

Yale Cancer Center

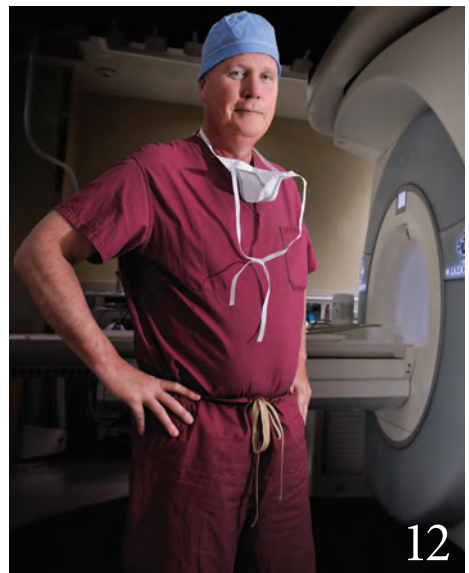
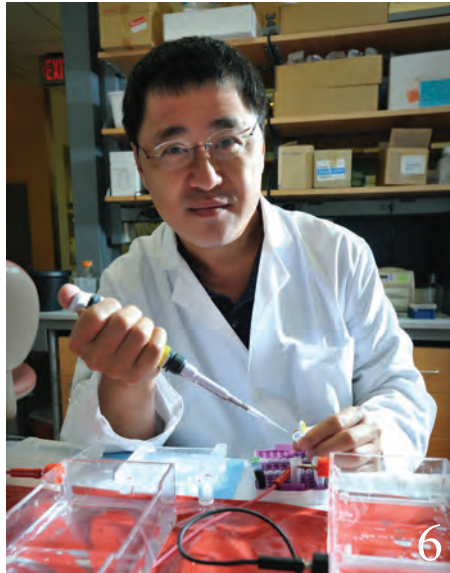
# centerpoint

MAGAZINE



Understanding  
How Cancer Cells  
Communicate

summer | fall 2011



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As a 39 year old man, the last thought on Greg DeMarco's mind was that he could be diagnosed with breast cancer. He quickly took control of his diagnosis and sought out the help of specialists at Smilow Cancer Hospital at Yale-New Haven.

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After innovative laboratory research from Lieping Chen led to a potential immunotherapy cancer treatment, Yale clinicians worked quickly to ensure the treatment was brought to our patients first through ground-breaking clinical trials.



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Lieping Chen, PhD, Professor of Immunobiology and Co-Director of Yale Cancer Center's Immunology Research Program

Peter Baker **photographer**

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## director's letter

### yale cancer center

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Yale Cancer Center  
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MAGAZINE

Centerpoint Magazine is published two times a year by Yale Cancer Center to inform the public and the Center's friends, volunteers, donors, and staff on current items of interest at Yale Cancer Center.

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The summer months were busy at Yale Cancer Center and Smilow Cancer Hospital at Yale-New Haven as we prepared for five new faculty members to join us this month. Over the last two years 32 new clinicians have joined the staff at Smilow Cancer Hospital and we continue to recruit some of the nation's best oncologists and scientists to support our patient care and research goals.

The executive leadership of Yale Cancer Center finalized the second year of our strategic plan in July, celebrating a year of successes and highlighting areas in need of continued improvement and attention. We will reference our strategic plan goals and objectives over the next twelve months to ensure we are appropriately addressing each one and in preparation for our Cancer Center Support Grant (CCSG) renewal application to the National Cancer Institute.

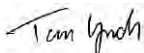
The CCSG grant is the funding and award mechanism that establishes Yale Cancer Center as one of only 40 National Cancer Institute Comprehensive Cancer Centers (NCI CCC). The strength of YCC lies in the enormity of scientific resources available to our researchers at Yale and in the depth of our research programs, where 235 scientists come together in small teams to work on collaborative research projects.

Our seven interdisciplinary research programs are actively engaging their membership through retreats and monthly seminars. The enthusiasm of the program directors has spread to the members and new collaborations and discussions for future research projects are evolving each week.

In addition, we have spent significant time and energies on the expansion of our clinical trials office. In July, we migrated all of our clinical trial data to OnCore, a cutting edge software system for clinical trials. The new system, along with 18 additional staff, will help to ensure we have the capacity to offer clinical trials to more of our patients and to cancer patients throughout the region.

The next twelve months will be focused on our CCSG renewal application to the National Cancer Institute. I look forward to updating you on our progress this winter, as we attain more of our goals in preparation for the application.

