

Yale Cancer Center

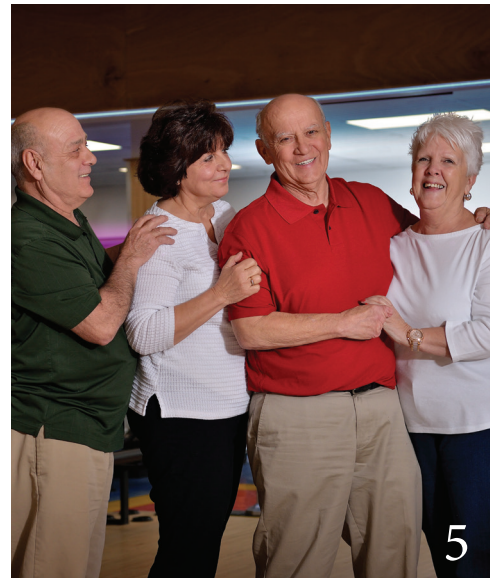
# centerpoint

MAGAZINE



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spring | summer 2018



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### centerpoint

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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## director's letter



**There are many unsung heroes in cancer care.** Our teams of scientists, physicians, nurses, and caregivers that we often highlight are supported by innumerable staff and volunteers who make Yale Cancer Center and Smilow Cancer Hospital an outstanding place. Our volunteers help to raise our standards of patient care each day. With over 25,000 hours of dedicated time to our mission each year, their devotion to our patients is inspiring.

This issue of *Centerpoint Magazine* also highlights devotion to rare cancers, which often lack substantial research attention because of the relatively small number of patients diagnosed each year. Angioimmunoblastic T-cell lymphoma has not had a breakthrough or change in treatment outcomes in 20 years, yet Drs. Francine Foss and Elias Lolis are working to change that with new targeted therapies for patients.

Similarly, Drs. Iris Isufi and Michal Rose collaborated to care for a patient who was diagnosed with blastic plasmacytoid dendritic cell neoplasm (BPDCN), developing a treatment plan for him based on data from only a few hundred documented cases of the disease. Expertise and collaboration for the care of all of our patients is a pride point for Smilow Cancer Hospital and a recurrent theme in both our clinical and scientific settings.

I am pleased to announce that this spring, three of our own received one of the highest honors awarded to scientists - Akiko Iwasaki, PhD, Haifan Lin, PhD, and David G. Schatz, PhD were elected to the National Academy of Sciences for their outstanding research achievements. They join 14 other Yale Cancer Center members of the National Academy of Sciences!

The recognition of the elite science at Yale Cancer Center illustrates one of the many advantages of caring for patients in an academic cancer center. The partnerships between our laboratories and clinics, and our capability to impact translational research, creates endless opportunities and advances in cancer research. I look forward to sharing more advances with you in the next issue of *Centerpoint Magazine*.

Sincerely,

Charles S. Fuchs, MD, MPH  
 Director, Yale Cancer Center and  
 Physician-in-Chief, Smilow Cancer Hospital



**On the Cover**  
 Smilow Cancer Hospital volunteers give their time weekly to benefit patient care at our hospital.

Peter Baker **photographer**

**W**hen you're designing a new hospital from the ground up, you have the ability to make room in the floor plan and the budget for what is most important. When Smilow Cancer Hospital first opened, it launched with two volunteer coordinators on staff to manage and grow the remarkable volunteer program that is a vital component of patient care.

And grow it has. In 2017, volunteers at Smilow Cancer Hospital and its Care Centers logged a grand total of 25,893 hours. Volunteers of all ages, backgrounds, and skills dedicate their time, effort, and energy in service to Smilow's patients and staff.

"We have an incredibly talented staff at Smilow who are unsurpassed in terms of clinical medical care," said Lynelle Abel, Director, Volunteer and Guest Services at Yale New Haven Hospital. "What makes the margin of difference is what our volunteers bring to the experience for our patients."

#### MUSIC TO THEIR EARS

The lobby is where most patients and their families form their first impression of Smilow. It's there you will find Tom Ciancia behind the Yamaha grand piano every Monday afternoon, providing a soothing soundtrack for an experience he understands all too well.

"Both my mother and sister died of cancer," he said. "I remember what it was like going with them to the hospital and how emotional it was." After he retired as a benefits administrator and made his lifelong passion for piano his second career, he sought out the opportunity to share his time and talent through Smilow's volunteer program.

The healing power of music reaches Smilow patients through a number of volunteer efforts. Carolers deck the halls with song during the holidays. The Song Circle for Healing brings together patients, staff, volunteers, and family members twice a month to sing and play music together in the resource center. Performers serenade patients at their bedside as well as at birthday parties and other special events. But the lobby pianists are the anchor, accounting for nearly 70 percent of the hours donated through the music program in 2017.

Mr. Ciancia always takes a read of the room before launching his weekly performance. If the lunchtime crowd is younger, he might include a recent hit like Sam Smith's "Stay with Me." He's well versed in the big-band hits of the '40s and crooners of the '50s for older visitors. His playlist runs deepest in hits of the '70s, '80s, and early '90s. "I like to play soft, soothing music to make it relaxing for people," he explained. "I try to put in some uplifting songs, too, but in a mellow style."

His playing has struck a chord with his audience, which is an ever-changing mix of patients, families, physicians, staff, and volunteers. "It is very rewarding when someone comes up and says it sounds great, or writes me a note," he said. "I always joke that I am the last person you would want in a medical crisis, but I can play the piano for a good cause."

