Richard I. Fisher, MD

“This place transcends any walls or boundaries or rules to test what is known about cancer and to reach for the next discoveries and the latest breakthroughs. It is the people here who make these achievements possible.”

Our People: Mackenzie L. Abate, Philip Abbosh, Andrea Abbott, Nejat H. Abdella, Lisa Abruzzo, Tyler I. Achuff, Jennifer Lynn Adams,
Forging Ahead

It is a transformative time for Fox Chase Cancer Center as we begin to pave our future together with new partners. As we move forward, we celebrate the successes of the last year. We continue to reimagine, reinvigorate, renew as we build on the century-plus legacy of our nationally recognized institution.

This year’s Annual Report features a distinctive design element: A ribbon running at the bottom of each page that bears the names of every employee within our institution. It represents some 2,400 people who contribute to our mission in a multitude of different ways. Each one has an important role, all unified by a common thread: Our shared stewardship of Fox Chase Cancer Center.

This place transcends any walls or boundaries or rules to test what is known about cancer and to reach for the next discoveries and the latest breakthroughs. It is the people here who make these achievements possible. And we do so in a manner not always seen at other institutions—with a level of collegiality and a spirit of collaboration and caring that honors our patients and pays respect to each other. It is our privilege to do this work.

In these pages, you will read about the recruitment and leadership performance of key figures at our Center and how their vision is driving Fox Chase forward. Our distinctive status—newly earned last year—as a prime contractor of the National Cancer Center and how their vision is driving Fox Chase and leadership performance of key figures at our Center within our institution. It represents some 2,400 people who contribute to our mission in a multitude of different ways. Each one has an important role, all unified by a common thread: Our shared stewardship of Fox Chase Cancer Center.

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In these pages, you will read about the recruitment and leadership performance of key figures at our Center and how their vision is driving Fox Chase forward. Our distinctive status—newly earned last year—as a prime contractor of the National Cancer Institute’s PREVENT Cancer Preclinical Drug Development Program is highlighted as well. We are one of only seven institutions in the country to hold this designation, which provides access to millions of dollars in federal grants for preclinical testing of preventive therapeutics and advancement of promising drugs to clinical trials.

Also among our clinical advances, Fox Chase became the first cancer center in the Philadelphia region, and only the third nationwide, to use an innovative technology called the Monarch Platform for earlier and more accurate diagnosis of lung cancer. We purchased it with funds raised through our annual signature event, the In Vino Vita Benefit and Wine Auction. With an increasing number of both guests and dollars raised each year since our inaugural event in 2014, IVV has grown to become an overwhelming success.

Finally, we saw achievement throughout our research enterprise. From training opportunities for the next generation of scientists taking part in our Immersion Science Program, to competitive grants and accolades awarded to postdoctoral researchers and principal investigators alike, we know that our progress can be boundless when we remain open to possibility and determined to succeed.

To all those who support us by investing their time, their energy, and even their funds, we appreciate the great responsibility that comes along with your trust in us. Together, we forge ahead to prevail over cancer.

Richard I. Fisher, MD
President and CEO at Fox Chase
Richard I. Fisher, MD

“We continue to reinvent, reimagine, renew as we build on the century-plus legacy of our nationally recognized institution.”
Margie Clapper, PhD

For 20 years, Clapper has been the principal investigator at Fox Chase for the National Cancer Institute’s PREVENT Cancer Preclinical Drug Development Program.
Clapper Heads Preclinical Preventive Drug Development Partnership

Fox Chase has the distinction of being one of only seven centers designated as a prime contractor of the National Cancer Institute’s PREVENT Cancer Preclinical Drug Development Program.

As Principal Investigator of the program at Fox Chase, Margie Clapper, PhD, the Samuel M.V. Hamilton Chair in Cancer Prevention, was recently approved to continue her 20-year legacy in this partnership. Under this mechanism, approved drug development concepts are tested in preclinical models, with the most promising agents moving into clinical trials.

“This mechanism, while not traditional, allows greater flexibility to test candidate preventive agents for which there is strong rationale but limited preliminary data,” said Clapper, who is Deputy Scientific Director and co-leader of the Cancer Prevention and Control Program. PREVENT, she added, supports the preclinical analysis of promising agents in mouse models and the establishment of biomarkers of drug activity for use in future clinical trials.

Clapper said that over the next five years, $49 million will be available through the PREVENT program to support studies conducted by prime contractors.

“It continues to be a great privilege to work closely with the National Cancer Institute to identify promising agents for the prevention of cancer,” Clapper said. She added that the contracts provide Fox Chase with an opportunity to work with compounds they normally wouldn’t have the ability to evaluate.

Clapper is currently testing a novel agent developed at the Mitchell Cancer Center in Mobile, Alabama, for its ability to inhibit colorectal cancer. Another project, headed by Joseph Testa, PhD, the Carol and Kenneth E. Weg Chair of Human Genetics at Fox Chase, is assessing the activity of an agent against asbestos-induced malignant mesothelioma.
Center Wins HAP Award for Optimizing Patient Discharge, Transitions

Fox Chase received a 2019 HAP Achievement Award from The Hospital and Healthsystem Association of Pennsylvania (HAP) for its outstanding efforts to enhance its processes for managing patient discharge planning and care transitions.

