A STEP AHEAD
Clinical Trials Give Patients an Advantage in Cancer Care

ALSO
CONVERSATIONS WITH FEMALE PIONEERS IN SCIENCE
PATIENT GOES THE DISTANCE FOR KIDNEY-SPARING TREATMENT
SURVIVORS CREATE MURAL THAT TAKES FLIGHT
OPENING DOORS

Options. Whether at first diagnosis or following a recurrence, patients want the best options for care that modern medicine can offer. Strengthening the options at every stage, for every cancer, is what Fox Chase is all about, and it is why we are particularly encouraged by the 60-percent increase in patients who enrolled in Fox Chase clinical trials over the past year.

Much of that increase can be attributed to the success of our Be the Breakthrough campaign, which encourages patients and their families to learn about the options available to them through the Center’s extensive program of clinical trials. As you will read in our cover story, on page 6, some of these patients were surprised to learn that all participants in clinical trials, including those in control groups, receive the highest standard of care existing today. Many of the participants also gain access to potentially more effective treatments. These patients expand their own options, while they help us develop better care for others. In fact, their participation is the only way forward.

Other positive developments at Fox Chase are also contributing to new options for patients. In 2014, the number of National Institutes of Health grants awarded to our investigators grew 50 percent from the prior year, allowing us to pursue exciting possibilities in basic and translational research. Under the direction of Wafik El-Deiry, an internationally renowned scientist and innovator, an invigorated division of translational research is helping us move research from bench to bedside efficiently.

El-Deiry is one of 17 physicians and researchers who have joined the Fox Chase faculty over the last year. Aggressive faculty recruitment and the addition of innovative technologies will sustain this momentum. On page 5, you can read about one new technology, 3-D tomosynthesis mammography, which will become available at Fox Chase this summer. While improving cancer detection, breast tomosynthesis reduces the number of women who must experience the anxiety of unclear results on a mammogram.

Finally, we hope you enjoy reading about a Fox Chase program that is expanding options in a different way. The Postdoctoral Fellowship program, featured on page 12, provides hands-on research experience for recent PhD-trained scientists. The program, which offers mentorship and financial support, is a critical milestone for the scientists who will strengthen cancer care for generations to come.

Richard I. Fisher, MD
President and CEO
FOCUS: Trailblazers
Three female pioneers in cancer research discuss their own careers and what the future holds for young researchers in science and medicine.

CLOSE-UP: Finding a Family at Fox Chase
When Oklahoman Denise Coldwater is diagnosed with kidney cancer for the second time, she goes the distance to get treatment.

MAKING A DIFFERENCE: A Day of Celebration
Cancer survivors, their caregivers, and the community paint a mural that brightens Fox Chase.

REVIEW: News of Note
Laurel Society dinner honors important donors | Fox Chase hosts educational sessions on lung and gynecologic cancers | A traveling fellowship supports an oncologist abroad | Honoring the legacy of John P. Hoffman

REWIND: A Family Affair
The Dorrance family’s passion for advancing cancer care helped make Fox Chase the distinguished place it is today.
Pancreatic cancer is one of the deadliest forms of the disease. Most patients die within a few months, often because the cancer finds a way to work around treatment. Fox Chase cancer biologist Timothy J. Yen and colleagues have revealed an unlikely ally for pancreatic cancer cells: the vitamin D receptor (VDR) typically associated with bone health, which helps the cancer cells subvert the effects of chemotherapy. The researchers’ findings, published in *Cell Cycle*, suggest a new way to potentially help improve treatment outcomes by disabling VDR.

Most pancreatic cancers are treated with a drug called gemcitabine, which kills cells by stopping DNA replication. To determine how pancreatic cancers survive gemcitabine treatment, the researchers removed every one of the approximately 24,000 genes—one by one—in pancreatic cancer cells, exposed the cells to gemcitabine, and noted that cells that no longer expressed VDR became more sensitive to the drug.

VDR is the protein that normally binds to vitamin D, but its connection with drug resistance in pancreatic cancer has not been reported. The researchers realized they had identified the mechanism that helped the cancer cells thrive, even after treatment with gemcitabine. “If we find a drug that inactivates VDR, it may allow gemcitabine to selectively kill pancreatic cancer cells while leaving normal cells unharmed,” says Yen.

He and his colleagues are searching for a drug that can bind to and inactivate VDR so the tumor will be more effectively killed by gemcitabine. “Finding a drug that can inactivate VDR is a priority,” he says.
In breast cancer, tumors that grow into the skin are automatically classified by the American Joint Committee on Cancer staging system (TNM) as stage III, suggesting that they are relatively serious cases with potentially poor survival rates. Although the TNM system is based on standardized criteria and used widely in the U.S. and internationally, Fox Chase scientists cast doubt on this standard classification by showing that women with breast cancers involving the skin have widely varied survival rates. In the study, published in the *Journal of the American College of Surgeons*, the researchers examined data from the SEER-Medicare Linked Database and found that a patient’s survival depends more on the tumor’s size and whether it has infiltrated the lymph nodes than on whether it has spread to the skin.

“Classifying all tumors with skin involvement as stage III belies the purpose of staging, which is to group tumors with a similar prognosis,” says surgical oncologist Richard J. Bleicher, leader of the breast cancer treatment program at Fox Chase and one of the study’s researchers. “Women with tumors that happen to have spread to the skin may be given an inaccurately dire prognosis—along with, perhaps, some unnecessary treatment. We need to update our staging criteria to more accurately reflect a woman’s true chances of surviving her cancer.”

Bleicher and his colleagues recommend adding a new staging category for tumors with skin involvement, and giving more weight to other criteria—such as a tumor’s size and whether it has spread to the lymph nodes—when determining cancer stage. These recommendations are just one example of how Fox Chase doctors are moving the standard of cancer care forward, helping patients to better understand their survival chances and determine the best treatment options.
New findings by Fox Chase geneticist Joseph R. Testa and colleagues are illuminating the relationship between asbestos exposure, genetic factors, and cancer.

