

# More than Courage



**DANA-FARBER  
CANCER INSTITUTE**

# It takes more than courage to beat cancer®

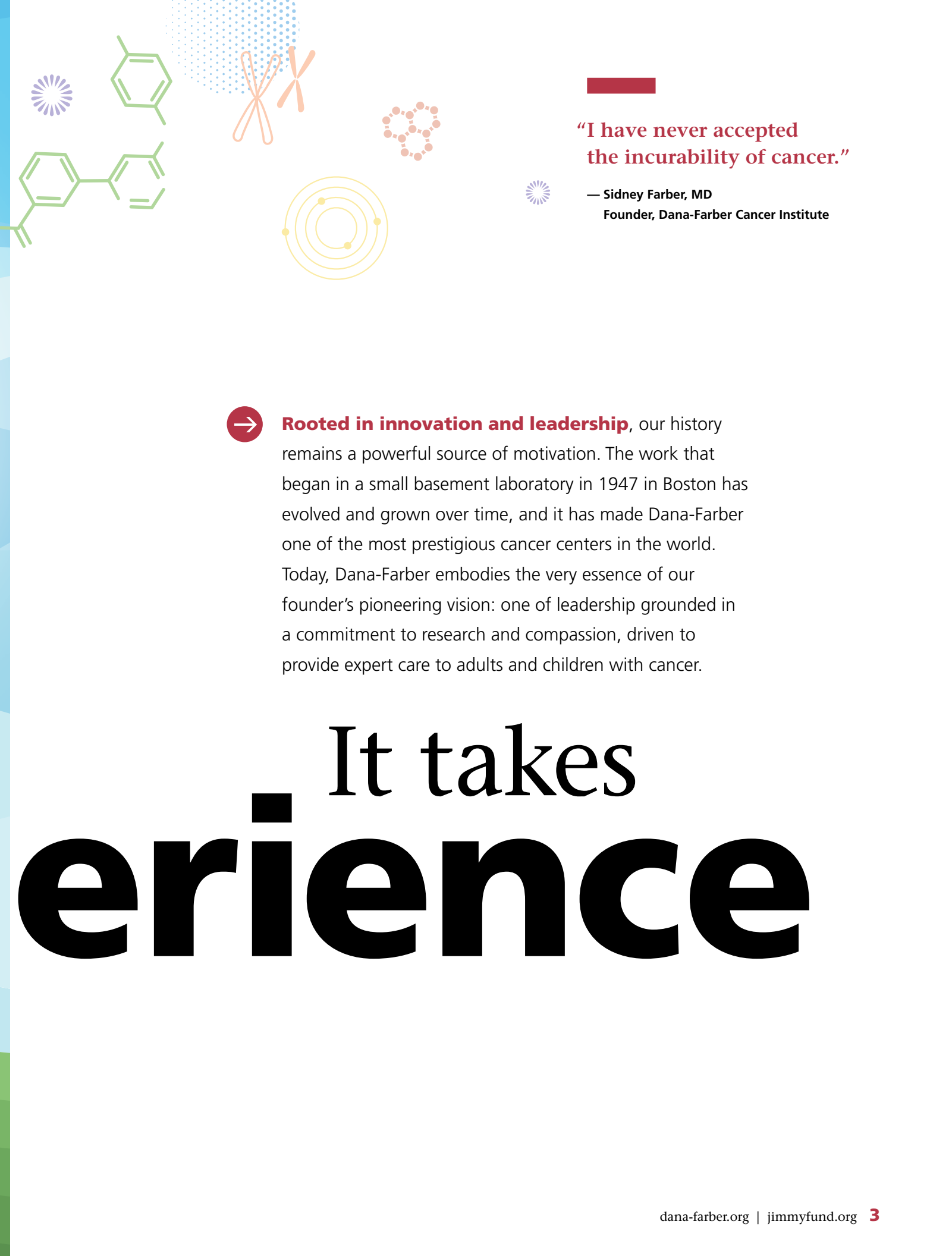


What does it take to beat cancer? It takes courage, yes, and that is just the beginning. It takes world-class researchers, doctors, and technologically advanced facilities. It takes teams of dedicated professionals who offer compassionate care every day, gathering insight to inform and advance treatments for everyone. It takes focus and determination—people committed to taking the bold steps necessary to advance the cause. It also takes you.

 **DANA-FARBER**  
CANCER INSTITUTE

— SUPPORTED BY —

 **The  
Jimmy Fund®**



It takes  
**Experience**



## Experience

# A Revolutionary Vision

Dana-Farber founder Sidney Farber, MD, is the father of modern chemotherapy. Founding the Institute in 1947 in Boston, Dr. Farber and his team dedicated their work to providing compassionate, state-of-the-art treatment for cancer patients, while researching cures of the future.