Sincerely,



Thomas J. Lynch, Jr., MD, Director, Yale Cancer Center

Physician-in-Chief, Smilow Cancer Hospital at Yale-New Haven

PETER BAKER





# BREAST CANCER, **NOT** JUST A WOMAN'S DISEASE

Emily Fenton **writer** Peter Baker **photographer**

As a 39 year old man, the last thought on Greg DeMarco's mind was that he could be diagnosed with breast cancer. In October of 2010, he noticed a stain on the dark colored shirt he was wearing, but thought he must have spilled coffee without realizing it. Several days later, he noticed the stain again, and this time realized it was blood and that it was coming from his left nipple. Worried that something serious might be wrong, he scheduled an appointment with his general practitioner for the next day. They ran several tests, all of which came back normal.

Unable to find a cause for the bleeding, Greg was sent for a mammogram where a calcification and a blockage of his duct were found. Not long before, Greg's sister had been diagnosed with breast cancer and perhaps, because her diagnosis was so recent,

for the first time he thought it might be breast cancer. After a biopsy was done, the diagnosis came back as ductal carcinoma in situ, a precursor of breast cancer that arises in the ducts of a gland. However, Greg did not fit the standard profile of a breast cancer patient, and because breast cancer is so rare in men, he wanted to find a specialist to manage his care.

"I wasn't entirely shocked to hear that it was breast cancer. In a way I was relieved to finally have a diagnosis," Greg said. "It was better to know what it was because now I could have a plan to deal with it instead of just wondering."

Upon the recommendation of a friend, Greg sought out Dr. Anees Chagpar, Director of the Breast Center at Smilow Cancer Hospital at Yale-New Haven. Dr. Chagpar is nationally recognized for her efforts in breast cancer care and research and is a renowned breast surgeon.



She explained his diagnosis and told him what to expect from his treatment. In January, Greg underwent a mastectomy, during which a sentinel node biopsy was performed to determine if the cancer had spread. It had not yet invaded other breast tissue.

The only complication Greg experienced following surgery was with his drains not draining properly. Drains are implanted after surgery to prevent blood and lymphatic fluid from building up under the skin. He did not require chemotherapy or radiation, and today has no trace of the cancer. For Greg, it was important to figure out what was wrong, even if it meant having a mammogram. The only time he felt out of place, Greg explained, was during his appointment when he entered a waiting room full of women. ‘It was an awkward experience yes, but who knows what would have happened if I didn’t endure that one uncomfortable exam.’

Dr. Chagpar explained that about 1% of all breast cancers occur in men and that it is important for men to be aware of symptoms like bloody nipple discharge or a breast mass and not to ignore them. ‘It is wonderful when men are as proactive as Greg and seek medical attention for symptoms like bloody nipple discharge. Much like in women, early detection often leads to improved outcomes,’ Dr. Chagpar explained.

‘I’m not the first man to have breast cancer, and I won’t be the

last. I never thought of it as something that only happens to women, because it happened to me, and it happens to other men,’ Greg said. He also spoke very highly of his care team, which included Dr. Chagpar, and his oncologist, Dr. Michael DiGiovanna, Associate Professor of Medical Oncology and Pharmacology at Yale Cancer Center. He commented that they were there for him every step of the way. ‘They made themselves available to me at all hours. It was important to know that my doctors were with me 100% of the time. We were even able to laugh together, which helped a lot.’

Greg had many welcome distractions during his recovery, the laughter of his two small children being his favorite. He talked with his sister multiple times a week to compare notes about what he was going through. The support of his wife was also a vital part to his recovery. She helped him manage his drains, but more importantly, Greg explained, her love and support helped get him through the difficult times.

He now has almost full range of motion back, enough to swing a golf club, and his advice to other men is not to wait. ‘If something doesn’t feel right, go to the doctor and have it looked at. When you have state-of-the-art treatment available and a phenomenal staff to get you through, it helps you not to lose hope. Just keep laughing, and keep living.’ 🔄



### False Negative Tests in Breast Cancer May Lead to Wrong Drug Choice

J Clin Oncol. 2011 Aug 1.

A team of Yale Cancer Center researchers has confirmed that between 10-20% of breast cancers classified as Estrogen Receptor (ER) negative are really positive. Understanding when and why breast cancers may be misclassified has important implications for treatment and outcomes for women diagnosed with breast cancer.