## Smilow's vast volunteer program touches every element of the patient experience *Service Calls*

Kristin Rattini writer Peter Baker photographer





### SERVICE WITH A SMILE

There was no doubt where Mr. Ciancia's talents could be best used at Smilow. However, not all volunteers have as clear of a vision; they just know that they want to make a difference. Ms. Abel helps bring that vision into focus during the screening process.

"All the volunteers are required to go through a similar onboarding process that our employees do," she said. "They are interviewed. They have a background check, reference check, and health screening. We take it very seriously and screen carefully before we allow a volunteer into any part of the hospital. We discover in that process where their skill set may be best suited. We have around 60 volunteer positions. Not all volunteers want to work directly with patients. Some prefer behind-the-scenes work, such as a clerical position. We try to make a match depending on the volunteer's comfort level, communication skills, and previous experience."

May-May Cheng knew she wanted to volunteer with cancer patients but wasn't sure in which capacity. "I've had experience as a caregiver three times in my life for people close to me who had cancer," she said.

After her screening, Ms. Cheng was assigned to the customer services program. These volunteers are among the most visible and widespread in the hospital. Easily identifiable in their red jackets and red polo shirts, they provide a reassuring, positive presence, as well as meals, supplies, information, and other support in key locations. Ambassadors are a mainstay of the customer service

program; they greet all patients and visitors as they enter the lobby of Smilow. Similar smiling faces serve in the Breast Center and the Smilow Patient and Family Resource Center. They circulate through treatment areas with the Look Your Best Basket at Yale (LYBBY) cart, also known as the Looking Forward Program. The cart provides donated bandanas, lip balms, lotions, and other patient care items and support materials.

For her role in the customer services volunteer program, Ms. Cheng makes the rounds of every patient room on the hematology/oncology inpatient floor every Saturday. She sees herself as looking after not only the patients' physical needs—a warm blanket, a snack, a magazine for entertainment—

"I try to do whatever I can to help."

but their spirit as well. "I try to do whatever I can to help," she said. "What I do is not a big deal. But I know by their reaction that I am doing something positive, to give them pleasure and help them actively participate in life."

### A HEALING HELPING HAND

Like oncology medicine itself, Smilow's volunteer program is always evolving. Feedback from patients, family, staff members, and volunteers themselves helps to shape the current offerings and inspire new ones.

Anne-Marie Rosaler has played an active role in that process. After her treatment at Smilow for early stage breast cancer in 2011, Ms. Rosaler knew she wanted to return as a volunteer. She has since served in many roles during her weekly volunteer shift: staffing the LYBBY cart, participating in the early stage breast cancer support group, and helping relaunch the Patient4Patient

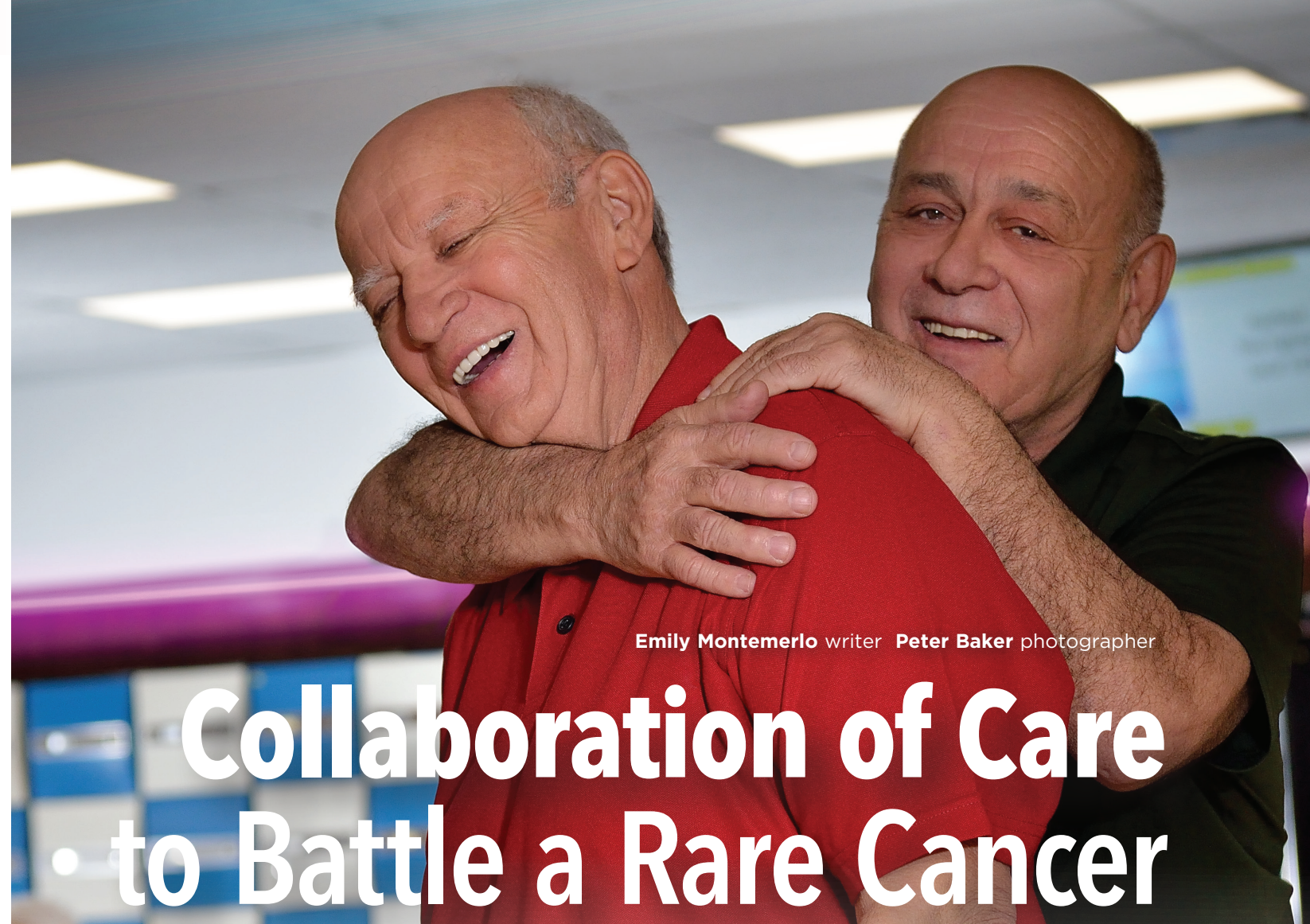
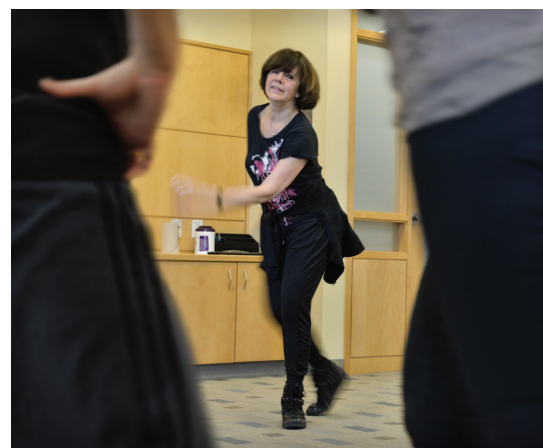
one-on-one counseling program.