The Center was one of 14 recipients selected from 127 total submissions across five categories for the awards. Winners were chosen for innovation in community health projects, quality improvement efforts, and operational efficiencies.

Mary Pat Winterhalter, MS, BSN, RN, NE-BC, director of nurse navigation, and Tricia Heinrichs, BS, RRT, PMP, manager of performance improvement, submitted the Center’s entry. They accepted the award in the Optimal Operations category at HAP’s 2019 Leadership Summit in Harrisburg in May.

Paul Engstrom Retires After Nearly 50 Years

When Paul Engstrom, MD, FACP, his wife Janet, and their three young children moved to Philadelphia in 1970, Fox Chase Cancer Center did not exist. It wasn’t until a few years after his arrival that the American Oncologic Hospital and the Institute for Cancer Research merged to form Fox Chase.
Paul Engstrom, MD, FACP
Retired at the end of 2018 after nearly 50 years at Fox Chase, where he was a pioneer in cancer prevention and education.
Engstrom became a pioneer, building a legacy in cancer prevention and education that has impacted thousands of lives. During his time at Fox Chase, he focused on cancer screening, creating one of the nation's first cancer prevention and control programs. He retired at the end of 2018.

“Most doctors and oncologists in the 1970s were training to treat cancer, not necessarily to prevent it,” said Carolyn Fang, PhD, co-leader of the Cancer Prevention and Control Program at Fox Chase. “He was one of the first to recognize that prevention was important. While this concept may seem obvious today, it was considered groundbreaking 40 years ago.”

Over the years, Engstrom’s reputation and influence grew. As a member of several leading cancer organizations, he helped write the clinical care and treatment guidelines followed by physicians around the world.

He was a founding member of the National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines Committee and has served the NCCN as chair and member of several committees through the years. He’s also served on the cancer prevention and screening boards of the National Cancer Institute, the American Society of Clinical Oncology, the American Association of Cancer Institutes, and the American Cancer Society.

“He doesn’t just know the answer. He’s created them and he’s created the standard of care that we all use,” said Crystal Denlinger, MD, FACP, Chief of the Division of Gastrointestinal Medical Oncology at Fox Chase. “He’s just a different breed of physician. You go to him when you’re stuck because he’s seen it all before.”

Reddy Takes Over Clinical Reins at Greenberg Institute

Since its inception in 2017, the Marvin and Concetta Greenberg Pancreatic Cancer Institute has evolved in its efforts to improve the treatment of pancreatic cancer through the work of basic and clinical scientists. That evolution will continue as Sanjay S. Reddy, MD, FACS, a co-director of the institute, takes over the clinical reins from John Hoffman,
Is the Marvin S. Greenberg, MD, Endowed Chair in Pancreatic Cancer Surgery.

Her lab has demonstrated that pulsed low dose rate radiation has a beneficial effect on pancreatic tumors.
Sanjay S. Reddy, MD, FACS

Is taking over the clinical reins of the Marvin and Concetta Greenberg Pancreatic Cancer Institute.

Paul Campbell, PhD

An award-winning pancreatic cancer researcher, he is a member of the Marvin and Concetta Greenberg Pancreatic Cancer Institute.
MD, FACS, who is now the Marvin S. Greenberg, MD, Endowed Chair in Pancreatic Cancer Surgery. Igor Astsaturov, MD, PhD, will continue in his role as a co-director of the institute.

Surgery has always been an important tool for treating localized pancreatic cancer, and Reddy and Hoffman have safely performed multiple extensive procedures.

In addition to surgical approaches, there are now a series of clinical trials enrolling pancreatic cancer patients. Work is also continuing on new approaches to tumor banking specimens and implementing various gene profiling techniques.

Researchers will continue to improve the technique of incorporating stereotactic body radiotherapy into treatment protocols for localized pancreatic cancer, which allows for precise delivery of radiation to tumors.

The institute is also in the process of launching a Phase I clinical trial using pulsed low dose rate radiation (PLDR). The lab of Edna Cukierman, PhD, who is also a co-director of the institute, has demonstrated that PLDR has a beneficial effect on pancreatic tumors.

New Brachytherapy Approach for Treatment of Retroperitoneal Sarcoma

Krisha Howell, MD, and colleagues are participating in a registry trial of a unidirectional low-dose rate brachytherapy implant called CivaSheet that is being investigated to improve local control in the setting of recurrent retroperitoneal sarcomas.

“We are trying this approach to prevent gastrointestinal toxicity found in previous trials of omnidirectional brachytherapy implants,” said Howell, an assistant professor in the Department of Radiation Oncology. She is working with Joshua E. Meyer, MD, associate professor and vice chair of Radiation Oncology. He is also a co-director of the institute, has radiation (PLDR). The lab of Edna Cukierman, PhD, who is also a co-director of the institute, has demonstrated that PLDR has a beneficial effect on pancreatic tumors.

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She presented early data on the use of the device in a poster at the 2018 annual meeting of the American Society of Radiation Oncology.
Joshua E. Meyer, MD  
Krisha Howell, MD  

Howell is participating in a trial for the use of a brachytherapy implant for recurrent retroperitoneal sarcomas; she is working with Meyer, associate professor in the Department of Radiation Oncology.