Led by David Rimm, MD, PhD, Professor of Pathology at Yale School of Medicine, the research team highlighted the limitations of immunohistochemistry (IHC) in the assessment of Estrogen Receptor in breast cancer and defined a new method for standardizing ER measurement. The team reported that this more sensitive and reproducible method finds cases initially called "negative" that behave as "positive."

### Scientists Synthesize Long-Sought-After Anticancer Agent

J Am Chem Soc. 2011 May 18;133(19):7260-3.

A team of Yale University scientists has synthesized for the first time a chemical compound called lomaivitin aglycon, leading to the development of a new class of molecules that appear to target and destroy cancer stem cells. Chemists worldwide have been interested in lomaivitin's potential anticancer properties since its discovery in 2001. Now a team at Yale, led by chemist Seth Herzon, PhD, has managed to create lomaivitin aglycon for the first time, opening up new avenues of exploration into novel chemotherapies that could target cancer stem cells, thought to be the precursors to tumors in a number of different cancers including ovarian, brain, lung, prostate, and leukemia.

### Yale Researchers Explain Why Cancer "Smart Drugs" May Not Be So Smart

Cancer. 2010 Dec 14.

Some of the most effective and expensive cancer drugs, dubbed "smart drugs" for their ability to stop tumors by targeting key drivers of cancer cell growth, are not effective in some patients. In two related studies, Yale School of Medicine researchers examined one such driver, the EGF receptor (EGFR), and found that a decoy receptor might be limiting the amount of drug that gets to the intended target.

Led by Nita Maihle, PhD, Professor of Obstetrics, Gynecology & Reproductive Sciences and Pathology at Yale School of Medicine, the research team isolated a protein from human blood that looks like EGFR, but is actually a closely related variant called serum sEGFR. They showed that Cetuximab binds equally as well to serum sEGFR as it does to the intended EGFR cancer target. Those study results showed that sEGFR might act as a decoy receptor in the blood of cancer patients, tying up Cetuximab and therefore limiting the amount of Cetuximab that actually gets to the intended target.

### Yale Researchers Design a Better Way to Discover Drug Candidates

Nat Chem Biol. 2011 Jul 3;7(8):538-43.

Yale researchers have devised a novel way to trick cells into getting rid of problematic proteins, a method that could help pharmaceutical companies quickly identify promising targets for new drugs. Drug companies spend hundreds of millions of dollars to design small molecules that fit into folds of proteins and inhibit their function. The new technique, developed by Craig Crews, PhD, the Lewis B. Cullman Professor of Molecular, Cellular and Developmental Biology at Yale University, will help determine which of these proteins are good targets for drug development.

### Non-Dermatologists Miss Many Cancerous Skin Lesions

Arch Dermatol. 2011 May;147(5):556-60.

A new study by Yale School of Medicine finds that non-specialists miss many cancerous skin lesions in exams, and that only a total body skin exam (TBSE) by a dermatologist can ensure they will be detected. In addition, the findings suggest the increasingly common use of teledermatology (in which non-specialists communicate skin conditions to a dermatologist long-distance via audio, video and data techniques) has the potential to miss many cancerous lesions.



**More than a decade ago** Lieping Chen, MD, PhD, Professor of Immunobiology and Co-Director of the Cancer Immunology Research Program at Yale Cancer Center, noticed something odd in his experiment at Mayo Clinic; when he cultured T lymphocytes with human cancer cells they stopped attacking the cancer and shut down. Dr. Chen suspected that the cancer cells were somehow tricking or counter-attacking the lymphocytes. He soon discovered how: the tumor cells were releasing disinformation that instructed the lymphocytes to paralysis by overly displaying a protein called B7-H1. Dr. Chen's

research has led to an immunotherapy that holds tremendous promise for some cancer patients.

"My laboratory is interested in understanding how cells talk to each other," explained Dr. Chen. "Molecules on the cell surface bind to each other and communicate through biochemical signals that either push the cells into action or suppress their activity. With cancer, the communications go wrong." B7-H1 is one of such suppressive molecules that was identified in Dr. Chen's laboratory in 1999.

Dr. Chen found that B7-H1 on cancer cells instruct T lymphocytes to stop attack via a lymphocyte molecule called Programmed

Death 1 (PD-1). When immune cells sense an invader, they signal other immune cells to rally for an attack. But cancer cells display B7-H1 to convince immune cells to stop calling for reinforcements, which lets the cancer cells escape from immune destruction. This interaction turns off the cell's immune response.