But Ms. Rosaler felt that something was missing: Zumba. The exercise program had helped her quickly recover her health and strength after her treatment. "It was fun and so helpful to me mentally and physically," she explained. "I thought, 'This is a good idea to share with other patients.'"

She took her idea to the Integrative Medicine (IM) Program, where other volunteers were already providing Reiki and creative expression. Their services accounted for around 960 volunteer hours in 2017. "Integrative medicine makes use of all appropriate therapeutic and lifestyle approaches and healthcare disciplines to achieve optimal health and healing," explained Dana Brewer, Creative Expression Coordinator for the IM Program. "Volunteers allow IM to expand services and offerings, thus providing more choices to enhance the quality of life for our patients and families."

Ms. Rosaler had to fine-tune her proposal a bit. After she earned certification in a lower-intensity version called Zumba Gold, which was better suited for patients, she received enthusiastic approval to launch a twice-monthly class at Smilow. Her sessions are as much talk therapy as dance therapy, as participants share stories from their cancer journeys.

"For me, volunteering is therapeutic," she said. "To see so many volunteers sharing their time—often when they themselves are undergoing treatment—is so inspiring and comforting. I feel privileged to be a part of this community." 🔄



Emily Montemerlo writer Peter Baker photographer

# Collaboration of Care to Battle a Rare Cancer

Serving in the Army during the Vietnam War, Tom Jacquot faced many dangers, but he had no idea one of his greatest battles would come decades later, fighting an unfamiliar foe; cancer. After moving from Connecticut to North Carolina, Tom developed a purple, itchy spot on his back that his doctor thought might be a cyst. After a biopsy and several tests, it was confirmed that what he had was blastic plasmacytoid dendritic cell neoplasm (BPDCN), a rare cancer involving his skin, bone marrow, and lymph nodes. Since the first case of BPDCN was reported in 1994, only a few hundred cases have been recorded. Having received a diagnosis of an extremely rare and aggressive cancer, Tom knew two things for certain; he wanted to be treated at a world-class cancer center, and he wanted to be near family. This led him to The Veterans Affairs (VA) Comprehensive Cancer Center in West Haven under the direction of Michal G. Rose, MD, and to Smilow Cancer Hospital, under the care of Iris Isufi, MD, Assistant Professor of Medicine (Hematology).

Tom would come to refer to Dr. Isufi as his 'life-saver' and she got right to work on a treatment plan. Due to the rarity of his disease, there was not much data available on the best treatment options. It was up to Dr. Isufi and her team to come up with the best care plan for Tom. Knowing there is a high risk of recurrence, it was suggested that Tom undergo an allogeneic

stem cell transplant, where cells are transferred from a donor. Tom was treated with an aggressive leukemia chemotherapy regimen shortly after he arrived at Smilow. Treatment was challenging, requiring several hospitalizations; however, he responded very well to chemotherapy.

"Tom's cancer and treatment plan were very complicated and he underwent an aggressive treatment regimen. This required constant communication between myself and Dr. Rose's team at the VA to make sure he was receiving the correct prescriptions, tests, etc." said Dr. Isufi. "This is a disease that moves fast, and we had to be faster."