New Web Tool Rapidly Matches Patients to Clinical Trials

Finding an appropriate clinical trial that matches specific patient characteristics is frustrating. To solve this problem, a team at Fox Chase developed a user-friendly interface that searches the center’s numerous clinical trials to find appropriate Phase I trials.

“Once we find a trial, we know it’s a match. We see the protocol number, the investigational drugs and how they work, key inclusion/exclusion criteria, whether biopsies are needed, and the contact personnel,” said Anthony J. Olszanski, MD, RPh, Vice Chair of the Department of Hematology/Oncology.

The web interface was built by Olga Tchuvatkina, manager of the Population Studies Facility, with colleagues from the Population Sciences Group. The data in the interface are updated in real time, so physicians can determine whether open slots are available in a trial at any given time.

Patient Richard Skelton has experienced the...
benefits of the system firsthand. He was referred to the Center in 2017 after being diagnosed with melanoma, and Olzanski used the interface to find a Phase I trial for him in December 2017 and another in April 2019.

“Having dealt with the doctors at Fox Chase, I knew they weren’t going to play around. I knew they were going to take care of me,” Skelton said.

**Initial Data on Innovative Technology for Lung Cancer Diagnosis**

In August 2018, Fox Chase Cancer Center became the first in the Philadelphia area, and only the third institution nationwide, to begin using the Monarch Platform to view hard-to-reach nodules in the periphery of the lungs and obtain a tissue sample for biopsy, thus enabling earlier and more accurate diagnosis.

“Robotic control, direct visualization, and turn-by-turn direction allow us to reach the previously unreachable,” said Christopher J. Manley, MD, director of interventional pulmonology.

So far, Monarch has been used in 190 cases at Fox Chase and has had an “unparalleled” safety profile, Manley said. He added that the overall diagnostic yield at one year has been 71% with further increase based on inclusion of true negatives after radiological follow up of 39 negative lesions.

The platform, which is made by Auris Health, integrates the latest advancements in robotics, software, data science, and endoscopy. It was purchased with funds raised through the In Vino Vita Benefit and Wine Auction.

“We are excited about the promise of this technology to shorten the time from the discovery of a lung nodule to the treatment of a lung cancer,” Manley said.

**Harnessing Power of the Latest Prostate Cancer Screening Technology**

Fox Chase was first in the region to use the UroNav fusion targeted biopsy system, which uses MRI and ultrasound images to locate the ideal places to take tissue samples. This process may find tumor sites that wouldn’t be detected in a standard biopsy.
Christoph Seeger, PhD

Received the Hepatitis B Foundation's 2019 Baruch S. Blumberg Prize for excellence in hepatitis B research.
That means Fox Chase is several years ahead of other centers in the area in terms of experience with the technology, said Alexander Kutikov, MD, FACS, chief of the Division of Urologic Oncology. “There’s a level of expertise that we now have that a lot of other programs don’t.”

**Seeger Receives Hepatitis B Foundation’s Baruch S. Blumberg Prize**

Christoph Seeger, PhD, professor and senior scientist at Fox Chase, received the Hepatitis B Foundation’s 2019 Baruch S. Blumberg Prize for excellence in hepatitis B research in April. The award’s namesake, a Nobel Prize winner, spent 25 years of his remarkable career at Fox Chase.

“Dr. Seeger’s outstanding contributions to hepatitis B molecular biology have had implications not only for hepatitis B, but for all viruses,” said Timothy Block, PhD, president of the Hepatitis B Foundation. “We are proud to recognize the impact of his work in hepatitis B research.”

**Junior Faculty Receive Over $14 Million in Research Grants**

Fox Chase has long been a powerhouse when it comes to research funding, but over the last year, junior faculty have been particularly successful. Eight of them were awarded just over $14 million to study bladder, head and neck, lung, colorectal, prostate, and breast cancer.

Jennifer Barsky Reese, PhD, received a five-year grant for $3 million from the National Cancer Institute to test an intervention that addresses sexual concerns in women who have been treated for breast cancer. Reese was an assistant professor in the Cancer Prevention and Control Program at the Fox Chase Cancer Center.
time the grant was awarded and was recently promoted to associate professor.

Stephen M. Sykes, PhD, assistant professor in the Blood Cell Development and Function Program, received a four-year grant for $792,000 from the American Cancer Society to support research on the elucidation and exploitation of molecular pathways that support leukemia. He also received an R01 grant worth approximately $2 million over five years.

**Johnathan R. Whetstine Joins Cancer Epigenetics Program**

Nationally renowned epigenetics researcher Johnathan R. Whetstine, PhD, was hired as program leader of the Fox Chase Cancer Epigenetics Program in November. Whetstine came to Fox Chase from Harvard Medical School in Boston, where he served as a vice chair of their epigenetics program.

A rising star in the field of epigenetics, Whetstine has made groundbreaking discoveries that have expanded the field and provided significant understanding of tumor heterogeneity and drug response.

“We welcome Dr. Whetstine and are excited to strategically expand our research enterprise with this hire,” said Richard I. Fisher, MD, president and CEO of Fox Chase. “Epigenetics is evolving into a critical area in oncology research, and we are proud to have such a high-caliber scientist to lead our program.”