Exposure to asbestos, a thread-like mineral used in building and manufacturing, puts people at risk of developing the highly fatal cancer mesothelioma, which affects the membranes lining the chest and abdominal cavities as well as those around the lungs and other organs.

By the end of the study, 73 percent of BAP1-mutant mice exposed to asbestos had developed mesothelioma, compared to only 32 percent of mice without a BAP1 mutation.

In previous studies, Testa and colleagues found that a small number of people are also predisposed to getting mesothelioma because of mutations in the BAP1 gene. While BAP1 suppresses tumor activity, the mutations cause it to stop working, leading to more aggressive cancers. But can people develop mesothelioma simply because they have a BAP1 mutation, or do they also need to be exposed to at least small amounts of asbestos to trigger it?

In a study published in Cancer Research, Testa’s team exposed mice with and without BAP1 mutations to asbestos. They also followed a group of mice with BAP1 mutations who were not exposed to asbestos to see if they developed any cancers. By the end of the study, 73 percent of BAP1-mutant mice exposed to asbestos had developed mesothelioma, compared to only 32 percent of mice without a BAP1 mutation. Mesotheliomas in BAP1-mutant mice also appeared sooner and were more aggressive. However, the mutant mice that were not exposed to asbestos remained mesothelioma-free for the length of the experiment. “To get mesothelioma, having a BAP1 mutation does not appear to be enough,” says Testa. “Our studies suggest that you generally need to be exposed to asbestos as well.”
A BETTER MAMMOGRAM

Mammograms can be life-saving. An annual mammogram can reduce mortality rates of breast cancer by 15 to 50 percent for a population. Despite the benefits, as many as 20 percent of cases are missed by traditional mammograms. Ten percent of women are brought back for additional diagnostic work, yet many are found to have no abnormalities. Often this cancer scare is a result of equipment limitations, yet the anxiety and inconvenience it may cause are real. The good news is that Fox Chase now offers a better option for detecting breast cancers: tomosynthesis.

A traditional mammogram takes a 2-D image in which breast tissues are superimposed on one another. A tumor can hide behind other tissues, or healthy tissues can combine to look like a tumor. With tomosynthesis, the physician takes a traditional 2-D scan, then compiles a 3-D image using multiple X-rays taken at different angles.

One study, published in the *The Journal of the American Medical Association*, combined data from more than 170,000 examinations and found that using breast tomosynthesis increased cancer detection rates and decreased callbacks. “Reducing the call-back rate for mammography means reducing a major source of stress and anxiety for our patients,” says radiologist Kathryn Evers, director of mammography. Tomosynthesis may also require less compression, causing less discomfort for patients, and X-ray dosage is similar to a regular mammogram.

“With this technology,” says Evers, “we will be able to participate in planned clinical trials regarding tomosynthesis, breast ultrasound, and breast MRI for evaluation in various patient groups including women with dense breasts.” Breast tomosynthesis will be available at Fox Chase starting in early summer 2015.

"Reducing the call-back rate for mammography means reducing a major source of stress and anxiety for our patients."
— KATHRYN EVERS  
DIRECTOR OF MAMMOGRAPHY
B. Mark Wilson values innovation. It is a conviction Wilson and his father, brother, and son have applied to the family business, Wilson-Legacy Farms in Smyrna, Delaware, where technology and conservation practices have kept their farm—founded in 1956 by the father, George—a leader in seed and cereal grain cultivation. It is no surprise, then, that when Wilson was diagnosed with Stage IV throat cancer, he sought out the most innovative treatment option available.

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BY TOGO TRAVALIA | PHOTOGRAPHY BY C.J. BURTON
On May 6, 2014, Wilson walked into Fox Chase Cancer Center accompanying his father, who was on a follow-up visit for the kidney cancer he had overcome less than a year earlier. Tucked under the younger Wilson’s arm was paperwork from another hospital and a CT scan of his neck. He was scheduled for a tonsillectomy and either a laryngectomy or a tracheostomy at another facility in three days. Before going through with the operation, he wanted to know if there was another way to fight the cancer threatening his life—and his quality of life.

Fortunately, one of the nation’s top oncologists specializing in head and neck cancers was on duty. In fact, surgical oncologist John A. Ridge, the Louis Della Penna Family Chair in Head and Neck Oncology, was in the midst of leading a clinical trial for patients just like Wilson. The trial, for patients with tumors of more than four centimeters in at least one dimension, involves substituting a protein antibody, cetuximab, for a chemotherapy agent.

“The trial is examining whether this new approach can be less toxic to the patient, with fewer side effects. Like every clinical trial, we are trying to cure as many patients as possible with the best quality of life,” says Ridge, who has spent much of his 35-year career seeking better outcomes for patients through trials. “It is never certain a given trial will create a better outcome, but it is unlikely to produce a less effective one.”

Wilson’s father had also enrolled in a Fox Chase clinical trial seeking to prevent a recurrence of kidney cancer and his margins were still clear. Wilson seized the opportunity. He canceled his surgery and enrolled. Best of all, by undergoing this treatment—only available to patients at Fox Chase and other specific cancer centers conducting this research—he could avoid the possibility of losing the ability to speak naturally, a common outcome of surgery in cases such as his.

Wilson felt lucky from day one. “I was at the best possible place, and the preparation you get at Fox Chase is impeccable. My physicians and nurses put me at ease and put everything into terms I could understand.” He singles out each team member: medical oncologist Ranee Mehra, radiation oncologist Thomas Galloway, nurse practitioner Kristen Kreamer, and physical therapist Jeannie Kozempel.

Indeed, clinical trials are a team endeavor at Fox Chase, where research nurses are at the nexus, attending to patient safety and well-being while ensuring that clinical trial protocols are being met and the trial’s sponsors are kept informed.