Following a one-month hospitalization under the care of a specialized stem cell transplant team, Tom's care continued in the Smilow outpatient transplant clinic. A few months after the transplant, Tom lost the donor stem cells, and arrangements were made for his donor to give more stem cells, and he underwent additional chemotherapy. This attempt was successful, and he has had 100% donor blood cells since then. Five years out from his transplant, and again living in North Carolina, Tom encountered other unrelated health issues. He was scheduled for a routine endoscopy to monitor his Barrett's esophagus, when he was dealt another blow—a diagnosis of stomach cancer.

"I say that God kept changing his mind about me," said Tom. "After receiving the first diagnosis and learning what my

prognosis was, I thought it might be the end for me, but then I met Dr. Isufi and that all changed. When I was diagnosed with stomach cancer, I knew there was no other place I could go for care; the team at Smilow had saved my life once, and there was no one else I trusted to do it again.”

After discussing Tom’s case at their weekly tumor board, and taking into account his current health and the fact that he had received a transplant, his care team again set to work creating a personalized treatment plan. He started chemotherapy with Dr. Rose, but when the side effects became too much, they discussed his case with Charles Cha, MD, FACS, Associate Professor of Surgery at Yale School of Medicine and determined he was a candidate for surgery. Tom underwent a laparoscopic gastrectomy. After removing 70% of his stomach and some surrounding lymph nodes, Dr. Cha was confident he had removed all of the cancer and that Tom would not need further treatment.

Dr. Rose commented, “Tom’s first diagnosis was a rare and aggressive one, and required the expertise of a high quality and specialized transplant center. His second cancer was not as rare, but treating it was more challenging given his prior transplant. Without the careful collaboration with Drs. Isufi and Cha, Tom would have faced a different outcome.”

Dr. Rose often collaborates with Smilow physicians to coordinate care for veterans. She commented that on average veterans have higher burdens of comorbidities and environmental exposures. Although it cannot be confirmed as a cause in Tom’s case since his cancer is so rare, Agent Orange, a powerful herbicide used during the Vietnam War to eliminate forest cover, is an established risk factor for many conditions including several cancers such as lymphoma, myeloma, lung and prostate.

Throughout his treatment and travel, Tom’s girlfriend Margaret remained by his side. She travelled every few weeks to be with him while he received treatment and cared for him at their home in North Carolina. His family was also a constant, with him every step of the way, at every appointment and when he was in the hospital. He moved in with his sister Catherine for two years so that she could care for him, and his brothers Richard and Frank stepped in when she could not be there, along with his brother-in-law and sisters-in-law. His sister, Miriam, also helped when she could, and his three children were always checking in. Tom commented that the added support from his family made all the difference and made it possible for him to continue with the aggressive treatments.

From the beginning, Tom commented that he never had to worry about a thing and that his care between the VA and Smilow was seamless. “Every mile was worth it to be at a center so dedicated to me and to my care. They are the reason I am here today,” said Tom. “Every doctor, PA, nurse, everyone I encountered, knew about my case and genuinely cared for me and my family.”

Shortly after leaving the Army in the late 1960s, Tom joined a bowling league, and it later became a way for him to bond with his daughter. They would spend every Sunday morning at the bowling alley, after having coached his son’s baseball teams. He now looks forward to sharing his passion for the sport with his grandchildren and great-grandchildren, of which he has many. Being able to spend more time with his family has made everything Tom has gone through worth it. He is also now feeling well enough to enjoy golf and travel again.

As much as Tom credits his doctors for their dedication, they have learned from him as well. Dr. Isufi has since treated patients with similar diagnoses and was able to use what she learned from treating Tom to provide more comprehensive care. The knowledge and expertise provided by both the VA and Smilow gave him a fighting chance, not once, but twice. ↻



“Every doctor, PA, nurse, everyone I encountered, knew about my case and genuinely cared for me and my family.”

# A Pathway Towards Better Therapies FOR T-CELL LYMPHOMA

**A**ngioimmunoblastic T-cell lymphoma (AITL) is a rare, fast-growing cancer typically diagnosed at an advanced stage. Treatment options have not improved for two decades. The consequence: a poor prognosis and survival rate.

Two scientists at Yale are working to change that outcome. Francine Foss, MD, Professor of Medicine (Hematology) and of Dermatology, and Elias Lolis, PhD, Professor of Pharmacology, are looking for ways to subvert and defeat AITL.

“Basically, we’re trying to develop novel targeted therapies for T-cell lymphomas,” said Dr. Foss, an internationally known expert on T-cell lymphomas. “As a first step, we are attempting to develop small molecule inhibitors,” explained Dr. Foss. “Our second step will be to develop other targeted therapies for AITL that kill the malignancy by a different mechanism, making drug resistance more difficult.”

Drs. Foss and Lolis are interested in two particular proteins because their interaction seems to promote cancer. Every AITL cancer cell secretes a type of protein known as a chemokine, specifically CXCL13 that binds to a receptor protein called CXCR5 on the same cell, which stimulates the cell to survive. In normal cells, the relationship between CXCL13 and CXCR5 is healthy and eventually leads to antibodies that fight invaders such as bacteria and viruses. But in AITL cells, the interaction sends signals that spur the growth of cancer.

The chemistry between these proteins in AITL cells may also have another effect. “Chemokines basically make cells move,” said Dr. Lolis, a structural biochemist. “Cells in lymph nodes also secrete CXCL13, and create a concentration gradient as it diffuses away. A tumor cell with the receptor CXCR5 senses differences in CXCL13 concentrations and moves toward increasing CXCL13 concentrations, which may lead to metastasis into other lymph nodes.”