"But if you block this miscommunication," said Dr. Chen, "you can rescue the T lymphocyte. Many lymphocytes around the tumor cells actually revive and become active again." A biopharmaceutical company named Medarex turned Dr. Chen's discovery into an anti-PD-1 drug that is a monoclonal antibody designed to prevent the binding interaction of B7-H1 and PD-1 and allows the lymphocyte to do its job—fight the cancer.

Mario Sznol, MD, Co-Director of the Melanoma Program at Smilow Cancer Hospital, read about Dr. Chen's discovery in 2002 and immediately sensed its potential clinical applications. A few years later when he learned that the company would soon begin multi-dose trials in several places, he snagged one of the slots for Yale. In November 2008 the first patients enrolled, representing five cancers: melanoma, kidney, prostate, colon, and lung.

"We saw remarkable initial responses in some patients," said Dr. Sznol. By 2010, the tumors in 15 of the 46 advanced melanoma patients had shrunk by at least 50 percent. Similar results were observed in a small number of kidney cancer patients, and there were indications of meaningful activity in non-small cell lung cancer.

"About a third of melanoma and kidney cancer patients responded," said Dr. Sznol. "For a phase I trial that's remarkable."

Equally remarkable, added Dr. Sznol, the drug's effect in many patients appears long lasting. Cancer typically begins to grow again during treatment or once treatment stops, but many of the tumors treated with anti-PD-1 have not. Preliminary data suggest that the drug triggers the immune system to generate "memory T lymphocytes" that are long living and see through the cancer cells' deceptive signals and kill the new tumor cells.

Data for the lung cancer patients in the trial aren't yet available, but Scott Gettinger, MD, Associate Professor of Medical Oncology and a co-investigator for the Yale trial, is excited by the new drug's potential. He has about 30 patients enrolled, the largest number of lung cancer patients among the dozen cancer centers participating in the trial.

At first he was skeptical. "No immunotherapy has ever worked in lung cancer," he said. "But I've had a handful of patients who've had dramatic responses to this drug, and the responses seem to be long-lasting. It's also incredibly well tolerated. The vast majority of patients have had no side effects. That's unheard of."

Several of Dr. Gettinger's patients have already undergone four or five lines of chemotherapy. "With lung cancer or any cancer," said Dr. Gettinger, "after a patient receives one line of chemotherapy, the chances of responding to additional lines of therapy go down successively. So you would expect none of these patients to respond to this drug, but several have."

Dr. Sznol believes this anti-PD-1 drug is "the tip of the iceberg" because it targets only one pathway. He expects researchers to find others. "I think immunotherapy will become one of the dominant methods, if not the predominant method, for treating many cancers," he said. "Agents targeted to cancer mutations and internal signaling are effective, but they don't result in cures for most cancers, whereas I think the immunotherapies eventually will."

Yale clinicians will begin new trials of the drug soon. Roy S. Herbst, MD, PhD, Chief of Medical Oncology and Associate Director for Translational Research at Yale Cancer Center, said, "The fact that we have both the basic science and the clinical capabilities to study this really speaks for the advanced state of translational research here, and to the way we want to address cancer in the future." ☺



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Dr. John Wysolmerski, Director of the new Bone Clinic at Smilow Cancer Hospital at Yale-New Haven, discusses a patient's options with her.

## Helping survivors stay strong

**Martha Highsmith seemed stuck** in a medical Catch-22. When she was diagnosed with breast cancer, she was already in treatment for a loss of bone density referred to as pre-osteoporosis. The catch: Chemotherapy can accelerate bone loss. “I was willing to take the risk with aggressive cancer treatment,” explained Ms. Highsmith. But she added, “I didn’t want to be cured of the cancer and die from a broken hip.”

Fortunately, Highsmith’s oncologist collaborated with Dr. John Wysolmerski, MD, a Yale Professor of Endocrinology who specializes in osteoporosis. Dr. Wysolmerski developed a regimen of medication, nutritional supplements, and exercise to stabilize her bone loss while she underwent treatment. In the intervening nine years, Ms. Highsmith has had a few bumps and slips but no fractures.

“I plan to live a long time and I want the best care I can get,” she said. “That means not just taking care of the cancer but taking care of my bones and everything else.”

A Bone Clinic will open at Smilow Cancer Hospital at Yale-New Haven in October to provide exactly that sort of care to cancer patients and survivors. The clinic will be one of the first of its

kind in the country, according to Dr. Wysolmerski, and will also work to advance research into treatments to prevent bone loss in cancer patients. The clinic will begin by serving breast cancer patients and later expand to focus on other cancers as well.

