapy leader Allison's research in T cell biology that led to his discovery of a unique treatment that frees the immune system to attack cancer.

"Allison's concept has opened a new field of cancer therapy, immune checkpoint blockade, and many cancer patients are alive today because of his vision," the foundation noted in its announcement.

Allison discovered that a molecule on T cells turns off an immune attack on cancer before those white blood cells, primed to kill the tumor, can complete their work. He created an antibody to shut down this switch and prolong immune response, which became ipilimumab, known as Yervoy®, the first drug to increase survival of people with late-stage melanoma.

Allison and seven other honorees will receive their awards and 100,000 Canadian dollars to support their research. The awards were created in 1959 to recognize and reward the achievements of medical researchers whose work significantly improves the quality of human life.

Last year, Allison received a Breakthrough Prize for Biosciences from the Breakthrough Foundation and The Economist's 2013 Innovations Award for Bioscience. The journal Science named cancer immunotherapy its 2013 Breakthrough of the Year. In February, he was named winner of the 2014 Szent-Györgyi Prize for Progress in Cancer Research from the National Foundation for Cancer Research.

— **Scott Merville**



**James Allison, Ph.D.**



**Michelle Fingeret, Ph.D.**

## SCREENING TOOL TARGETS BODY IMAGE CONCERNS

While clinicians and surgeons work to provide the best medical outcomes for cancer patients undergoing reconstructive surgery, researchers and psychologists work to help prevent acute psychosocial impairment.

In a cross-sectional study recently published in Psycho-Oncology, researchers tested a survey that acts as an early screening and intervention tool to help clinicians identify patients who were at high risk for body image concerns.

"Patients can become very distressed by appearance changes after reconstructive surgery," said Michelle Fingeret, Ph.D., a behavioral scientist and lead investigator on the study. "We need to be able to identify these patients and address their concerns as early as possible to ensure we provide the best intervention."

The survey, known as Body Image Screener for Cancer Reconstruction (BICR), was designed specifically for cancer patients undergoing reconstructive surgery at MD Anderson, and is administered by plastic surgeons. Fingeret, a psychologist and director of MD Anderson's Body Image Therapy Program, said this type of screening is needed to better assess patients' frame of mind before surgery.

The survey, which was administered to 248 patients undergoing different types of reconstructive surgery, covers three key components that indicate body image concerns: distress, behavioral avoidance and preoccupation.

More than 95% of the patients expressed concerns about body image and one-third were interested in enrolling in counseling or receiving additional information about body image distress.

"This is just the first step in research that needs to be done on this population group," Fingeret said. "We're raising an important issue to patients and clinicians because body image concerns affect the quality of life for both patients and survivors." — **Katrina Burton**

## MD ANDERSON ESTABLISHES IMMUNOTHERAPY PARTNERSHIPS

MD Anderson will collaborate with Johnson & Johnson Innovation, LLC, and its affiliate Janssen Biotech, Inc., MedImmune, Pfizer and GlaxoSmithKline to develop immunology-based cancer treatments through the MD Anderson Moon Shots Program's immunotherapy platform.

The three-year translational research agreements bring together the scientific and clinical capabilities of MD Anderson and the global leaders in pharmaceutical and biotechnology development to strengthen the institution's efforts to advance therapies that train the body's immune system to combat cancer.

"Our new collaborations are different from traditional agreements because they allow both parties to work on any project they deem appropriate without additional budgets," said Ferran Prat, Ph.D., J.D., vice president of strategic industry ventures.

"We provide our pharma and biotech collaborators access to state-of-the-art facilities, novel research protocols for clinical trials open to our large and diverse patient population, and an opportunity to work with leaders in the field of immunotherapy," Prat added.

MD Anderson recognized the potential of immune-based therapies by creating one of the platforms that supports its Moon Shots Program, the institution's 10-year commitment to more rapidly develop therapies and other interventions to significantly reduce deaths caused by the disease. The ultimate goal is for all cancers to become moon shots. The moon shots are supported by several platforms — infrastructure, technology or expertise — that support research efforts.

"We welcome the opportunity to work closely with these companies to build upon the early successes of immunotherapy by extending this approach to many types of cancer and exploring ways to improve treatment effectiveness," said James Allison, Ph.D., chair of Immunology and executive director of the immunotherapy platform.

— **Scott Merville**



**Ferran Prat, Ph.D., J.D.**

## LEUKEMIA CHAIR PICKS UP LIFETIME ACHIEVEMENT HONOR

Hagop Kantarjian, M.D., chair of Leukemia, received a lifetime achievement award for his dedication to research and clinical practice from Castle & Connolly Medical Limited in March.

"Dr. Kantarjian is truly a world leader in the treatment of leukemia patients and in clinical research," said Thomas Buchholz, M.D., executive vice president and physician-in-chief. "Through this focus on research-driven patient care, he has helped vastly improve survival and quality of life for leukemia patients everywhere. This award is recognition of his deep impact in the field."