Drs. Foss and Lolis believe that interrupting the CXCL13/CXCR5 pathway can slow or stop AITL’s spread and kill the cancer cells.

They first began discussing a collaboration in 2012 after a colleague, Demetrios Braddock, MD, PhD, Associate Professor of Pathology, suggested that Dr. Foss discuss her interest in cancer and chemokine receptors with Dr. Lolis, an expert in these proteins. They finally secured funding and the right mouse model, and are about to test their hypothesis in three experiments. Most of the work will be done in Dr. Lolis’ lab.

The first experiment involves a mouse model of AITL identified by an Australian lab. Left alone, about half of the mice in this model develop lymphoma within 4-6 months. Dr. Lolis developed genetic experiments to test the role of CXCR5 in AITL. “The first thing we’re going to do is delete the CXCR5 gene in young mice,” explained Dr. Lolis, “and then we’ll see what happens in six months. We want to know if CXCR5 is involved in development of the cancer. Our assumption is that it is.”

Steve Kemper writer Peter Baker photographer

For the second experiment, the researchers will wait until the mice develop AITL, and then delete CXCR5 to see what happens to the lymphoma. “In the best case,” said Dr. Lolis, “it will disappear. Or the tumor could shrink. In the worst case, nothing will happen. It’s going to take one or two years to work this out in the mice.”

The third experiment will be an AITL PDX study to test a small molecule antagonist (inhibitor) against human CXCR5 in mice. PDX stands for patient derived xenograft. In a PDX test, tumor tissue from a human patient is put into mice, where researchers can study how human cancer responds to various treatments. In this case, the tumor tissue will contain AITL, and the small molecule antagonist will prevent CXCL13 from binding to CXCR5 and having any pro-survival effects. Drs. Foss and Lolis are also working on other molecules that target AITL through a different mechanism. The human cells will survive in the mice for a couple of months, long enough to do experiments and gather data in a short time.

“We have collaborations with institutions that have different types of mice with T-cell involvement,” said Dr. Foss, “so we can test the compounds we’re developing with these other labs.”

Dr. Foss added that targeting these pathways in AITL might work because a similar approach has been successful against B-cell lymphomas and leukemia using a small molecule drug called ibrutinib. “It targets B-cell receptors,” she said. “So the paradigm for doing this already exists, but there are no drugs like that for T-cell lymphomas. This would be one of the first ones to be developed.”

She and Dr. Lolis are initially concentrating on T-cell lymphomas that express CXCR5, but they believe their findings may be relevant to other cancers that also express it, such as prostate cancer. Dr. Lolis mentions a study that showed that people with cutaneous T-cell lymphoma whose tumor cells don’t express CXCR5 live longer than patients who do make CXCR5. “So basically it’s an adverse prognostic factor,” said Dr. Foss, “which means we would be targeting the worst lymphomas with this new therapy.”

Looking ahead, Dr. Foss thinks a clinical trial is probably two or three years away. Despite the rarity of AITL, she doesn’t anticipate any trouble in filling a trial because there are no good options for AITL patients, who would eagerly come from all over to Yale or collaborating institutions for the treatment.

Dr. Foss describes her partnership with Dr. Lolis as “a great example of how synergy can develop. We were brought together by a colleague from pathology. It’s a good paradigm for translational science at Yale, bringing clinicians together with researchers.”

Dr. Lolis agreed. “It’s a true collaboration where basic biology has led to a preclinical trial and translational research.”



Francine Foss, MD  
Elias Lolis, PhD



PETER BAKER

## Investigating Disparities in Breast Cancer Outcomes

Lajos Pusztai, MD, DPhil

A few years ago, a group of Yale physicians and researchers drew upon the massive National Cancer Database to see if race played a role in how women with breast cancer responded to pre-surgical chemotherapy. The answer turned out to be yes, for some types of breast cancer. For instance, African-American women with triple-negative breast cancer (TNBC, also called HER2-negative) were significantly less sensitive to chemotherapy, meaning that their cancer was more likely to survive treatment. That increased the likelihood that their cancer would return, spread, and become fatal despite best current therapies.

What accounts for this racial disparity? That's the question being explored by several of those same Yale scientists in a new project. They already know, based on research done by themselves and others, that there is one strong

molecular feature that can predict response to chemotherapy in TNBC, regardless of race.

“And that marker is the number of immune cells in the cancer microenvironment,” said Lajos Pusztai, MD, DPhil, Professor of Medicine and Co-Director of the Genomics, Genetics and Epigenetics Program, and also the project's primary investigator. “The more immune cells there are, the more likely the cancer will respond to treatment. So maybe the reason why African-American women with triple-negative breast cancer don't respond as well to chemotherapy as other races is that they have fewer, or less active, immune cells in the cancer.”

Chemotherapy works by killing or damaging cancer cells. It is widely believed that chemotherapy-damaged cells get finished off by swarms of immune cells that respond to the tissue damage. But if the number of immune cells in the microenvironment is low, some of the damaged cancer cells can elude the attackers, recover, and resume growing. That's what Dr. Pusztai and his colleagues suspect is happening among African-American women, and it's the hypothesis they are testing in the new project, whose three components are now underway.

“First we need to establish that the lower response rate of African-American women is due to lower immune activity in the microenvironment,” said Dr. Pusztai. They are investigating that with data from The Cancer Genome Atlas (TCGA), comparing immune gene expression patterns in TNBC among African-American women and non-African-American women.