The new Cancer Epigenetics Program that Whetstine will lead has basic, translational, and clinical research components, all dedicated to better understanding epigenetic regulation in cancer. The program’s findings will help to improve diagnosis,
Recently hired as program leader for the Cancer Epigenetics Program, he came to Fox Chase from Massachusetts General Hospital Cancer Center and Harvard Medical School in Boston.
prognosis, and outcomes for various malignancies.

Whetstine has made groundbreaking discoveries that have expanded the field and had significant implications for understanding tumor heterogeneity and drug response. In recognition of the promise of his research, he has been awarded the prestigious Scholar award from the Leukemia & Lymphoma Society, the Lung Cancer Discovery Award from the American Lung Association, and a National Institutes of Health R01 grant, as well as funding from the Alex's Lemonade Stand Foundation and AstraZeneca.

Among many professional leadership activities, Whetstine led and organized multiple national and international conferences on epigenetics and disease. He has also received many invitations to speak at international conferences and world-class institutions, serves on top-tier journal editorial boards, and reviews for top-tier peer-reviewed journals. He also serves as a reviewer for the NIH and multiple foundations.

Gardiner Receives ACS Research Grant for Pancreatic Cancer

Jaye Gardiner, PhD, a postdoctoral researcher in the Edna Cukierman laboratory at Fox Chase, received a $163,500 research grant to study ways to identify better treatment options for pancreatic cancer patients.

The grant is from the American Cancer Society’s newly formed Pennsylvania/New Jersey Pay-If Research Council. It will allow Gardiner to continue her efforts to understand the signaling that arises from cell-cell interactions in the pancreatic tumor microenvironment.

Gardiner has also won the Science Communication Prize from the Mindlin Foundation and was a semifinalist for the HHMI Hanna H. Gray Fellows Award.

Foreigner Benefit Concert

On May 4, 2019, Fox Chase partnered with Parx Casino in Bensalem to host a benefit concert with classic rock band Foreigner. A percentage of each ticket sold was donated to Fox Chase. With 10 multiplatinum albums and 16 top 30 chart hits, Foreigner is considered one of the most popular rock acts in the world.
Jaye Gardiner, PhD

A postdoctoral researcher, she received a large research grant from the American Cancer Society to study ways to identify better treatment options for pancreatic cancer patients.
Five Faculty Appointed to Endowed Chairs

In May 2019, Fox Chase announced the appointment of five endowed chairs made possible through the private philanthropy that is so critical to the advancement of cancer research.

Hossein Borghaei, DO, MS, was appointed to The Gloria and Edmund M. Dunn Chair in Thoracic Oncology. The chair was established in 2002 to support an outstanding leader in the field of lung cancer research and thoracic surgical oncology.

Margie L. Clapper, PhD, was appointed to The Samuel M.V. Hamilton Chair in Cancer Prevention, which was established in 2011 by Mrs. Dorrance Hamilton to honor her husband and his more than 40 years of service to Fox Chase.

Erica Golemis, PhD, was appointed to The William Wikoff Smith Chair in Cancer Research, which was established in 1998 to support an outstanding leader in the field of cancer research who exemplifies the highest standards of excellence in academic research.

Mariusz A. Wasik, MD, was appointed to The Donald E. and Shirley C. Morel, Stanley and Stella Bayster Chair in Molecular Diagnostics. The chair was established to strengthen the efforts of Fox Chase in molecular diagnostics and genomic testing, as well as molecular hematopathology and translational research.

Johnathan R. Whetstine, PhD, was appointed to The Jack Schultz Chair in Basic Science. His endowed chair, which was established in 2002 by Fox Chase’s Board of Associates, honors pioneering geneticist Jack Schultz, PhD, and supports an outstanding leader in the field of basic science.
ISP Event Draws Over 1,000 High School Scientists

Philadelphia’s Franklin Institute was the site of the 2019 Immersion Science Program (ISP) Classroom Research Symposium on May 29. The research program included over 1,000 citizen scientists from 14 high schools in the Philadelphia area, 725 more than last year.

The symposium, organized by scientific trainees and faculty from Fox Chase, featured cancer research presentations by attendees as well as career guidance and networking. Funding was supported in part by Fox Chase Cancer Center’s Kicking Cancer Fund, a career development grant from the Genetics Society of America, and grant funding from the Society of Developmental Biology and the Howard Hughes Medical Institute.

Longtime Board Member Edward J. Roach Dies

Edward J. Roach, who was a member of the board of directors at Fox Chase since 1956, died on June 10, 2019, at age 94. In 1968, when Fox Chase was still the American Oncologic Hospital, Roach worked with board chairman G. Morris Dorrance Jr. to move the hospital from West Philadelphia to its present location.

“He had a kind heart, listened carefully to what others had to say, and lived his life with an optimistic approach,” Richard I. Fisher, MD, president and CEO of Fox Chase, wrote in a letter announcing the death of Roach. “Fox Chase and his service to this institution represented a deep and meaningful part of his life.”

Volunteering Is a Family Affair

Volunteers have long played a vital role at Fox Chase, and this past year was no exception, with 531 volunteers contributing 88,319 hours of their time. Denise “Dee” Hansen is one of them. She volunteers in the Family Surgical Waiting Suite and as an Ambassador at the Clinical Support Desk.