“I’m the first point of contact for the patient after the physician presents the trial,” says Lois Malizzia, a clinical research nurse who coordinates clinical trials for patients with genitourinary (GU) cancers. She says the GU team meets biweekly to share information, and the team approach benefits patients. “Everybody on the team is kept up to date, and there’s a lot of communication. If there’s new information to share, everyone is aware. It’s very rewarding and exciting to see the work you are doing affect the standard of care for patients.”

Wilson’s tumor responded to the chemotherapy regimen including cetuximab and today he is cancer-free. “Even when my family doctor thought there might not be a glimmer of hope, I believed there still was,” he says. “It teaches you not to settle for the first opinion and not to be scared of a clinical trial. It might offer the best option of all. I think it saved my life. Plus it offers the chance to be the breakthrough for others.”

Phases of a Clinical Trial

The FDA requires that new medications undergo a series of three phases of testing to ensure safety and efficacy in order to be approved. Fox Chase offers all three phases and is particularly strong in Phase I studies. On average, it takes nearly 15 years for cancer drugs to go through all three phases of a clinical trial and receive approval.

**PHASE 1** (15–30 participants) aims to find a safe dose of a new drug and explore how best to administer the drug.

**PHASE 2** (>100 participants), using a now-standard dose, gathers more information about how a drug affects cancer and how it affects the body.

**PHASE 3** (100–1,000 participants) compares a new option with the current standard of care, often by means of a randomized study.

TODAY’S CLINICAL TRIALS ARE TOMORROW’S TREATMENTS

More options. Newer options. Better options. Ask people with advanced cancers what matters most, and “options” is going to be a likely answer.

Clinical trials expand treatment options for the future, just as clinical trials years ago led to improvements in today’s standards of care. Simply put, trials translate the results of basic scientific research into more effective clinical strategies for screening, preventing, diagnosing, and treating cancer. For new drugs, trials are the necessary step between experimentation and FDA approval.

Fox Chase is a national and global leader in cancer clinical trials, with more than 150 trials underway at any given time and an enrollment rate that increased by 60 percent over the last year. Leadership requires a special commitment across the entire institution and a shared appreciation for the value that clinical trials bring to cancer care.
“Trials are expensive to execute,” explains Ridge. “They entail costs and time commitment that are not part of everyday practice for most hospitals. It’s also hard to undertake clinical trials outside of specialized environments, which is particularly true of trials not supported by industry.”

Patients who qualify for a clinical trial, because of the specific circumstances of their cancer and on the recommendation of their oncologists, are invited to enroll. There is no financial incentive. As for costs, Fox Chase works with each patient in the pre-certification process to assess coverage options by the patient’s insurance company and the trial sponsor (often a pharmaceutical company). Rarely do insurance companies not allow coverage for clinical trial-related costs. Some costs may be borne by the patient, but for the majority of patients, the financial arrangement is not a barrier to entry.

With a detailed plan of care in place, enrolled patients receive either the existing high standard of care available to all Fox Chase patients, or are among the first to benefit from a potentially more effective treatment. In the case of clinical trials that are demonstrating clear benefits, trials are often halted midway so that the medications under review can be made available to all patients on a uniform basis.

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Every patient has his or her own reasons for joining a clinical trial. Having good information was key for Lael Swank, who, despite having no history of the disease in her family, discovered breast cancer in a self-examination days after she turned 39. “I enrolled in a trial with the drug Avastin,” says Swank, who traveled two hours from her Mountain Top, Pennsylvania home to Fox Chase for chemotherapy treatment following a bilateral mastectomy. “My decision was basically made because I was well informed about the trial—and scared. I would’ve tried anything to fight this cancer and save my life.”

Swank, who recently celebrated her five-year “cancerversary,” also saw a benefit she wanted to share with others.
“When I signed up for the trial, I thought: I will do this trial in the hopes that a cure for breast cancer will be found. One in eight women diagnosed is far too many. We all need to do our part.”

Clinical trial participation can extend to patients post-treatment as well.

Charlette Gray, of Princeton Junction, New Jersey, who was treated for breast cancer at Fox Chase, has been declared cancer-free since 2011 but participates in a clinical trial in which Metformin, a drug used for diabetes, is being tested to see if it can prevent the recurrence of breast cancer. As in many clinical trials, Gray does not know if she is receiving the therapeutic or a placebo, but either way, she hopes her participation will advance cancer treatment. She meets regularly with a clinical trial nurse to review medications and manage symptoms.

“I am the daughter of a mother who waged a long and valiant fight against cancer before it overcame her,” Gray says, adding that she is also the mother of a daughter “who I pray will never have to face this fight. For these reasons alone, I want to do what I can to further cancer research. For me, that includes participation in clinical trials.”

UNFOUNDED FEARS STAND IN THE WAY OF BETTER OUTCOMES

Not everyone who is eligible for a clinical trial participates. Every year, there are 1.5 million new cancer diagnoses in the United States. Of these new patients, about 200,000 (13%) are typically eligible for clinical trials that can deliver a high standard care.

However, only about one-third of the potential patients enroll in cancer clinical trials. Why? Reasons range from patients and their families not knowing about the opportunity, to mistaken fears about the process, to the inability to travel to a clinical trial. Whatever the reason, the result is that the patient has fewer options for his or her care, and the answers that move cancer treatment forward are delayed.

“One of the most common misconceptions is that by participating, you’re being experimented on,” says medical oncologist Margaret von Mehren, director of Fox Chase’s sarcoma program and associate director of clinical research. “Every study is being conducted with lots of information and is done in the safest possible way. Patients are followed not only by their care team of doctors but also by their research team. They are getting better care by having that second set of eyes. Plus the possible benefit is tremendous. It may allow patients access to a drug they wouldn’t have any other way.”