Second, they are validating those findings in an independent cohort with tissue taken from women with TNBC treated at Smilow Cancer Hospital. The patients in the cohort are being matched for many variables, such as age, time of diagnosis, tumor size,

and tumor grade. One of Dr. Pusztai's research partners, David Rimm, MD, PhD, Professor of Pathology, Director of Pathology Tissue Services, and Director of Translational Pathology, is collecting the tissue from 50 African-American women with TNBC and 50 non-African-American women.

The third component is a clinical trial. African-American and non-African-American women will receive the standard pre-operative chemotherapy, but also immunotherapy

cancer survival in other countries, with very different racial composition than the U.S., you will find that people with lower socioeconomic status have poorer outcomes. This suggests a major role for socioeconomic factors in health care disparities. Indeed, African-Americans in the U.S. also have a higher rate of dying from prostate cancer, lung cancer, colon cancer, breast cancer, diabetes, kidney failure, and many other diseases which would be hard to explain solely

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**We want to see whether the weaker response to chemotherapy among African-American women with TNBC can be overcome...**

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in the form of a PD-L1 inhibitor called durvalumab. The drug stimulates the immune system.

“We want to see whether the weaker response to chemotherapy among African-American women with TNBC can be overcome by adding an immune-boosting drug,” said Dr. Pusztai.

If these studies confirm the hypothesis that African-American women with TNBC have fewer immune cells in the tumor's microenvironment, the next question is, why?

“One possible hypothesis is that there is some sort of shared racially-inherited genetic driver of lesser immune response to the cancer,” said Dr. Pusztai. “Another, perhaps more likely possibility, is chronic stress related to socioeconomic circumstances. If you look at breast

based on genetic predisposition.” However, socioeconomic status can have measurable effects on human physiology. “So, the next thing to study,” continued Dr. Pusztai, “is whether socioeconomic stresses can alter the immune system in the cancer tissue environment.” That could be tested by measuring stress hormones in the blood of people who are chronically stressed compared with people who aren't and correlate this with immune activity in the cancer microenvironment.

But at the moment he is focused on investigating whether boosting the immune system can improve outcomes for African-American women with triple-negative breast cancer. If so, then immune-stimulating drugs such as durvalumab may soon become standard of care and correct the disparity that is currently costing women their lives. ☺



PETER BAKER

## A Woman with a Vision

Roslyn Goldstein

Some people might say that Roslyn Goldstein has had a difficult life. “I was born in Brooklyn, but when I was three years old, my family moved to the Bronx in the middle of the night because we couldn’t pay the rent,” laughs the 80-year-old mother of two, and grandmother of six. Roz was whip-smart, but she knew from an early age that her parents would never have the money to send her to college. Instead, after high school, she got a job with the telephone company, then found paralegal work for a law firm, giving her parents half of every paycheck.

Her husband, Leslie, whom she met when she was 14, came from a different world. “One time, he mentioned Yale, and I said, ‘I know what Yale is—it’s a movie set where Peter Lawford and June Allyson danced in the movies!’ I had no idea it was a real school—that wasn’t in my realm of reality.”

The difficulties continued later on in life, when Roz was diagnosed with uterine cancer, then breast cancer. Then, a month after 9/11, her husband, whose office was near the World Trade Center, developed signs of dementia. “He was a math whiz,

a financial genius,” Roz recalled. “But a month after the towers fell, he couldn’t calculate a tip in a restaurant.”

Yet despite these hardships, Roz has always considered herself a lucky person. “I’ve been loved my whole life,” she said. “My grandparents adored me. My parents, who weren’t crazy about each other, loved me. And my husband adored me until the day he died.”

All that love, she says, put her in a different position than most people. “I didn’t have the downside of life,” she said. “And because of that, I felt like I had a responsibility—that I had a debt to pay.”

That sense of responsibility drove Roz to contribute \$500,000 to the Yale Cancer Center Discovery Fund, which was created specifically to advance fundamental scientific research that will ultimately reap clinical innovations. “The goal is to translate the outstanding science going on at Yale and move it toward tangible changes in the care of cancer patients,” explained Charles Fuchs, MD, MPH, Director of Yale Cancer Center and Physician-in-Chief of Smilow Cancer Hospital.

By its very name, the Discovery Fund is earmarked for high-risk projects that, if successful, have the potential to be game changers in the treatment of cancer. One Discovery Fund project, for instance, is focused on coming up with a novel, immunological-based therapy for cervical dysplasia. “We’re working to reengineer current cancer treatments so that they enter the tumor cell more deliberately, avoiding normal cells,” said Dr. Fuchs. “We start with great science, then use that science in clinical trials in a thoughtful way that enhances the likelihood of success.”

Roz began supporting cancer research 30 years ago, when a good friend was diagnosed with breast cancer, and she appreciates that kind of bold thinking. “I’m a pain in the

neck,” she said. “I don’t stop when people say no. I’m not interested in anything that makes a straight line from A to B. Sometimes, you have to go around obstacles.” After her friend died, she began raising money for cancer research “at a very high level,” including sitting on the board of advisors of the Breast Cancer Research Foundation. She also established the Leslie & Roslyn Goldstein Foundation, from which the gift to Yale’s Discovery Fund originated. “I’m asked all the time—‘You’ve invested

Indeed, Roslyn Goldstein is a woman of action, a larger-than-life presence for her son, a Yale alum, her daughter, and her grandkids. “My grandson asked me, ‘Bubbe [the Yiddish word for grandmother], how come you think outside of the box?’ And I said, ‘Because I can’t find the box.’ And I wanted research done by people who couldn’t find the box. That’s what the Discovery Fund is.”