Hansen’s mother, Edith Snyder, started volunteering at Fox Chase 16 years ago, and her daughter followed in her footsteps. So did Hansen’s sister, Donna Knitter, who is a certified pet visitor volunteer who brings her...
dog in to interact with patients and staff. Hansen's mother was eventually diagnosed with metastatic breast cancer and was treated at Fox Chase.

“Mom always knew she would volunteer after she stopped working,” Hansen said. “Mom has a personal connection with the disease. Many family members had been given the diagnosis of cancer.”

Hansen, who has been volunteering for two years now, spends six hours a week at the Center: “I have been looking for a way to serve people since retiring from teaching. Fox Chase has been a great fit,” she said. “The experience has proven to be tremendously satisfying,” she added. “I meet patients, family members, and employees of Fox Chase who are all interested in reducing the burden of cancer.”

In Vino Vita Raises $1.2 Million

On April 6, 2019, the sixth annual In Vino Vita benefit and wine auction raised $1.2 million. The event, which was held at Vie in Philadelphia, drew nearly 500 generous supporters of Fox Chase. Louis and Carol Della Penna served as wine chairs for the sixth year.

Response to the special pledge was overwhelming. Event chairs Margot and Robert Keith kicked it off with a gift of $100,000 that was matched by Susan and Bill Federici, along with an anonymous donor. This year's project will support translational research, which bridges the gap between the laboratory and the clinic. Support from the event will help advance the speed at which research makes a positive impact on patient care.

Family Hikes to Raise Funds for Lung Cancer Research

Two family members of a patient who was treated for lung cancer at Fox Chase raised over $4,500 for researcher Margie Clapper, PhD, by hiking a 130-mile section of the Appalachian Trail in eight days. The patient, Janet Plasha, was a never-smoker who died of lung cancer at 48.

Plasha's family held a basketball tournament last year to raise money. This year, however, Bern Leibensperger, Plasha's sister-in-law, and Kara Leibensperger, Bern's daughter, decided to do
something different. Instead, they hiked the Appalachian Trail from Buena Vista, Virginia, to Blacksburg, Virginia, starting June 15, 2019, and ending June 23. “We had some really hard climbs,” Bern said. “Sometimes I found myself complaining and then I would think about Janet and the tough times she endured. I quickly remembered that I had no reason to complain.”

Friends of Fox Chase Go Above and Beyond
The Board of Associates of Fox Chase Cancer Center, founded in 1965, has had a tremendous impact on cancer research and care through fundraising and volunteering. One of the first chapters to form was The Friends of Fox Chase Cancer Center in 1969, which means it is celebrating its 50th anniversary this year.

What makes this chapter so special is that it is completely comprised of staff who volunteer in addition to their everyday responsibilities. These inspiring employees have invested their personal time and resources to ensure the chapter can provide extra-special patient comfort items, clinical care improvements, staff training, and more.

“When you open your eyes with purpose it opens your heart. There is no turning back. You see it, you feel it, and you know it is the right thing to do,” said Linda Hammell, the chapter’s president.

Fox Chase Team Helps Kick Cancer
On August 3, 2019, nearly two dozen Fox Chase employees took part in Philly Kicking Cancer, the 11th installment in the annual kickball tournament, which raises money for cancer research. Since 2009, Philly Kicking Cancer has raised over $300,000.
Linda Hammell
President of The Friends of Fox Chase Cancer Center, which celebrated its 50th anniversary in 2019.
International Collaborations, Volunteer Efforts Continue to Grow

Over the last several years, Fox Chase Cancer Center has initiated various collaborations with hospitals, universities, and companies around the world. Many of these initiatives are run by Fox Chase International, a division of the Center that works to export skills and expertise in cancer prevention, detection, and treatment, and to establish advanced cancer treatment centers abroad in accordance with applicable laws and regulations. Other international outreach involves volunteer work by doctors and nurses. This map highlights a few of the projects that have taken place or are ongoing.

LOCATION: Bahamas
PARTNERS: University of the West Indies, Princess Margaret Hospital
FOCUS: The African-Caribbean Cancer Consortium (AC3), a group dedicated to increasing research capacity in the Caribbean to investigate cancer trends, recently took action to empower health providers to deal with the challenges of breast and prostate cancer. Camille Ragin, PhD, MPH, an associate professor in the Cancer Prevention and Control Program at Fox Chase, founded and leads AC3. Robin Roberts, director of the University of the West Indies, is co-leader of AC3’s prostate cancer research working group.

LOCATION: Haiti
PARTNER: iTOT
FOCUS: Fox Chase nurses Nicole Seeley, RN, MSN, and Sandi Wetherbee, RN, MSN, OCN, traveled to Haiti with a multidisciplinary team, where they provided mobile medical clinics in and around Port-Au-Prince, Haiti’s capital. During the trip, which was sponsored by the Christian nonprofit iTOT, they also helped treat a scabies outbreak, held a baby check clinic, and performed eye exams.