Another misconception revolves around randomized trials, which compare a control group against one receiving the new treatment. Some trial candidates think the control group will receive a placebo instead of treatment. For patients receiving active cancer treatment, nothing could be further from the truth. “Yes, they are being assigned therapy in a random fashion. But the control group will receive the same high standard of care everyone receives,” says von Mehren. “If they are in the group receiving the new treatment, their outcomes may be the same or better than with the standard treatment.”

The difference can advance care and outcomes for clinical trial patients—and eventually, for everyone.

A MORE VIBRANT FUTURE FOR CANCER RESEARCH

The positive impact of having a robust clinical trial program extends throughout the institution.

“What makes Fox Chase special has been a resolute commitment to designing clinical trials and carrying out studies that offer its faculty intellectual and professional growth.” — JOHN A. RIDGE
in computing that made the electronic age possible also enable us to learn the molecular structure of cellular components in such a way that we can design and test drugs that would not have been possible only a short time ago. Whole new ways of treating cancer patients are just emerging. Clinical trials are the linchpin of this potential.

GROWING NATIONAL SUPPORT FOR CLINICAL TRIALS

Growing infrastructure, information and support for clinical trials is happening at the national level, too, with the establishment in 2014 of the National Clinical Trials Network. The NCTN was formed by the National Cancer Institute (NCI), where cancer clinical trials began six decades ago with studies of chemotherapy treatment for acute leukemia.

“The new network represents an unmatched effort to integrate and streamline the process of cancer clinical trials research,” says James Doroshow, deputy director for clinical and translational research at NCI. “The conduct of NCI-supported trials, which are publicly funded, involves a complex system of designing, reviewing, and initiating studies. The new NCTN replaces a structure that was more than 55 years old.”

Former NCI Director Harold Varmus adds, “We must work together to adapt swiftly and effectively to achieve the goals of the new system—namely, to take advantage of recent advances in our understanding of cancer and to bring new knowledge into clinical trials conducted in the community. Our patients deserve nothing less.”

EXPANDING ACCESS FOR EVERYONE

Fox Chase and Temple Health continue to make concerted efforts to ensure that all patients have access to cancer clinical trials. The “Be the Breakthrough” campaign launched in July 2014 was specifically designed to raise awareness about cancer clinical trials and encourage discussion between patients and their care team. With brochures, posters in patient rooms and doctors sporting buttons that say, “Ask Me About Clinical Trials,” the highly visible campaign has led to a 60 percent increase in the number of patients participating in clinical trials compared with the previous year.

Also on the uptick are phone calls to the patient resource education center. Three clinical trial educators staff the resource education center, which offers medical interpreters and plain-language literature. “We make sure patients are using evidence-based information to make decisions,” says Evelyn González, senior director of Fox Chase’s Office of Health Communication and Health Disparities. She adds that the campaign is gaining momentum with its multi-modal approach.

Further success will require ongoing targeted efforts to serve populations which, historically, have been harder to reach and engage. “Unfortunately, underserved populations are sometimes less informed about clinical trials and, not surprisingly, less willing to participate,” says surgical oncologist Nestor Esmaila, associate director of Cancer Health Disparities and Community Engagement at Fox Chase.

To address the disparity, the NCI has provided funding for lay ambassadors from Fox Chase to reach out to local churches, community centers, and federally qualified health centers with programming about the importance of participating in research, says González. “Without participation by ethnic minorities, we don’t have a complete picture. It’s really important, especially in the age of personalized medicine.”

“When you look at our catchment area, you realize that we have a unique opportunity,” Esmaila says. “We are poised to become a national model for minority clinical trial accrual. We can show hospitals and medical centers everywhere that patients from all walks of life who are better informed about clinical trials are far more willing to participate.”

For more information on clinical trials at Fox Chase Cancer Center or to find a current Fox Chase study, please visit foxchase.org/cancer/clinicaltrials or call 1-888-FOX-CHASE.
When Sanjeevani “Sanjee” Arora was a high schooler in India, she read about the Philadelphia Chromosome—the first direct link that was found between chromosome abnormalities and cancer. It was discovered in 1960 by the late David Hungerford at Fox Chase Cancer Center and Peter Nowell at the University of Pennsylvania. As she began studying science, Arora’s knowledge of the Philadelphia Chromosome always stayed with her. Coincidentally, a decade later she began conducting her own important cancer research in Philadelphia as a postdoctoral fellow at Fox Chase.

Arora’s passion for science began in childhood. “I think it started very early because my father is a doctor. He is the first clinician and scientist I knew,” she says. When Arora began her undergraduate studies in India, it was around the time that a large biotechnology company in the area became very successful. The head of the company happened to be a woman—a less common occurrence in India than the United States. “Here was someone who had taken her knowledge of science and started her own company. This is when

Photography by Cardoni
Sanjee Arora, pictured with the Philadelphia Chromosome microscope.
I really thought, yes—women can also make it big in science.”

As a graduate student in India, Arora worked in a diagnostic lab at a cancer research hospital, where she interacted with cancer patients on a daily basis. She drew blood samples and ran diagnostic tests for cancer biomarkers to determine whether their cancer was in remission or had come back. This was the first time that Arora really saw cancer up close. The looks of hope—and sometimes despair—on the patients’ faces fueled her desire to keep researching the disease. “I knew we still had a long way to go,” says Arora.

After graduation, Arora came to the United States and received a PhD in biochemistry and cancer biology at the University of Toledo, Ohio. When she began looking for lab-based research jobs, she came across an opening at Fox Chase by happenstance. During her interview she learned about the Center’s endowed postdoctoral fellowships, where she could continue her research while receiving financial support. This served as a further incentive for her to ultimately choose Fox Chase over other places. She was accepted into the program for a three-year appointment as a Board of Directors fellow [see sidebar].