One study showed that the risk of osteoporosis quadruples in women who have had a breast cancer diagnosis before the age of 50. Prostate cancer is also a predictor of osteoporosis. Both forms of cancer, notes Dr. Wysolmerski, are often treated with drugs that affect hormones, such as estrogen and testosterone, which are involved in the maintenance of bone metabolism.

“When Smilow opened, it seemed like a good time to take my research interests and move them a little closer to my clinical practice,” explained Dr. Wysolmerski.

His laboratory studies how the breast instructs the body to draw calcium away from the bones and put it into milk when a woman is nursing. This normal and temporary process is similar to what can happen to cancer patients during treatment and that makes it an ideal vantage point for studying bone loss and developing ways to treat it.

In addition to seeing individual patients, the clinic will gather oncologists and bone specialists to review all the available science on bone loss and cancer

treatment. The team will formulate guidelines on what diagnostic tests and treatments work best in different situations. Those protocols will inform every patient’s care at Smilow.

Plans for the Bone Clinic include accelerating research by forming a nationwide consortium with other leading academic centers that are studying cancer and bone loss. Ultimately, patients at the clinic could be among the first to have access to new and developing treat-

ments, as Dr. Wysolmerski will work to attract more clinical trials to Yale. He also plans to develop a database linking cancer and bone density diagnostics with the specific treatments patients received. “I think that would be a very valuable research tool, which will enable us, ultimately, to ask if our treatments are preventing fractures,” he said.

For many cancer survivors, bone health will be a long-term concern. After her initial treatment, Ms. Highsmith’s oncologist wanted her to continue taking medication to prevent recurrence. Initially, it was Tamoxifen. But after she’d been on that drug for the maximum number of years, letrozole was the next choice. Bone loss, however, is a letrozole side effect.

Dr. Wysolmerski was able to fine-tune a course of treatment that would protect her bones well enough to make her feel good about taking letrozole. This kind of



PETER BAKER

balancing between different health goals is fundamental to what the Bone Clinic will be doing. “You’re not just treating a tumor,” said Dr. Wysolmerski. “You’re treating a patient.”

Ms. Highsmith took “a long-term view” toward her cancer and general health. “It was good to have a doctor who was philosophically where I was,” she said. ☺

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ISTOCKPHOTO.COM/DAVID B. GRAY

## Yale and Gilead Sciences

### Announce Cancer Research Collaboration

Last spring, Yale University President, Richard C. Levin, announced that Yale had forged a multi-year research alliance with Gilead Sciences, Inc., a biopharmaceutical company based in Foster City, California, to accelerate the discovery and development of new drugs to treat cancer.

Gilead will provide up to \$40 million to support cancer research at Yale School of Medicine over four years, and a total of up to \$100 million—the largest corporate commitment in Yale’s history—for the full 10 years outlined in the agreement. Yale maintains ownership of all intellectual property generated by the research, and Gilead will

have the first option to develop any compound it deems promising.

“The collaboration brings together one of the world’s top research universities and a biopharmaceutical company dedicated to addressing unmet medical needs, with the goal of finding new treatments for cancer,” Levin said. “This truly



“This truly is transformative support that leverages Yale Cancer Center’s top scientists, our West Campus technology investments, and the resources of the new Smilow Cancer Hospital. I can’t think of a better partner to have in this collaboration than Gilead.”

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Gilead’s Chief Scientific Officer, Norbert W. Bischofberger, PhD, Executive Vice President, Research and Development, says that pairing with Yale dovetails well with the company’s current focus on oncology. “Based on the strong track record of the Yale cancer research team, I am confident this collaboration will lead to important advances in the understanding of the genetic basis of cancer as we collectively seek to develop novel targeted therapies for patients in areas of unmet medical need.”

The project will be governed by a six-

member Joint Steering Committee chaired by Joseph Schlessinger, PhD, Director of the Cancer Biology Institute and Chair and William H. Prusoff Professor of Pharmacology at the School of Medicine. Dr. Schlessinger led the development of two of the most significant targeted cancer therapies of recent years: Sutent, a treatment for stomach and kidney cancers, and PLX-4032, a compound that has had unprecedented success in the treatment of malignant melanoma, one of the deadliest and most intractable cancers. (PLX-4032 is expected to receive FDA approval in the coming months.)

In the collaboration, tumor samples will be analyzed to identify gene mutations that disrupt normal cellular functions and promote the uncontrolled cell growth and metastasis seen in cancer.