LOCATION: Dominican Republic
FOCUS: Jeffrey Farma, MD, FACS, chief of the Division of General Surgery, was part of a medical mission that went to the Dominican Republic, where he performed surgeries and helped train residents. The trip was arranged by Abington Health and Luke World Mission, a Christian medical nonprofit. Farma went with surgical, primary care, and pediatric teams.
LOCATION: Beijing, China
PARTNER: Beijing Friendship Hospital
FOCUS: Fox Chase will provide consultative services intended to enhance the hospital’s existing clinical trial capabilities. In the future, the Friendship Hospital hopes to expand its own trials, while serving as a site for Fox Chase to conduct studies suitable for multiple, diverse populations.

LOCATION: Beijing, China
PARTNER: MORE Health
FOCUS: Fox Chase has established a partnership that gives patients from across the world access to the nationally ranked physicians of Fox Chase through MORE Health’s Physician Collaboration Platform. The service is delivered by a full-featured, intuitive, and compliant online platform that allows physicians to efficiently deliver a diagnosis and treatment plan to patients in collaboration with their treating physicians in their home countries.

LOCATION: Qiqihar, China
PARTNER: 3rd Affiliation Hospital of Qiqihar Medical University
FOCUS: The goal of the relationship is to give Chinese physicians access to Fox Chase oncologists who help with clinical and operational performance improvement plans. The success of the affiliation has led to the formation of additional affiliations in the Chinese cities of Benxi and Xi’An. It has also led other American cancer centers to participate in the program.

LOCATION: Delhi, India
PARTNER: Rajiv Gandhi Cancer Center & Research Institute (RGCI)
FOCUS: Under this relationship, Fox Chase will provide remote second reviews and treatment plans for RGCI patients requesting such services. The Fox Chase Remote Assessment Service is designed to allow patients to stay at home while our team of physicians conducts an in-depth study of medical records, diagnostic images, and pathology to tailor a plan for treatment.

LOCATION: Mozambique and Zambia
PARTNERS: Nurses for Africa & Hands at Work
FOCUS: Fox Chase nurses Diana DiMarcantonio Kott, MSN, RN, OCN, and Sarah Payonk, BSN, RN, traveled to Zambia, where they saw 900 villagers during the clinic days that they held. The trip was run by Nurses for Africa, which worked with an African volunteer group called Hands at Work. In addition to providing hygiene and perinatal education, they also distributed food and clothing. On another trip with the same organizations, Dana Adamson, RN, assisted with two days of clinics in Mozambique in which over 700 people were seen. On the other days, she helped with health education sessions.

LOCATIONS: Shanghai and Chengdu, China
PARTNER: Multinational China-Based Healthcare Group
FOCUS: Under this partnership, Fox Chase will assist with the establishment of a biosample repository in China. While many biorepositories exist in China, none operate in full compliance with best international practice or contain enough samples of adequate quality to meet the large and growing demand of Chinese academic or government research facilities, domestic or international pharmaceutical companies, or the biotechnology industry.
Donors

The Laurel Society

The Laurel Society is the signature donor society of Fox Chase Cancer Center, honoring our most generous supporters—individuals, corporations, foundations, community fundraisers, and Fox Chase faculty and staff. Individual members demonstrate their commitment by providing annual support of $1,000 or more during Fox Chase’s fiscal year (July 1 through June 30). Corporations, foundations, and community fundraisers become members at the $5,000+ level.

Founders’ Circle

$500,000 +

The Estate of D. Ruth Browne
Patricia A.* & Robert E. Keith, Jr.
Concetta Greenberg
Alice M. Hungerford
Roberta R. & Ernest Scheller

Advocates’ Circle

$25,000 - $99,999

Maggie & Bob Beck
Betty Ann & R. Reginald Bishop
Carol Elfant
Gloria E. & Steven A. Ellers
Susan G. & Richard I. Fisher
The Estate of Rene E. Fleischmann
Michael Haber
Kay & Thomas W. Hofmann
Aurora M. & Timothy P. Hughes
Judith & Thomas K. Leidy
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The Estate of Spirios Philip Livanis
Salli & Stephen R. Mickelberg
Judith & James F. Mitchell III
Leon O. Moulder
Ann L. & Frank E. Reed
The Estate of Dolores M. Renneberg
Robin & John C. Spurillo
The Estate of Bayard L. Stonehill
Harry Tankin
Carol J. & Stephen E. Young

Champions’ Circle

$10,000 - $24,999

Anonymous
Sharon & William J. Avery
The Estate of William Barbier
The Estate of Alice C. Bassett
Cindy & Jack Bienenfeld
Lucy S. Binder
Suzanne H. & Frank G. Binswanger, Jr.
Claire G. & Bernard A. Borghesi
Regina & Robert J. Brennan
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Mary Ann Sells & Jonathan Chernoff
Reina S. & Michael A. Cohen
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Wei-Jue Cui & Ting L. Shi
The Estate of Joan M. & John A. Dietze
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Karen A. & Michael D. Flynn
Jean A. & G. Wesley Frazier
Doris & Arnold Glaberson
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Adele* & Joseph Gugliotta
Bonnie A. & Allen C. Haldeman
Lynn & Brian Hochberg
Susan & Robert C. Hollander
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Stephen Rosenzweig
William J. Ryan
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Samuel T. Test
Cheryl & Robert G. Uzzo
Leigh Wyszowski
Marina Zanazis
Anne & Grover Albright
Cathy & Ed Atkins
Judith L. Bachman
Myra & John M. Ballinger, Jr.
Lewis H. Bender
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The Elizabeth Anderson Society honors thoughtful friends of Fox Chase who have established gifts in the form of a bequest, gift annuity, charitable remainder trust, charitable lead trust, life insurance policy, retirement account, or select gifts of real estate.