Collaboration Among Fellows and Faculty

There are two kinds of postdoctoral fellowship programs available at Fox Chase: medical and research. Medical fellowships are available in multiple specialties for individuals who have obtained a medical degree and completed a residency program. For research fellowships, individuals typically complete one- to four-year programs. Fox Chase’s program promotes training in any of the Center’s labs that are engaged in cancer-related research. As of 2015, there are about 70 postdoctoral fellows enrolled in the program, most of whom are PhD-trained scientists. Highlights of the program include training seminars, science writing practice, one-on-one coaching, joint lab meetings, and postdoc-organized and -led seminars.

Although their studies often do not overlap, Fox Chase’s postdoctoral fellows rarely stay isolated in their labs. As Arora mentions, if you visit any other laboratory, fellows and faculty alike are willing to share their research findings and offer new techniques. “That kind of openness doesn’t happen everywhere,” Arora says.

Program director, immunologist Glenn Rall, can also attest to Fox Chase’s spirit of camaraderie. “When I was a postdoc at a different center, there wasn’t much interaction with fellows from other labs. It was a wonderful surprise to come here as a faculty member and see that there’s so much more cohesion, collaboration and mutual interest in each other’s science and careers,” Rall shares.

Fellows find other interesting ways to connect with each other. The Annual Postdoc and Graduate Student Research Conference is an event that provides the researchers with an opportunity to present their work. This year marks the 20th anniversary of the symposium. Many fellows also enjoy social events or extramural activities such as basketball, volleyball, and karate.

Rall and his colleagues have also acknowledged the importance of connecting current postdocs with alumni of the program. The Postdoc Alumni Newsletter keeps past fellows up-to-date on program developments and activities while providing career advice for current fellows. There is also a LinkedIn page for current and past fellows [see sidebar].

Endowed Postdoctoral Fellows

Although the majority of postdoctoral fellows at Fox Chase receive financial support from their faculty mentor’s grant funds, there are a number of other grants available that are provided by outside institutions. Fox Chase currently maintains five endowed postdoctoral fellowships that are unique and specific to the Center. Requirements for the selection of candidates include the completion of a PhD, MD, DVM or equivalent degree, three letters of recommendation, and a brief research proposal written with the advice of a Fox Chase faculty member. The current recipients of the endowed fellowships are as follows:

- The William J. Avery Endowed Postdoctoral Fellowship: Yong Zhang, Jayati Mookerjee Basu
- The Fox Chase Cancer Center Board of Directors’ Fellowship: Sanjeevani Arora
- The Lawrence Greenwald Postdoctoral Fellowship: Qin Li
- The Elizabeth Knight Patterson Postdoctoral Fellowship: Eric Chang, Vivek Modi
- The Board of Associates Fellowship: Roshan Thapa
Support System for Women in Science

During her fellowship, Arora—an advocate for women in science—became passionate about creating a space where female scientists, regardless of age, race, or cultural background, could come together and discuss their experiences. “It’s really important for any institution to recognize and encourage more women in science,” Arora says. “It’s an idea very close to my heart.”

When she approached Rall about the idea, he wholeheartedly encouraged her to start a group, which became “Women Love Science.” The members meet once a month at Fox Chase to discuss the triumphs and challenges they’ve faced in their careers. The group has conducted Skype chats with women in science from around the country. It is also a place where women scientists can discuss job opportunities and hone their networking skills. Although many of the members are from Fox Chase, the group is open to women from nearby institutions. Arora saw her own personality blossom after starting the group. “Before I came to Fox Chase, I used to be really shy,” she says.

A True Scientist

Arora’s cancer research has evolved since she first arrived at the Center in the fall of 2012. At first, her research focused on defining the underlying genetics in undiagnosed hereditary colorectal cancers. A significant number of cancers arise from an inherited genetic defect, but researchers and clinicians still don’t completely understand the role genetics play in cancer development. Arora and her colleagues, including molecular biologist and faculty mentor Erica Golemis, set out to better define individuals’ genetic predisposition to cancer. Their work has expanded to other inherited cancers such as prostate and kidney. The results of their studies could ultimately help improve screening, diagnosis, and treatment for patients with a history of cancer in their family.

“Sanjee’s research might help identify new strategies to improve assessment of cancer risk for patients with a number of discrete classes of hereditary cancer,” says Golemis. “She’s truly stellar and is making rapid progress on multiple fronts.”

The demands of her work often make it difficult for Arora to pursue outside interests, but she still manages to find some time. “My husband jokes that I love my research way too much,” she says with a laugh. “Besides work, there are some things I do enjoy.” She likes photography, and what piques her interest the most is the ability to tell a story through pictures. Much like science, she explains, you can come up with a novel idea, create a story, and develop a result. Every day, Arora views life through a scientific lens.

She plans to continue the research she started at Fox Chase, regardless of where she lands. She hopes to work at a place where collaboration and collegiality are valued as much as they are at Fox Chase. “Once people come here, it is very hard to leave,” she says. “I’ve learned so much during my fellowship and have met so many great people. Fox Chase is truly a special place to work.”

LinkedIn Unites Current Trainees with Alumni

The Fox Chase Cancer Center Trainee Association group on LinkedIn facilitates networking and communication for current and past postdoctoral and graduate trainees. Amanda Purdy, academic programs Director at Fox Chase, promotes the group—currently at around 100 members—to both former and current trainees.

One highlight of the group is the monthly Postdoc Spotlight, which features a short biography and overview of a postdoc’s research and a link to his or her most recent publication.

To learn more about the group, visit LinkedIn.com.
In the 1960s, says clinical geneticist Mary Daly, going to medical school seemed out of reach. “The thinking was that women couldn’t have both families and careers in research or medicine.” Fox Chase was an exception in its support for female scientists. Even in 1946, the Institute for Cancer Research, as Fox Chase’s scientific enterprise was then called, had women in four of the 10 laboratory head positions. Today women comprise more than 40 percent of the research faculty. Forward talked with Daly and two other Fox Chase women, chemist Jenny Glusker and virologist Ann Skalka—all considered pioneers in their fields.