Castle & Connolly publishes Castle Connolly Top Doctors annually. In that process, the company solicits nominations from thousands of physicians and leaders from more than 1,000 hospitals to identify physicians who have made significant, cutting-edge contributions to their areas of medicine. The two physicians recognized annually for lifetime achievement have attained international recognition for the body of their lifetime contributions to medicine and health at the broadest levels, the company announced.



**Hagop Kantarjian, M.D.**

## EXPANDING THE REACH OF CARE IN HOUSTON

MD Anderson has opened a specialized surgery clinic on the campus of Memorial Hermann Memorial City Medical Center, providing West Houston patients with a new level of cancer care and area physicians a new source of collaboration.

Located in the Memorial Hermann Professional Building, the 5,000 square-foot clinic is home to an MD Anderson team that includes surgeons specializing in cancers of the breast, lung, esophagus, head and neck, thyroid and skin. Also based in the outpatient clinic will be an MD Anderson urologist, neurosurgeon, reconstructive surgeon and three gynecologic oncologists. The surgeons are joined by their own teams of MD Anderson midlevel providers and clinical nurses who also specialize in oncology care.

"Increasingly, patients opt for cancer care outside the Texas Medical Center because they want to stay closer to their home, community, jobs and families. Our expansion into Memorial City provides a growing population in West Houston greater access to the specialized expertise and team-based care of MD Anderson cancer surgeons," said Peter Pisters, M.D., vice president for MD Anderson's care centers located around Houston. "Following surgery, patients can continue treatment at Memorial Hermann Memorial City, a hospital well known in the Houston community for its high quality services." — **Beth Dombrowa**

# In treatment, but never out of touch

By Will Fitzgerald  
 Wyatt McSpadden

When a family friend handed Caitlyn Mortus a check following the completion of her cancer treatment, he had only one request: pay it forward. Since that day, hundreds of young cancer patients from across the country and around the world have benefited from Mortus doing as he asked.

But let's rewind to where this story began, back in 2009, when Mortus was a seventh-grader and a star athlete in Katy, Texas, a suburb of Houston. After she was struck near the mouth by a soccer ball, Mortus complained of reoccurring pain and noticed unusual swelling in the weeks that followed.

The cause of her symptoms turned out to be Burkitt's lymphoma, a cancer of the lymphatic system, which would require five rounds of intense chemotherapy.

"The diagnosis came as a complete shock because I never knew much about cancer," Mortus, now 17, says. "My treatment required me to stay in the hospital for a week at a time, and I missed my friends and felt isolated."

During one of her hospital stays, Mortus was given a netbook — a small laptop computer — that allowed her to monitor social media sites such as Facebook and hold video-chats with friends. Suddenly, the outside world was at her fingertips, and it was comforting.

She had that same feeling five months after her diagnosis when she held the check in her hands and recalled the call to pay it forward. By that time, Mortus was cancer-free, according to her oncologist, Anna Franklin, M.D., an assistant professor in Pediatrics-Patient Care.

"My parents and I sat down and started to think about what helped me the most during my treatment," she says. "It was the netbook. So we decided other sick kids should have them, too."

And that's how Keep Kids Connected began in 2010. The nonprofit organization's goal is helping children in hospitals benefit from what Mortus calls "social healing." With the help of donations and fundraisers, the group has purchased 631 computers and tablets, available to patients ages 3-18 who apply online.

One of the recipients is 17-year-old Jennifer Gutierrez. She credits the program with making hospital visits easier. She overcame her own battle with leukemia, but regularly returns to MD Anderson for follow-up exams.

Mortus and Gutierrez first met at Camp Star Trails, an annual overnight summer camp for MD Anderson patients and their siblings. A few years later, Gutierrez heard about the program and filed her request for a computer.



"It made a big difference during treatments because I don't have a lot of family nearby," she says. "It's nice to be able to keep in touch while I'm sitting in the exam room waiting for my appointments."

For Mortus, her family and their many supporters, Keep Kids Connected is about recognizing how cancer affects lives and using that insight to make a difference.

"It's something little that we can do, but to see the excitement on someone's face is truly inspiring," Mortus says.

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## LOCATIONS

MD Anderson has Houston-area locations in the Texas Medical Center, Bay Area, Katy, Sugar Land, The Woodlands, Bellaire (diagnostic imaging) and Memorial City (surgery). MD Anderson physicians also provide cancer care to the underserved at Lyndon B. Johnson General Hospital in Houston. In addition, there are two research campuses in Bastrop County, Texas. The institution also has developed a network of national and international locations.

**MD ANDERSON CANCER NETWORK®**  
[www.mdanderson.org/cancernetwork](http://www.mdanderson.org/cancernetwork)

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- MD Anderson Cancer Center at Cooper (New Jersey)

## CERTIFIED MEMBERS

- 12 health systems and hospitals in 10 states

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- MD Anderson Radiation Treatment Center at American Hospital (Istanbul)
- MD Anderson Radiation Treatment Center at Presbyterian Kaseman Hospital (Albuquerque, N.M.)

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