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Financials

### 2019 By the Numbers
- **640** Scientific Publications
- **120,087** Outpatient Visits
- **8,637** New Patients
- **26** New Faculty Members
- **294** Actively Enrolling Clinical Research Studies
- **98** Investigator Initiated Clinical Research Studies

**Numbers represent Fiscal Year 2019**

### Philanthropy Snapshot
- **$14,832,857** Total Philanthropic Support
- **$1,200,000** Raised at *In Vino Vita*
- **11,466** Total Donors
- **3,826** Total New Donors
- **451** Current Donors Who Have Given 30+ Years
- **$461,731** Board of Associates Total Gifts

### Volunteer Snapshot
- **531** Volunteers
- **88,319** Total Volunteer Hours
- **$280,094** Volunteer Department Budget
- **$2,245,952** Value of Hours*
- **$1,965,858** Net Value Added to Fox Chase

*Based upon the independent sector value of $25.43/hr.
**Clinical Snapshot (In Thousands)**

**REVENUES — CLINICAL ACTIVITY**

<table>
<thead>
<tr>
<th>Description</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care Revenue — Hospital</td>
<td>$410,402</td>
</tr>
<tr>
<td>Patient Care Revenue — Physicians</td>
<td>$34,629</td>
</tr>
<tr>
<td>Philanthropy, Outreach &amp; Other</td>
<td>$11,710</td>
</tr>
<tr>
<td><strong>Clinical Revenue</strong></td>
<td><strong>$456,741</strong></td>
</tr>
</tbody>
</table>

**OPERATING EXPENSES — CLINICAL ACTIVITY**

<table>
<thead>
<tr>
<th>Description</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Patient Care</td>
<td>$335,001</td>
</tr>
<tr>
<td>Support Services</td>
<td>$19,008</td>
</tr>
<tr>
<td>Administrative &amp; General</td>
<td>$50,169</td>
</tr>
<tr>
<td>Capital Related Costs</td>
<td>$8,265</td>
</tr>
<tr>
<td>Maintenance &amp; Plant Operations</td>
<td>$12,056</td>
</tr>
<tr>
<td><strong>Clinical Expenses</strong></td>
<td><strong>$424,499</strong></td>
</tr>
</tbody>
</table>

**KEY PATIENT CARE STATISTICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Patients</td>
<td>8,637</td>
</tr>
<tr>
<td>Hospital Admissions</td>
<td>3,814</td>
</tr>
<tr>
<td>Chemotherapy Infusions &amp; Related Procedures</td>
<td>64,692</td>
</tr>
<tr>
<td>Radiation Therapy Treatments</td>
<td>27,411</td>
</tr>
<tr>
<td>Surgical Procedures</td>
<td>5,054</td>
</tr>
</tbody>
</table>

---

**Research Snapshot**

**ACTIVE FUNDED PROJECTS**

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Number of Projects</th>
<th>Direct Costs</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PEER-REVIEWED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCI</td>
<td>81</td>
<td>$12,407,245</td>
<td>$20,284,919</td>
</tr>
<tr>
<td>Other NIH</td>
<td>57</td>
<td>$12,249,984</td>
<td>$18,358,208</td>
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<tr>
<td>Other</td>
<td>34</td>
<td>$4,991,888</td>
<td>$6,884,943</td>
</tr>
<tr>
<td><strong>Subtotal of peer-reviewed</strong></td>
<td>172</td>
<td>$29,649,117</td>
<td>$45,528,070</td>
</tr>
<tr>
<td><strong>NON PEER-REVIEWED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>80</td>
<td>$5,690,731</td>
<td>$7,319,709</td>
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<tr>
<td>Other non peer-reviewed</td>
<td>31</td>
<td>$2,245,986</td>
<td>$2,541,620</td>
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<tr>
<td><strong>Subtotal of non peer-reviewed</strong></td>
<td>111</td>
<td>$7,936,717</td>
<td>$9,861,329</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>283</td>
<td>$37,585,834</td>
<td>$55,389,399</td>
</tr>
</tbody>
</table>
Types of Cancer Treated

- Lung: 10%
- Kidney: 6%
- Bladder: 5%
- Prostate: 17%
- Breast: 17%
- Colorectal: 4%
- Head & Neck: 3%
- Pancreas: 3%
- Gynecological: 10%
- Other: 15%
- Skin: 8%
- Lymphoma: 2%
FY19 Payer Mix

- Commercial: 41%
- Medicare: 36%
- Medicare Managed Care: 14%
- Medicaid: 8%
- Self Pay/Other: 1%
Leadership & Faculty

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Cancer Center Director  
Senior Associate Dean, Lewis Katz School of Medicine at Temple University

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Deputy Director  
Special Assistant to the President for Academic and Professional Affairs