How did you become interested in science?

Mary Daly: As a child, I spent a lot of time by myself drawing, mainly animals, which got me interested in the physical properties of living things. In high school, I had a fabulous young biology teacher, and by the end of the year knew I wanted to pursue biology. I was fascinated with how living things worked.

Jenny Glusker: Both my parents were medical doctors, and I had a general love of wildlife. Then in high school I had an excellent chemistry teacher. I viewed medicine as a service to people and science as trying to find out what really happens. They’re both challenging, but I liked how in chemistry you could figure out what was happening and why.

Ann Skalka: In college I majored in art and biology. I spent two summers in a lab studying plants to screen for drug toxicities and was taken under the wing of a wonderful senior technician. Then I took a course in biological chemistry and learned how to prepare DNA. I thought, “Wow, this is marvelous stuff. I want to learn more.”

What challenges did you face when starting your career?

Glusker: I had some excellent scientific mentors, but my greatest challenge was running a lab while raising three children in the days before daycare.

Skalka: Initially I had to choose research or teaching because I felt I couldn’t do both and be a wife and mother. When I started interviewing, I found some places weren’t interested if a woman was already on staff. I was perplexed and discouraged, but finally found a welcoming environment at the Roche Institute of Molecular Biology.

How did Fox Chase contribute to your career?

Daly: Fox Chase has a strong tradition of population science—cancer prevention and control. I fit into an established niche with a lot of professional support. Fox Chase was small enough that you could meet people in other departments easily. I think that’s still true today.

Glusker: Fox Chase let me decide which scientific problems I wanted to research. It provided an interesting, supportive, and highly regarded community.

Skalka: As I was beginning my career, I needed to focus on research. When I came to Fox Chase in 1987, my children were grown and I was already running a laboratory and chairing a department. Fox Chase gave me that opportunity to take on a larger leadership role; I served as director of basic science for 22 years.

What advice do you have for young people, especially women, interested in science?

Daly: Even though women have come very far in professional life there are still a lot of barriers, particularly for younger women. We can’t assume that we have achieved equity. We have to constantly be aware of helping women promote their careers.

Glusker: Find a subject that really interests you, and immerse yourself in learning and trying to solve questions that still need to be answered.

Skalka: If scientific research is your vocation and you’re excited about it, pursue that career. In addition to laboratory research, there are other ways a scientific education and training can be useful, such as industry or law. Keep your eyes open; you will find your way.

How has technology changed healthcare and research since you began your career?

Daly: Technologies today let us learn things we never could. Genetic sequencing is new. I could go on about the technology that enables us to learn about and prevent cancer. We have a lot of opportunities to make progress.

Skalka: We still haven’t found a way to make the public better appreciate and support scientific scholarship. The good news is technology is improving exponentially. The kind of questions you can ask and the chances for scientific collaboration are mind boggling.
Mary Daly
POSITION: Chair of clinical genetics, Timothy R. Talbot Jr. Chair in Cancer Research
NOTABLE ACHIEVEMENTS: Established Fox Chase’s first family risk-assessment program in 1991, one of the first of its kind in the country.
FUN FACTS: Spent six years in the Air Force Medical Corps before coming to Fox Chase. Also makes art through lithography, a type of printmaking.

Jenny Glusker
POSITION: Professor emerita
NOTABLE ACHIEVEMENTS: Contributed to the discovery of the chemical formula for Vitamin B12, an important milestone in chemistry. Also studied three-dimensional aspects of cancer and enzyme mechanisms.
FUN FACTS: Keynote speaker on advances in crystallography at the opening ceremony for the UNESCO 2014 International Year of Crystallography in Paris, France.

Ann Skalka
POSITION: William Wikoff Smith Chair in Cancer Research, basic research director emerita and senior advisor to the president
NOTABLE ACHIEVEMENTS: Contributed to our understanding of the biochemical mechanism by which retroviruses (including the AIDS virus) replicate and insert their genetic material into the host genome.
FUN FACTS: Co-author of the widely acclaimed textbook Principles of Virology and a leader on state, national, and international advisory groups concerned with the broader societal implications of scientific research.
When Denise Coldwater, her husband Mike, and their three sons moved to Enid, Oklahoma 15 years ago, they had planned to settle in a rural part of town to run a cattle ranch. But when Coldwater—who at the time was also dean of students for Enid’s Northern Oklahoma College—was diagnosed with kidney cancer, their plans were interrupted.

“It was a surprise discovery,” says Coldwater. “The doctors were examining a tumor on the other side of my body that was benign and not even related, when they found cancer in my kidney.” Based on her condition and the technologies available at the time, her best choice was to have the kidney removed at a hospital in the area. The surgery was successful and the couple started a 900-acre cattle ranch nearby, but chose to live in town where Coldwater could be better accommodated while recuperating.

Fast forward to 2014, and Coldwater, now 60 years old, again found herself facing cancer. This time it was a large tumor on her remaining kidney, and removal and a life of dialysis wasn’t an option.

“I figured I was in trouble,” says Coldwater, who had completely lost renal function. Her doctors presented a few options: one was Robert Uzzo, chair of surgical oncology at Fox Chase. Uzzo, one of the country’s best known urologic oncology surgeons, specializes in organ preservation. After reviewing Coldwater’s files, he agreed to see her.