Ultimately, she believes, success can only come if scientists are not

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**If people have hope that something is happening with a disease, even if a cure isn’t there yet, they’ll feel better about it.**

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so much into cancer research. How come they haven’t found a cure? People don’t realize that money doesn’t buy a cure. Money activates the brains that will find a cure.”

Investing in research, she believes, also fuels hope. “If people have hope that something is happening with a disease, even if a cure isn’t there yet, they’ll feel better about it,” said Roz, who nursed her husband through his battle with dementia for a decade. “I’ve convinced myself that by the time I have Alzheimer’s, they’ll have found a cure,” she laughed. “That helps me, and if I can do a little something to give people hope, that’s a good thing. I never want to say to myself, ‘If I had done this or this, then maybe that would have happened.’ I don’t believe in regrets, or what ifs.”

afraid to try things, not afraid to fail. “What I love,” said Roz, “is that every single experiment they are doing is being recorded—the successes and the failures. So people can look back and see what didn’t work—which brings them closer to something that does work.”

In research, as in life, “history is important,” said Roz. “Failures are also important. Any step you take is a step forward, even if you don’t see success in the moment.”

Dr. Fuchs agreed. “When you take something out of the lab and move it into the clinic, you don’t know if it’s going to work. But it’s philanthropy like this that enables us to take these kinds of risks and advance the battle against cancer.”





PHOTOS: HAROLD SHAPIRO

## Policy, Politics & Law of Cancer

**O**n February 8 and 9, a dazzling roster from the worlds of law, cancer, science, healthcare, government, and business gathered at Yale Law School for the first major conference ever devoted to the many ways these fields intersect, conflict, and influence each other. The conference, entitled “The Policy, Politics, and Law of Cancer” was a collaboration between Yale Law School’s Solomon Center for Health Law and Policy, Yale Cancer Center, and Smilow Cancer Hospital.

It was the brainchild of Abbe Gluck, JD, Professor of Law and Faculty Director of the Solomon Center, who was also its chief organizer. “Almost everybody we invited to participate said yes,” she said. “We found a real hunger among science people and people running hospitals to step back and talk policy for a day, so it was much easier than I expected to lure this kind of cancer star power.” She estimated attendance at about 500.

Some of the luminaries among the 43 speakers were Dr. Siddhartha Mukherjee, winner of the Pulitzer Prize for *The Emperor of All Maladies: A Biography of Cancer*, who gave a keynote address about reframing the way we think about cancer; Dr. Norman Sharpless, Director of the National Cancer Institute, whose keynote addressed

some of the biggest challenges facing cancer medicine; Dr. Harold Varmus, Nobel Prize Laureate, former Director of the National Cancer Institute and the National Institutes of Health, and former President and CEO of Memorial Sloan Kettering Cancer Center; Dr. Edward J. Benz, President and CEO Emeritus of Dana-Farber Cancer Institute; Dr. Margaret Hamburg, former Commissioner of the FDA; and Dr. Barbara McAneny, President-Elect of the American Medical Association.

The conference was divided into five panels that explored how government and law affect cancer research and patient care through policies, budgets, and regulations. The first panel, moderated by Ms. Gluck, posed the question, “Is the Federal Government a Productive Partner in Cancer Policy?” The answer was generally yes, with many qualifiers. Erik Fatemi, from the lobbying group Cornerstone Government Affairs, noted that the all-important budget of the NIH, unlike most agency budgets, has historically been treated as nearly sacrosanct by both political parties, partly because it isn’t fractured by earmarks for specific diseases. Dr. Hamburg warned that America’s preeminent role in biomedical research could slip—China now has the world’s largest gene sequencers and almost half of all clinical trials registered on ClinicalTrials.gov are being conducted overseas.

The second panel, entitled “The Business of Cancer,” may have been the most enlightening for many attendees. “Everybody was blown away by that panel,” said Ms. Gluck, “because most of the people involved with cancer every day never have the opportunity to stand back and think about the business model. The six people on the panel were extremely open about what they get paid for and what they don’t get paid for.”

For instance, Dr. Benz said that 40 percent of Dana-Farber’s business comes from people seeking second opinions, but their main profits result

from procedures and chemotherapy. Two panelists mentioned that many doctors have no idea about the price of drugs, and when given information about comparable drugs that cost 10 to 40 times less, they’re amazed. Abe Lopman, MBA, Senior Vice President of Operations and Executive Director of Smilow Cancer Hospital, shared the information—new to many in the audience—that for every dollar Smilow spends serving a Medicaid patient, the state reimburses just 30 cents. For a Medicare patient, the federal government reimburses 80 cents. For patients with private insurance, Smilow

been shattered. Now an exclusive new drug may be replaced within a few years, or become part of a combination therapy, changes that alter pharma’s R&D (Research & Development) equation.

The conference’s final panel addressed the legal and policy issues associated with cutting-edge cancer treatments. The discussion centered on big data and patient privacy. Massive databases that collect information about patients’ cancer types, genomic sequences, and mutations have played crucial roles in advancing cancer research. But these databases depend

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recaptures \$1.20 per dollar spent.