Very little was known about cancer at the time and few options for treatment existed; instead the focus was simply on making patients as comfortable as possible. The mortality rate for children suffering from leukemia, a blood cancer, was an unfathomable 100 percent—a harsh reality that Dr. Farber refused to accept.

### The Turning Point

In 1947, Dr. Farber tackled the deadliest of childhood cancers—acute lymphoblastic leukemia (ALL). He gave

16 young ALL patients the anti-folate drug aminopterin; 10 experienced the very first responses to treatment of ALL ever reported. The discovery marked the first, but hardly the last, time that Dr. Farber would spearhead an advance against cancer.

In the clinic, Dr. Farber also created the idea of what is now called “total patient care.” This approach is a hallmark of Dana-Farber today, and it underscores our commitment to treating the whole patient, not just his or her disease.

Throughout the 1950s and 1960s, the pace of discovery and care progressed under Dr. Farber’s leadership, as did national and grassroots funding for cancer research. The Institute officially expanded its programs to include patients of all ages in 1969 and, in 1983, was renamed Dana-Farber Cancer Institute in honor of our founder and our historic philanthropic partner, the Charles A. Dana Foundation. ■



Dana-Farber founder Sidney Farber, MD, with a young patient.

Dana-Farber is a global leader in cancer research and patient care.

## 494,000+

Patient visits and infusions, annually

## 4,500+

Faculty and staff

**50** Independent research laboratories

**20** Interdisciplinary disease centers



## Decades of Excellence

Dr. Farber’s foresight and determination to find a cure for cancer has endured during the past seven decades. The Institute has helped set the standard of care and research worldwide.

### 1948

Dr. Farber establishes a chemotherapy program for children—the first initiative of its kind.

### 1954

Our researchers are the first to discover a treatment that boosts cure rates from 40% to 85% in patients with Wilms tumor, the most common childhood kidney cancer.

### 1977

Our physician-scientists use pre-operative chemotherapy to facilitate the world’s first limb-salvaging surgeries for children with osteosarcoma, leading to increased cure rates and improved quality of life.

### 1980

Institute President Baruj R. Benacerraf, MD, receives the Nobel Prize for his work on the genetic underpinnings of the human immune system.

### 1993

Dana-Farber establishes the High Risk Research Clinic, one of the nation’s first genetic testing programs for members of families with an inherited susceptibility to cancer.

### 2001

Dana-Farber basic scientists discover how a protein called PD-L1 helps cancer cells evade detection by the immune system, leading to FDA approval of the first PD-1 inhibitor immunotherapy drug in 2014.

### 2005

Dana-Farber is the first hospital in New England to receive the American Nurses Credentialing Center’s Magnet® status, the highest honor in nursing care. The Institute receives this status twice more, in 2009 and 2014.

### 2011

The Institute launches Profile, the only initiative in the world that offers genetic sequencing to all incoming patients. To date, more than 27,000 patients have had their tumors analyzed for mutations in 400 cancer-related genes.

### 2018

Dana-Farber is the top ranked cancer hospital in New England by U.S. News and World Report for the 18th consecutive year; it is also the only cancer center in the country ranked in the top 4 for both adult and pediatric cancer programs.



# It takes Teamwork

“Collaboration creates the fastest route from scientific discovery to treatment. By working together—both within Dana-Farber and throughout the entire medical community—we can more quickly uncover new cures for patients.”

— Laurie H. Glimcher, MD  
President & Chief Executive Officer,  
Dana-Farber Cancer Institute  
Richard and Susan Smith Professor of Medicine,  
Harvard Medical School

→ **Cancer will not be cured by one scientist or one lab alone.** At Dana-Farber, we know that scientific advancement can progress only through collaboration. Team science is at the core of all of our work. Dana-Farber scientists learn, share, and advance our cause through this essential collaboration. Ours is a culture that encourages researchers to share their learning within our ranks, with researchers outside of the Institute, and with the scientific community at large. As a result, Dana-Farber is indisputably one of the world’s most respected cancer centers and a leader of innovation and discovery in the global search for cures.



## Teamwork

# Strength in Numbers

Our collaborative approach is called “team science.” We work from the premise that solving a problem as complex as cancer requires the coordination of teams of investigators with diverse skills and knowledge.

It is only together that we can provide expert, compassionate care to children and adults with cancer and advance the understanding, diagnosis, treatment, cure, and prevention of cancer and related diseases.