In mid-July, Denise and Mike left their Oklahoma ranch in the care of their sons and drove the 1,500 miles to Philadelphia. By then, Coldwater was concerned about whether the distance would prevent a personal connection with Uzzo and his team. “Dr. Uzzo and the Fox Chase team were wonderful. They looked at my situation as if it was their own family member,” says Coldwater. “I never felt like I was left in the dark on what my options were or what was going to happen during surgery.”
While Uzzo was performing a partial nephrectomy, he discovered a tumorous clot extending into Coldwater’s renal vein, the blood vessel that connects the kidney to the rest of the body. Luckily, Uzzo is part of a select group of urologic surgeons skilled at the complex procedure required to remove such complex tumors, clear out the vein, and reconstruct the kidney. Coldwater came out of surgery with her kidney fully functioning.

After two weeks in Philadelphia, Denise and Mike made the drive back to Oklahoma. The recovery process was quick. By fall, Coldwater was back working on their ranch and was able to take a trip to the Rocky Mountains with her grandchildren.

“Fifteen years ago, this kind of surgery wasn’t an option,” says Coldwater. “Dr. Uzzo had promised to send me home pain-free and with a functioning kidney. And that’s exactly what he did.”
MAKING A DIFFERENCE
THE HOPE MURALS PROJECT

A DAY OF CELEBRATION
The Hope Murals Project Brightens the Fox Chase Cancer Community

Fox Chase’s annual celebration of cancer survivors, their caregivers, and families is always a special day, but 2014’s event was enhanced by Lilly Oncology On Canvas, an annual art competition that invites those touched by cancer to express—through art and narrative—their journeys. To recognize Lilly Oncology On Canvas’ 10th anniversary, Lilly Oncology and the National Coalition for Cancer Survivorship launched The Hope Murals Project. This year-long project brought 10 murals to 10 different cities—including Fox Chase in Philadelphia. Cancer survivors, their caregivers, and the community worked together to create each mural.

On September 18, the Fox Chase community gathered to paint the mural “Awakening,” designed by artist and Fox Chase cancer survivor Susan Schaffer. “The hands depict the gray days of cancer,” she explains, “and the butterfly represents the soul’s chrysalis during a cancer journey, how it emerges intensely stronger.” The mural, painted on movable pieces, was later installed in the community on Oxford Avenue, near the Fox Chase train station.

The celebratory afternoon also featured live music by singer, songwriter and cancer survivor Charlie Lustman, as well as presentations of the CHASE Awards, which are given annually to an organization and an individual who demonstrate an outstanding commitment to improving the lives of cancer survivors. This year’s organizational recipient was For Pete’s Sake, a nonprofit that provides respite vacations for cancer patients and their families. It was founded by Marci Schankweiler in honor of her late husband Pete. The Fox Chase Head and Neck Cancer Support Group Team received the award given to individuals. The team includes social worker Florence Bender, nurse Linda Schiech, and speech pathologists Kathleen Moran and Liane McCarroll, who together have hosted a patient support group each month for the past 10 years.

“While painting during the gray days of my cancer journey, I realized that if color gave me energy, why couldn’t it do the same for others? September 18th was one day shy of my 10th anniversary being cancer-free. Celebrating it with the Hope Mural will always be unforgettable.”

— SUSAN SCHAFFER, MURAL ARTIST, FOX CHASE CANCER SURVIVOR
CELEBRATING THE “FOX CHASE WAY”
Laurel Society Dinner Honors Important Donors

F
ox Chase friends and supporters looked to the Center’s future and reflected on its past during the annual celebration of the Laurel Society on October 9. “What I saw in 1996 still holds true today,” remarked keynote speaker Eric Horwitz, chair of radiation oncology. “At Fox Chase we have a special combination of clinical talent, research talent, scientists, and nurses—people who care! This is the Fox Chase way.”

The Laurel Society, whose members make gifts of $1,000 or more each year, includes friends of Fox Chase as well as staff members.

Lewis F. Gould, Jr., chair of the Board of Directors, echoed Horwitz’s passion for Fox Chase and spoke about its growth since partnering with Temple University Health System: “Patients are drawn here for our extraordinarily talented and skilled physicians, and more recently for the strong affiliation and coordination between Temple and Fox Chase.”

Gould—who has been a leader at Temple University, his alma mater, for many years—was presented the 2014 Laurel Society Award for his work advancing the Temple–Fox Chase partnership and for securing new resources that position the Center for still greater success.

FOX CHASE ABROAD
Surgical oncologist receives travel fellowship

E
ven on the other side of the world, Fox Chase doctors are advancing cancer care.

Last fall, surgical oncologist Jeffrey Farma was invited to Germany as the 2014 American College of Surgeons (ACS) Traveling Fellow. The fellowship provided Farma with a better understanding of German surgical training, multidisciplinary cancer care, and clinical trial procedures.

“Building international relationships is paramount for advancing surgery,” says Farma. “I learned that surgeons all speak the same language, despite subtle differences in techniques and culture.”

At the 131st Congress of the German Surgical Society (GSS) in Berlin, Farma presented “Changing the Treatment Paradigm for Locally Advanced Rectal Cancer.”

He also spoke about being an ACS scholar and participated in a discussion on building relationships between GSS and ACS, an activity he plans to continue at Fox Chase.

PAWS FOR THE CAUSE

The one-mile charity dog walk supports Fox Chase’s efforts to prevail over cancer and has raised more than $225,000 to date. Paws for the Cause hostess Dawn Timmeney, FOX29 anchor, and her dog, Bodhi, joined Fox Chase President and CEO, Richard Fisher, his wife Susan, and their dogs, Bailey and Clancy (pictured on right) to lead the walk.

Save the date: October 18, 2015
BUILDING A CANCER COMMUNITY

The cancer journey is challenging for both patients and caregivers. To provide resources and support to patients, survivors, and their loved ones, Fox Chase hosted two educational sessions in November focused on lung and gynecologic cancers.

SHINE A LIGHT ON LUNG CANCER
November 6
Part of a national program sponsored by the Lung Cancer Alliance, Shine a Light connected all those in the lung cancer community, from newly diagnosed patients to survivors, caregivers, and health care professionals, to share experiences and information. 6ABC consumer reporter and Action News co-anchor Nydia Han joined Fox Chase doctors, a patient, and a nurse navigator to lead a discussion on treatment and the importance of building a support system.