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CHAIR: Rosaleen Parsons, MD  
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Sarah Abdulla, MD  
Jordan Anaokar, MD
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<td>Steven Mattleman, MD</td>
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<td>Anthony Santoro, MD</td>
<td>Endocrinology</td>
<td>GASTROENTEROLOGY</td>
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<td>Pankaj Sharda, MD</td>
<td>Michael Bartel, MD</td>
<td>Michael Bartel, MD</td>
</tr>
<tr>
<td>Jennifer Higa, MD</td>
<td>Jeffrey Tokar, MD</td>
<td>HOSPITALISTS</td>
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<td>Minhuyen Nguyen, MD</td>
<td>Daniel Holleran, MD</td>
<td>Daniel Holleran, MD</td>
</tr>
<tr>
<td>Krishnalatha Sreekrishnaniyam Devakiamma, MD</td>
<td>Gilber Lafontant, MD</td>
<td>_ _</td>
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<tr>
<td>Usmina Ali, MD</td>
<td>Hayley Walker, MD</td>
<td>PAULINE MEDICINE</td>
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<tr>
<td>Paulo Finestone, PhD</td>
<td>Craig Lichtman, MD</td>
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<tr>
<td>Michelle Rodoltez, PhD</td>
<td>Michelle Rodoltez, PhD</td>
<td>PSYCHIATRY</td>
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<tr>
<td>Alan Haber, MD</td>
<td>Emmie Chen, MD</td>
<td>_ _</td>
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<tr>
<td>Rohit Kumar, MD</td>
<td>Suzanne Doubrava, MD</td>
<td>PAULINE MEDICINE</td>
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<tr>
<td>Christopher Manley, MD</td>
<td>Paula Finestone, PhD</td>
<td>Alan Haber, MD</td>
</tr>
<tr>
<td>Julio Noriega, MD</td>
<td>Craig Lichtman, MD</td>
<td>Roshan Kumar, MD</td>
</tr>
</tbody>
</table>

**Department of Radiation Oncology**

**CHAIR:** Eric M. Horwitz, MD  
**Department of Surgical Oncology**

**CHAIR:** Robert G. Uzzo, MD  
**Department of Radiation Oncology**, **Department of Surgical Oncology**

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<thead>
<tr>
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<th>CHAIR: Eric M. Horwitz, MD</th>
<th>PENNY ANDRESON, MD</th>
<th>Jo Ann Chalal, MD</th>
<th>Lili Chen, MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randall Cohen, MD, MS</td>
<td>Thomas Galloway, MD</td>
<td>Mark Hallman, MD</td>
<td>Shelly Hayes, MD</td>
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<tr>
<td>Sameera Kumar, MD</td>
<td>Sameera Kumar, MD</td>
<td>Joshua Meyer, MD</td>
<td>Mark Sobczak, MD</td>
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<tr>
<td>Sangeeta Tyerech, MD</td>
<td>Sangeeta Tyerech, MD</td>
<td>Kyoko Hayakawa, MD</td>
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<tr>
<td>1 Carsten Szyf, PhD</td>
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<td>1 Carsten Szyf, PhD</td>
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</tr>
</tbody>
</table>

### Research Faculty

<table>
<thead>
<tr>
<th>CHAIR: Martin J. Edelman, MD</th>
<th>Hematology/Oncology</th>
</tr>
</thead>
</table>
| Fahrenheit Schaller, MD      | SCIENCE,
| Athanasios Gafanides, PhD   | SCIENCE,
| 
### Blood Cell Development & Function

<table>
<thead>
<tr>
<th>PROGRAM LEADERS</th>
<th>Siddharth Balachandran, PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIMARY MEMBERS</td>
<td>Kerry S. Campbell, PhD</td>
</tr>
<tr>
<td>Richard I. Fisher, MD</td>
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<td>Henry Fung, MD</td>
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<td>Kyoko Hayakawa, MD</td>
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<td>Dietmar J. Kappes, PhD</td>
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<td>Koumiss SKI, MD, DSC</td>
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### Cancer Biology

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### Fox Chase Cancer Center at Temple University Hospital

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<tr>
<th>LOCATION</th>
<th>Temple University Hospital</th>
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<tbody>
<tr>
<td>CHAIR: Martin J. Edelman, MD</td>
<td>Hematology/Oncology</td>
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| Fahrenheit Schaller, MD | SCIENCE,
| Athanasios Gafanides, PhD | SCIENCE,
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### Annual Report 2019

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<th>ANNUAL REPORT 2019</th>
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<td>grenn Rall, PhD</td>
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Molecular Therapeutics
PROGRAM LEADERS
Erica A. Golemis, PhD
Erica Golemis, PhD

PRIMARY MEMBERS
Philip Abosh, MD, PhD
Rodrigo Andrade, PhD
Mark Andrade, PhD
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Elias Obeid, MD
Camille Ragin, PhD
Jennifer Reese, PhD
Eric Ross, PhD
Laura Siminoff, PhD
David S. Weinberg, MD
Kuang-Yi Wen, PhD

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PROGRAM LEADERS
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Carolyn Y. Fang, PhD

PRIMARY MEMBERS
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Sanjeevani Arora, PhD
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Wen-Chi Chang, PhD
Bradley N. Collins, PhD
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Mary B. Daly, MD
Efrat Dotan, MD
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1 Newly promoted faculty at Fox Chase Cancer Center
2 Newly recruited faculty at Fox Chase Cancer Center
3 Member of the Fox Chase Cancer Center clinical faculty
4 Faculty based at Temple University

*Deceased