**The Very Best and Brightest**  
A team-based approach to conquering cancer is only as good as the people on those teams. Dana-Farber is renowned for, and continues to make significant investments in, attracting and retaining those clinicians and scientific minds who are redefining care and research.

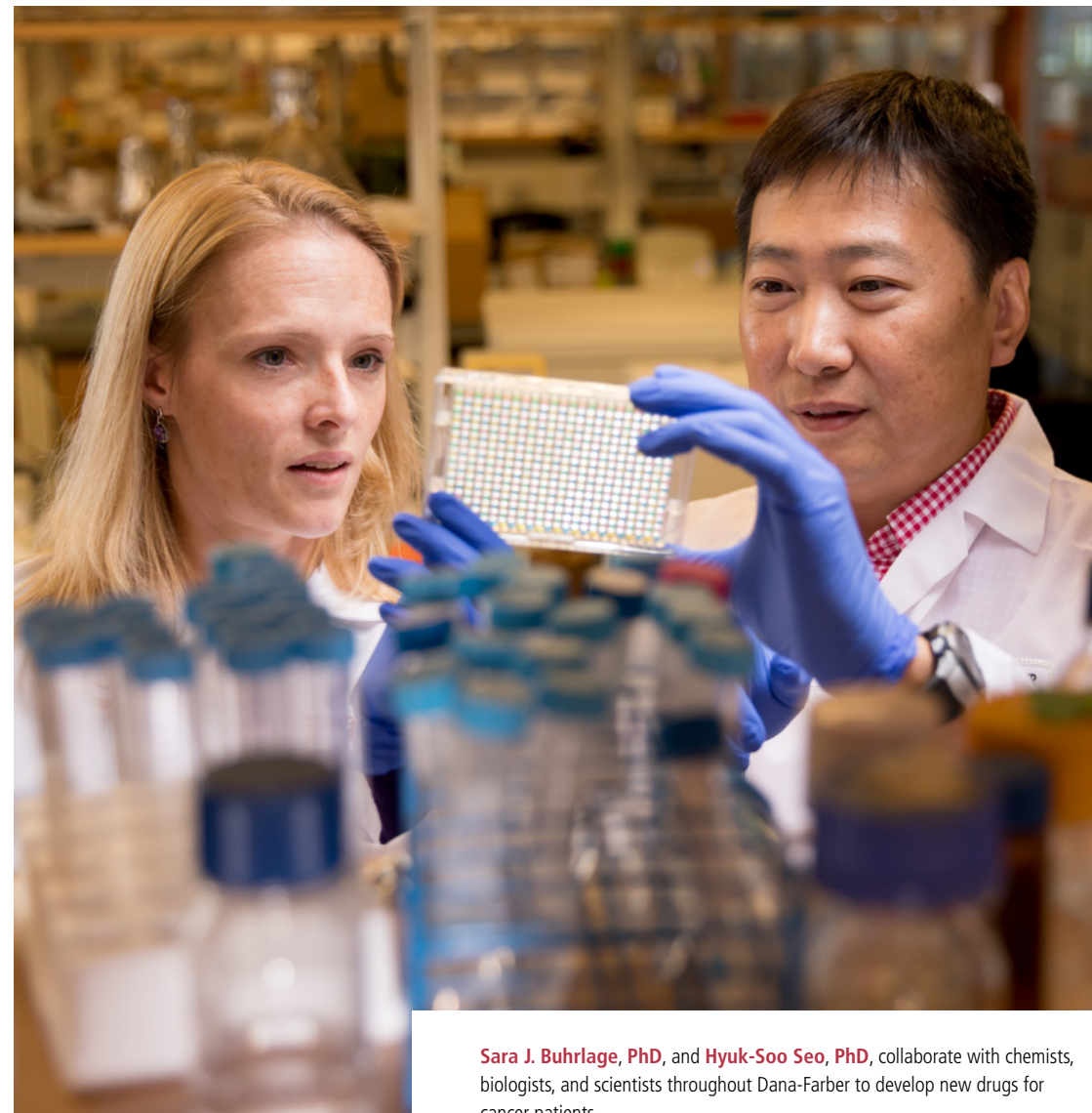
Working together, our physician-scientists, nurses, researchers, and caregivers share a singular focus: the well-being of the patient.

### From Bench to Bedside—and Back

Our Yawkey Center for Cancer Care is at the heart of Dana-Farber’s campus. Central to the building’s design are the bridges that connect our patient clinics to Dana-Farber’s research laboratories in other buildings.