Mutations are believed to underlie the development of drug resistance in cancer, and the team will explore this phenomenon as well. Next, the painstaking process of crystallizing the mutated protein to discern its structure begins, with the aim of revealing sites where drug molecules or antibodies can block cells’ aberrant behavior. After a compound is refined for maximum effectiveness, it can be tested in animals, and finally in humans. Genomics may then enter the picture again to determine the profile of each patient’s tumors to create personalized therapies.

“When we find cancer targets that are new, we will work with Gilead on designing drugs, which they can then test in the clinic,” Dr. Schlessinger said. “This is a tremendous opportunity for Yale and Gilead.”



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Dr. Joseph Piepmeier in the control room of Smilow Cancer Hospital's intra-operative MRI operating room suite.

## Unique MRI OR Suite Revives Hopes and Saves Lives

“We can do things no one else can do,” said Joseph M. Piepmeier, MD, Co-Director of the Brain Tumor Program at Smilow Cancer Hospital and the Nixdorff-German Professor of Neurosurgery. “Specifically with brain tumor work. Over the last year we’ve had several patients who were turned away at other major medical centers that couldn’t take the tumor out. Whereas we could. And did. We’ve had some smashing successes.”

The reason is Smilow Cancer Hospital’s new 3T (Tesla) MRI integrated suite for neurosurgery and neurovascular procedures—the only such unit in the United States. The

unique suite features a powerful MRI housed between two operating rooms. The MRI moves between the ORs on overhead tracks, allowing surgeons to take high resolution pictures throughout the procedure, without moving the patient.

In the past, patients got an MRI before

surgery and then were taken to the operating room. At some point after the procedure, the patient, now connected to various intravenous lines and tubes, was returned to the MRI room, where the surgeon learned whether the tumor had been completely removed and whether there were any complications. Each of these steps jeopardized safety and success.

By contrast, Smilow’s integrated suite puts the MRI right in the operating room and the patient doesn’t move. “That’s an enormous safety advantage,” Dr. Piepmeier said. “We can take high resolution images during surgery and target the abnormality with high precision, and we can see that we have accomplished exactly what we wanted to do. It also gives you confidence that no other problems have occurred during the treatment.”

These advantages can be the difference between life and death, hope and hopelessness. Three months ago a patient came to Smilow with a large deep brain tumor that was also wrapped around an artery. Other cancer centers had told the patient it was too risky to operate because surgery would likely leave him paralyzed and mute. But because of the MRI suite, Dr. Piepmeier could map the specific areas of the brain that needed protection, and take pictures during the surgery to confirm that those areas stayed protected and that the tumor was removed.

**“We can take high resolution images during surgery and target the abnormality with high precision, and we can see that we have accomplished exactly what we wanted to do. It also gives you confidence that no other problems have occurred during the treatment.”**

“Two days after surgery,” Dr. Piepmeier said, “he walked out of the hospital. So when others say, ‘No, we can’t do it,’ come by and let us take a look at it.”

The suite, which has been open since July 2010, grew out of a year’s research by Dr. Piepmeier and several other Yale physicians. They visited other sites, evaluated the available technology, and decided they wanted a two-room operating suite with MRI and bi-plane angiography. Their ideas were given concrete form by the medical technology company IMRS.

The suite’s unique properties necessitated special training. Because the MRI is such a powerful magnet, anything metal brought into the OR can become a projectile. Every time the magnet is used, the surgical team goes through a safety checklist, similar to the checklists used by pilots. At first Dr. Piepmeier worried that opening the OR door to bring in the MRI might increase the risk of contamination and infection, but in fact the infection

rate went down. “That’s because we hand-picked the best people to do this,” said Dr. Piepmeier. “We’re very safety-oriented.”

Dr. Piepmeier says the suite is revolutionizing treatment for today’s patients, but he is equally enthusiastic about the suite’s future uses. He foresees the ability in the near future to target each patient’s specific genetic mutation with a novel therapeutic treatment that, with the MRI’s help, can be delivered to precise areas of the brain while being monitored in real time.

He looks forward to taking lab research being done by Yale scientists and translating it into clinical practice. For example, he is now working with W. Mark Saltzman, Chair of Yale’s Biomedical Engineering Department, on developing biodegradable nanoparticles that can carry chemotherapy, antibodies, and gene transfers to pinpointed spots in the brain that can’t be reached safely by surgery. “We’re headed in exciting new directions,” he said. ☺



## Please Give So that We May Get **Closer to Free**

**Yale Cancer Center** and Smilow Cancer Hospital at Yale-New Haven have joined forces to create Closer to Free – a fund, which provides essential financial resources for breakthrough cancer research and compassionate patient care by combining the gifts of many donors. This support is critical to ensure that new research can be pursued without delay, promising treatments are aggressively developed, and patient care is continuously enhanced. The generous support of Closer to Free donors accelerates our ongoing work and helps to launch important new research projects and patient programs at Yale and Smilow.