TOGETHER, FACING GYNECOLOGIC CANCER
November 15
This all-day event, hosted by CBS3 anchor Pat Ciarrocchi and featuring Fox Chase clinicians, researchers, and nurses and even a yogi, covered aspects of gynecologic cancer related to body and mind. Breakout sessions gave people opportunities to talk more intimately and ask questions about palliative care, survivorship, stress management, clinical trials, and hereditary risk assessment, among other topics.

HONORING A LEGACY

After 30 years providing upper abdomen care at Fox Chase, surgical oncologist John P. Hoffman is retiring in June, leaving behind a strong legacy as a physician and teacher. To honor his contributions, the John P. Hoffman Fellowship in Surgical Oncology is being established. The fellowship, funded by colleagues, friends, family, and patients, will ensure that Fox Chase continues to provide the best surgical training program possible.

To contribute to the fund, visit www.foxchase.org/donate/HoffmanFund.

HONORS & AWARDS

Michael H. Levy, director of Fox Chase’s pain and palliative care program, was honored by The American Academy of Hospice and Palliative Medicine with its 2015 Lifetime Achievement Award. The award recognizes Levy’s outstanding contributions and significant publications that have helped shape the field of hospice and palliative medicine. Levy is considered to be a leader of the American hospice and palliative care movement.

C-M Charlie Ma, Fox Chase professor, vice chair of radiation oncology, and director of radiation physics, was named a Fellow of the American Society for Radiation Oncology (ASTRO) at the organization’s 56th Annual Meeting. The Fellows Program honors leaders in radiation oncology who have contributed at least 10 years of service to ASTRO and had a substantial impact on the field through their research, leadership, patient care, and contributions to education.

Fox Chase senior scientist Alfred G. Knudson, Jr., was honored as an Oncology Luminary by the American Society of Clinical Oncology during its 50th anniversary celebration. The honor recognizes exceptional individuals who have helped shape the field of oncology and advanced progress against cancer. Knudson’s “two-hit” theory of cancer causation provided a unifying model for understanding the relationship between hereditary and non-hereditary forms of cancer. Knudson also predicted the discovery of tumor suppressor genes.
Probe any successful institution’s history, and you will naturally find remarkable individuals. Rarer is finding remarkable leadership that comes from an entire family. Such was the case with the Dorrances, whose passion for advancing cancer care helped make Fox Chase Cancer Center into the distinguished place it is today.

The story starts with George M. Dorrance, who set a high bar for medical excellence when he became the first medical director of the American Oncologic Hospital (AOH), one of the founding institutions of Fox Chase, in 1929. An exceptional physician and pioneering plastic surgeon, Dorrance was known for his innovations in head and neck surgery. At the AOH, he encouraged the close dialogue between researchers and clinicians that today continues to characterize Fox Chase. In 1954, five years after Dorrance’s death, the AOH honored his contributions by naming an addition to its campus the George Morris Dorrance Clinic.

The next Dorrance to strengthen the AOH was George M. Dorrance’s son, G. Morris “Morrie” Dorrance Jr., who joined the Board of Trustees in 1957. The hospital had been a part of his life for many years prior, as he would go on rounds with his father as a boy. An accomplished banker—he would later become chairman and chief executive of Philadelphia National Bank—he brought with him a keen business sense. “He wanted to continue his father’s legacy,” says medical oncologist Paul Engstrom, who served as faculty representative on the Board when Dorrance Jr. was chair, and today serves as acting chair of medical oncology. “But he was a banker by background, so he took a great interest in the hospital’s financial success.”

With Dorrance Jr.’s business skills came a leadership style characterized by the personal touch. “He was a focused businessman, but very kindly,” says Engstrom.

“Morrie was always very interested in how people felt and if they were getting what they wanted from their hospital.”

Dorrance Jr. advocated for the AOH’s growth and improvement on all levels. “He played a very important role in recruiting some of the more significant physicians for the hospital,” says former AOH president Edward J. Roach, who still serves as a member of the Fox Chase Foundation Board of Directors.

What’s more, Dorrance Jr. was instrumental in bringing about the formation of the institution we today know as Fox Chase Cancer Center. In 1968, he worked with Roach to champion the AOH’s move from West Philadelphia to Northeast Philadelphia’s Fox Chase neighborhood, where it settled alongside the Institute for Cancer Research (ICR). Six years later, Dorrance Jr. and Roach worked with ICR leadership to cement the merger of the two entities in order to gain new federal funding designated for a then-new type of healthcare facility: the cancer center, which performs both patient care and research—a legacy that Fox Chase embodies to this day.

Dorrance Jr.’s wife, Mary Carter, also contributed to the hospital’s work. Beginning in the 1950s, she volunteered for the women’s auxiliary of the ICR, now known as the Board of Associates, and later chaired the Women’s Board of Managers at AOH. Her involvement is a testament to the important role women played in the success of hospitals at the time by serving as fundraisers and volunteers.

Despite Dorrance Jr.’s 2011 death, the Dorrance name is still part of the Fox Chase firmament. In 2002, friends, family, and Board members established the G. Morris Dorrance Jr. Chair in Medical Oncology, one of 18 endowed chairs created at Fox Chase to recruit and retain excellent faculty—a principle Dorrance Jr. so vigorously supported. “It was more than just an interest,” says Engstrom. “It was his passion to see Fox Chase succeed, grow, and become what it is today.”
The Dorrance Memorial Clinic at the American Oncologic Hospital, built 1954

Morrie Dorrance, Edward J. Roach, Timothy R. Talbot Jr., and G. Willing Pepper led the formation of Fox Chase Cancer Center in 1974

G. Morris “Morrie” Dorrance Jr.