This physical link facilitates Dana-Farber’s “bench-to-bedside” approach, envisioned by founder Sidney Farber, MD, in the 1940s. Our physician-scientists can literally carry discoveries from the laboratory bench to a patient’s bedside, and results from bedside to bench. ■

Bridges connect our **Yawkey Center for Cancer Care** to other Dana-Farber facilities, such as the Charles A. Dana Building and the Richard A. and Susan F. Smith Research Laboratories, as well as to partner institutions Boston Children’s Hospital and Brigham and Women’s Hospital.

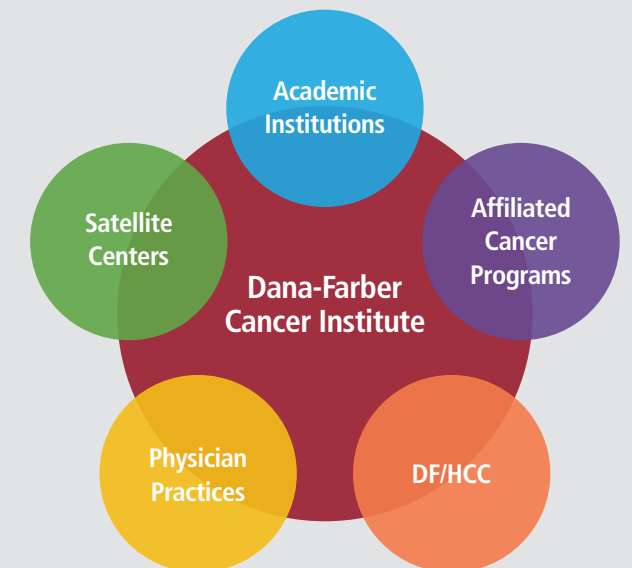


Sara J. Buhrlage, PhD, and Hyuk-Soo Seo, PhD, collaborate with chemists, biologists, and scientists throughout Dana-Farber to develop new drugs for cancer patients.



## A Network of Excellence

Dana-Farber is the lead institution in the Dana-Farber/Harvard Cancer Center (DF/HCC), one of the largest comprehensive cancer centers in the world. DF/HCC consists of more than 1,100 researchers from seven member institutions. In addition, we collaborate with a variety of other hospitals, academic institutions, and organizations to find new and innovative ways to combat cancer and bring excellence in cancer care into communities throughout the Northeast.



### Academic Institutions

- › Massachusetts Institute of Technology
- › The Broad Institute

### Affiliated Cancer Programs

- › Berkshire Medical Center
- › Cape Cod Hospital
- › Eastern Maine Medical Center
- › Eastern Maine Health System
- › Lifespan Cancer Institute
- › New England Cancer Specialists
- › New York Oncology-Hematology
- › Stamford Hospital
- › UMass Memorial Medical Center

### DF/HCC

- › Beth Israel Deaconess Medical Center
- › Boston Children’s Hospital
- › Brigham and Women’s Hospital

### DF/HCC (cont.)

- › Massachusetts General Hospital
- › Harvard Medical School
- › Harvard T.H. Chan School of Public Health

### Physician Practices

- › Dana-Farber Community Cancer Care

### Satellite Centers

- › Dana-Farber Cancer Institute at St. Elizabeth’s Medical Center
- › Dana-Farber/Brigham and Women’s Cancer Center at Milford Regional Medical Center
- › Dana-Farber/Brigham and Women’s Cancer Center in clinical affiliation with South Shore Hospital
- › Dana-Farber/New Hampshire Oncology-Hematology

Dana-Farber also partners with many major pharmaceutical and biotech companies to drive drug development and deliver new treatments to patients, faster.

Dana-Farber intern and former pediatric patient, **Kate Franklin**, and **Loren Walensky, MD, PhD**, pediatric oncologist and principal investigator, Linde Family Program in Cancer Chemical Biology.



— Barrett J. Rollins, MD, PhD  
Chief Scientific Officer,  
Dana-Farber Cancer Institute  
Linde Family Professor of Medicine,  
Harvard Medical School

# It takes vation



## Innovation

# Cracking the Cancer Code

It is a complex fight, yet Dana-Farber researchers are advancing the field against cancer on every front. They are exploring the molecular changes that cause tumors, testing new therapies and drug combinations, and enlisting patients' immune systems in the battle.