The support of the community is integral to the success of Closer to Free. In early September, the first annual Closer to Free Bike Ride was held and involved over two hundred riders and volunteers, all of whom participated in various ways to raise funds and awareness to support the Closer to Free mission.

We value the efforts of our donors, volunteers, and advocates. There are many opportunities for members of the community, patients and their families, cancer survivors, and those passionate about cancer research and patient care to become involved in the mission of Closer to Free. Individual contributions as well as organized efforts to raise funds through events all can have an impact. ↻

FOR MORE INFORMATION ON HOW YOU CAN HELP, VISIT THE WEBSITE AT [GIVECLOSERTOFREE.ORG](http://GIVECLOSERTOFREE.ORG).

the world is  
closer to free.



**The World is Closer to Free thanks to the ground-breaking science and patient-centered care at Smilow Cancer Hospital and Yale Cancer Center.**

Smilow Cancer Hospital at Yale-New Haven and the physicians of Yale Cancer Center have launched a communications and advertising campaign designed to raise awareness of the cutting edge care at Smilow Cancer Hospital, and the innovation and research focused on finding treatments and cures for cancer at Yale. The media campaign, using the rallying tagline “The World is Closer to Free,” reaches across all media: TV, radio, online, and newspapers.

To see the commercials that have already begun to air and learn more about how personalized medicine is revolutionizing cancer treatment, log on to [www.closetofree.com](http://www.closetofree.com).

The television commercials — 60-seconds and 30-seconds in length — have aired on all of the major TV stations as well as key cable network channels across the state of Connecticut and into Westchester County, New York. In addition, 30-second radio commercials will run on major Connecticut radio stations that primarily reach the New Haven, Bridgeport and New London markets, as well as the secondary markets of Hartford and Stamford.





Q+A

## meet the physician

# Stuart E. Seropian, MD

## Associate Professor of Hematology

### What is the biggest advance in the field of stem cell transplantation?

One of the major advances in the field of stem cell transplantation in the past decade has been the development of reduced intensity allogeneic stem cell transplant techniques. Allogeneic transplantation involves replacing a patient's blood and immune system with stem cells from a related or unrelated donor. Previously, we could only offer this type of transplantation to patients younger than sixty years of age because of the requirement to use high doses of chemotherapy or radiation to ensure the donor cells would be accepted by the patient. With reduced intensity transplant techniques we can now successfully perform these types of transplants without the side effects of high dose chemotherapy. Most patients with leukemia or lymphoma are older than sixty years of age and can now be offered this potentially curative therapy.

### You have focused your clinical research efforts on improving stem cell transplants for patients. How have outcomes improved?

The outcome for transplantation has steadily improved due to many factors. The laboratory

testing we employ to match the immune systems of patients and donors has become much more accurate, which has resulted in fewer complications with the immune system after transplant. We also have better medications to control the immune system and fight infections after transplant. In the 1990s a transplant from an unrelated donor was much more dangerous than a transplant from a family donor. Today, in many cases, a transplant with a well-matched unrelated donor is considered to result in the same outcome as a transplant from a family donor.

### How do you encourage patients to participate in clinical trials when opportunities are available to them?

A well-designed clinical trial offers the chance for a patient to receive a new therapy with the potential for a better outcome than a standard therapy. It's easy to encourage patients to participate in studies when we have promising new treatment approaches to offer.

### When is a reduced intensity transplant the best option for patients?

Many patients with leukemia or lymphoma cannot be cured with standard treatments. If the patients are older, or have significant medical problems, they are often not able to go through the process of standard stem cell transplantation. A reduced intensity transplant offers these patients a chance at cure that would otherwise not be possible.

## Kevin Becker, MD, PhD

Kevin P. Becker, MD, PhD was recently appointed Assistant Professor of Neurology in the division of neuro-oncology at Yale School of Medicine. Dr. Becker specializes in the treatment of patients with brain tumors and will be an integral member of the Yale Cancer Center and Smilow Cancer Hospital Brain Tumor Program. His clinical and research focus is on the development of novel chemotherapeutic treatments through clinical trials. Dr. Becker works in close collaboration with Dr. Joachim Baehring at Yale and has extensive experience in the chemotherapeutic treatment of patients with brain tumors.