In the third panel, “Cancer, Health Justice, and Disparities,” an associate professor of medicine at the University of Chicago Medicine, Dr. Blase Polite, excited the audience with data that showed how Chicago, New York City, and Delaware virtually eliminated racial disparities for certain cancers through focused public health campaigns.

The fourth panel, “Drug Development and the Cost of Researching and Treating Cancer,” was moderated by Charles Fuchs, MD, MPH, Director of Yale Cancer Center and Physician-in-Chief of Smilow Cancer Hospital. He began by saying that after listening to Polite’s talk, he wanted Yale to choose a cancer and work to eliminate the disparities in treating it. Panelists pointed out that the traditional path of drug development, in which the high cost of producing a new drug could be recouped by dominating a market for years, has

upon participation by patients, which raises legal issues about privacy.

Roy S. Herbst, MD, PhD, Ensign Professor of Medicine and Professor of Pharmacology, and Chief of Medical Oncology at Yale Cancer Center and Smilow Cancer Hospital, pointed out that the newest cutting-edge treatments, though amazing, still don’t help the majority of cancer patients. The need remains acute for more data, more analysis, more drug development, and more trials with a greater diversity of patients. These needs, he said, will require stronger cooperation between academia, industry, and the public to produce better treatments for more patients.

“The networking and collaboration we were able to accomplish in two days was inspiring,” Dr. Fuchs said. “I look forward to continuing the conversations, and building on the ideas spawned during our discussions, and hope the momentum transcends from here.”



David H. Witt, MD  
Harold H. Tara, Jr., MD  
Justin Persico, MD  
Jerry Malefatto, MD

PETER BAKER

## Smilow Cancer Hospital Care Center - Trumbull

### PRACTICE AT A GLANCE

- A patient-centered focus on exceptional cancer care
- Over 1,100 patients visits in medical oncology and 800 in radiation oncology per month; 700 infusion visits each month
- Over 50 staff members
- A Smilow Surgical Specialty Center and Breast Center
- On site pharmacy, clinical research support laboratory, and clinical trials
- Supportive care, including oncology patient navigators, social workers, a dietician, genetic counselors and a dedicated survivorship nurse
- Integrative Medicine Services including massage, Reiki, acupuncture, music therapy, and psychology

**SMILOW CANCER HOSPITAL CARE CENTER AT TRUMBULL**  
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Trumbull, CT 06611  
Phone: (203) 502-8400

*“We’re proud to be able to offer convenient, multidisciplinary cancer care for patients in Fairfield County in our beautiful facility at the Park Avenue Medical Center. Our patients have access to medical, radiation, and surgical oncology expertise, clinical trials through Yale Cancer Center, and the combined knowledge from our tumor boards and quality care standards from Smilow Cancer Hospital.”*

— Harold H. Tara, Jr., MD,  
Medical Director

## meet the physician

### Nita Ahuja, MD, MBA

Chair, Department of Surgery

**You recently joined Yale School of Medicine as our new Chair of the Department of Surgery; what factored into your decision to transition to Yale?**

Yale has a strong culture of collaboration and is a beacon for the academic mission. This was important to me. Having been at Johns Hopkins for more than 20 years, I have realized that the culture of an institution is its most important product. On my first visit at Yale, I appreciated the strong culture of collaboration and scientific excellence present here.

The fact that Smilow now has a clinician scientist as its leader in Dr. Fuchs, was also a big draw, since I knew that he and I share the same values of delivering outstanding clinical care, nurturing our pipeline of clinician scientists, and investing in biomedical research.

**In addition to your surgical expertise, you’re also actively engaged in research focused on gastrointestinal cancers. What is your lab currently studying?**

I have been studying epigenetics for over twenty years and have focused on asking questions that are important for my patients. In recent years, I have

concentrated on pancreas cancer, which is expected to become the second leading cause of cancer death. My laboratory has been working on a liquid biopsy for detecting this lethal cancer early and we are now working on developing a test that we can take to the market. We are also attempting to understand why certain people with pancreas cancer do really well on treatment, while the majority do poorly. By studying these long-term survivors of pancreas cancer we hope that we can identify potential novel treatments for all of our patients.

On another front, my laboratory has been on the forefront of treating solid tumors and has shown that epigenetic drugs can be used to prime cancers, such that we can combine them with other chemotherapies or immunotherapies to better treat cancers. We currently have a national clinical trial testing chemoprimering for colorectal cancers as part of the Stand Up To Cancer Dream Team with the American Association for Cancer Research.

**The mission at Smilow is to deliver multidisciplinary care to our patients. How will your plans for growth and change in surgery support this?**

I am a proponent of multidisciplinary care for all cancer patients. During my tenure at Johns Hopkins, I started multidisciplinary clinics for the management of regional cancers, sarcomas, gastric cancers, as well as pancreas cancers. The treatment of cancer is multimodality, including surgery, chemotherapy, radiation therapy, and increasingly biologic therapies. This approach also allows us to ask key questions for each disease and to be the leaders in the disease. In the Department of Surgery, we are continuing to recruit surgical oncologists who are skilled surgeons but also have a passion for investigation and discovery in their specialty areas.

PETER BAKER



Please join us for our  
**Yale Center for  
Immuno-Oncology  
*Symposium***

**Thursday, October 4, 2018**

Harkness Auditorium  
333 Cedar Street, New Haven, CT  
9:00am - 4:00pm

More Information and Registration:  
[yalecancercenter.org/immuno-oncology](http://yalecancercenter.org/immuno-oncology)