A graduate of Statue University of New York, Dr. Becker received his medical degree from Medical University of South Carolina. He completed his internship and residency at Yale-New Haven Hospital.



## Bonnie Gould Rothberg, MD, PhD, MPH

Bonnie Gould Rothberg, MD, PhD, MPH has been appointed Assistant Professor of Medical Oncology. She will focus her efforts on translational research, specifically in cancer epidemiology and tumor banking. Previously, Dr. Gould Rothberg worked in the laboratory of Dr. David Rimm. She will continue to work on Yale's DNA sequencing efforts and is the principal investigator on an NIH funded grant to study prognostic markers in metastatic melanoma.

Previously, Dr. Gould Rothberg served as the Director of Clinical Development for the Rothberg Institute for Childhood Diseases and Group Leader for Medical Affairs at CuraGen Corporation. Dr. Gould Rothberg received her doctorate degree in Epidemiology from the Yale Graduate School of Arts and Sciences and both her medical degree and master's degree in public health from Yale School of Medicine.



## Peter Koo, PhD

Peter (Ja Seok) Koo, PhD will join the Yale Cancer Center faculty on October 1 as an Associate Professor of Medical Oncology. He will focus his laboratory research efforts on translational science. Dr. Koo is currently an Associate Professor in the department of medical oncology (thoracic/head and neck) at MD Anderson Cancer Center. He is a principal investigator of an NCI funded project looking at the "Role of CREB in Lung Cancer Development." Dr. Koo is also interested in identification of new therapeutic targets and development of new drugs for lung cancer treatment.

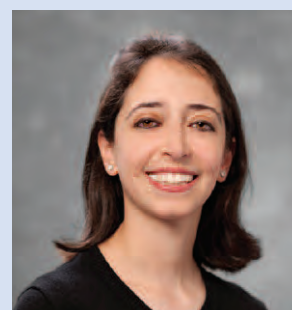
Dr. Koo received his undergraduate and master's degree from Pusan National University in the Republic of Korea and his doctorate degree in biological chemistry from the University of North Carolina at Chapel Hill. He did his fellowship training at Duke University Medical Center.



## Shari Damast, MD

Shari Damast, MD recently joined the department of therapeutic radiology at Yale School of Medicine as an Assistant Professor. Dr. Damast will care for patients with gynecologic malignancies in the Gynecologic Oncology Program at Smilow Cancer Hospital. Her research interests include quality of life and sexual health outcomes of women with gynecological cancers. Before joining Yale Cancer Center, Dr. Damast was the Chief Resident in Radiation Oncology at Memorial Sloan-Kettering Cancer Center.

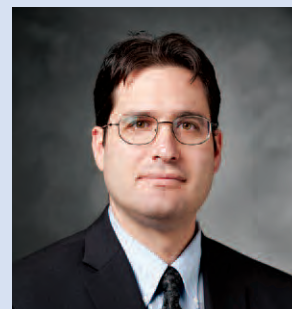
A graduate of Yale University, Dr. Damast received her medical degree from Weill Medical College of Cornell University. She completed her internship at Beth Israel Medical Center and her residency training at Memorial Sloan-Kettering Cancer Center.



## Daniel Morgensztern, MD

Daniel Morgensztern, MD has been appointed to the Yale Cancer Center faculty as an Assistant Professor of Medical Oncology. He specializes in the treatment and care of patients with lung cancer and has experience in clinical trial development. Dr. Morgensztern divides his time between patient care and clinical research. Before joining Yale Cancer Center, Dr. Morgensztern was an Assistant Professor of Oncology at the Washington University School of Medicine in St. Louis, MO.

Dr. Morgensztern received his medical degree from Fundacao Tecnico-Educacional Souza Marques in Brazil. He completed his internship, residency, and fellowship in hematology/oncology at the University of Miami. He is the recipient of an American Society of Clinical Oncology Young Investigator Award and Merit Award.



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**“I have survived to see the advancements** being made at places like Yale Cancer Center. I can remember vividly what treatment was like over 30 years ago and know how much it has changed for the better since then.”

Jen—Three time cancer survivor

Yale Cancer Center aims to be a global leader in cancer care, research, and education. Over 350 scientists and physicians at Yale Cancer Center collaborate to make the discoveries that advance the prevention and cure of cancer, while providing the very best in clinical cancer care to our patients at Smilow Cancer Hospital at Yale-New Haven in a supportive, patient-centered setting.