### The Right Treatment at the Right Time

Unlike previous treatment models, based on the anatomical location of the cancer in the body—such as breast, lung, or colon—precision medicine categorizes a patient's tumor according to its particular genetic defects. Dana-Farber's flagship precision medicine initiative, Profile, identifies the distinctive genetic blueprint that defines each participating patient's cancer and links that information with his or her clinical data. This enables us to treat some patients with drugs designed to counteract their specific cancerous mutations.

### New Drugs Bring New Hope

The past few decades have taught us that cancer is a disease of the genes. More than 500 genetic mutations are known to drive tumor growth, but only a fraction have corresponding FDA-approved drugs capable of stopping that growth. To overcome this "missing

drugs phenomenon," our chemical biologists are assembling new drug compounds that target genes involved with cancer. In concert, we actively work with partners at leading pharmaceutical and biotechnology companies to test and deliver these new drugs to market, expanding the pool of therapies for all patients.

### Harnessing the Power of the Immune System

Remarkable advancements have been made in recent years in the development of immunotherapies: treatments that harness the power of the human immune system to fight disease. Such treatments have enormous cancer-fighting potential, and can be more effective and less toxic than traditional chemotherapy. Through our team science approach, disease-focused cancer specialists work with immunology experts to translate their scientific understanding of immunotherapies into treatments to help patients with many different types of cancer. ■



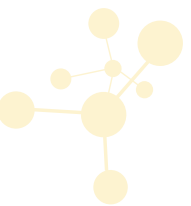
Dana-Farber's **William G. Kaelin Jr., MD**, winner of the prestigious 2016 Lasker Award for Basic Medical Research, works to translate molecular discoveries into more effective cancer therapies.



Dana-Farber researcher **Zara Khan, PhD**, works with a team focused on understanding how cancer cells evade detection by the immune system.

# 276

Research grants sponsored by the National Institutes of Health



Research conducted by **Gordon Freeman, PhD**, (right) led to the development of **Barry's** lung cancer treatment.

## → The Intersection of Research and Treatment

Radiation and chemotherapy had done little to slow Barry's lung cancer before he started a clinical trial of an immune checkpoint inhibitor. Within a month of its start, the disease was in retreat, with CT scans showing dramatic shrinkage of the tumors. While Barry was initially told he had just two years to live, now he felt well enough to bicycle to his medical appointments.

Dana-Farber nurse Joan Lucca, RN,

MSN, asked Barry if he would like to meet the man who saved his life. A short time later, a gentle-mannered man walked up and introduced himself. He was Gordon Freeman, PhD—a scientist of nearly 30 years and the leader of the team whose discoveries led to the development of Barry's treatment. For a laboratory scientist such as Dr. Freeman, the opportunity to meet a patient who directly benefited from his work is exceedingly rare.

"I asked him how it felt to be offered this new drug and at what point he knew that it was working," Dr. Freeman said. "Barry is a real searcher; when the initial treatments failed, he simply would not take 'no' for an answer."

"He said that it is marvelous to see that I'm doing so well, and regaining my health and my life," Barry said. "It's been great to get to know the person who's given me this gift."



## Innovation

### Five Drugs in Five Weeks

In a span of five weeks in 2015, the FDA gave approval to five new cancer drugs that were proven effective in Dana-Farber-led clinical trials—and, in some cases, derived from basic research in Dana-Farber laboratories.

These approvals mark advances in the treatment of several major types of cancer, including certain soft-tissue sarcomas, non-small cell lung cancer, and multiple myeloma.

The Dana-Farber-led science and testing of these agents covered the full range of drug development—from earliest discovery and phase 1 studies, in which novel agents are tested for the first time in humans, to large-scale phase 3 clinical trials, in which the agents' safety and effectiveness are compared to that of standard therapies.



**Kornelia Polyak, MD, PhD**, strives to discover new treatments for breast cancer patients.



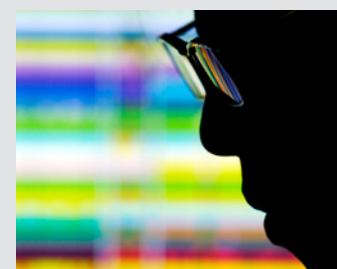
Dana-Farber researcher **William Shih, PhD**, is exploring nanotechnologies to improve cancer treatment.

**830**  
Clinical trials  
open to Dana-Farber  
patients



**577**  
Research fellows  
train in  
Dana-Farber labs  
and centers

### Big Data Leads to Big Insights



Analyzing tumors produces vast quantities of information. The torrent of data on a single patient can be overwhelming. Making sense of this data takes the expertise of specially trained computational biologists, who look for patterns, interpret the data, and advise researchers and physicians on clinically actionable information. Applying expertise in big data analysis to cancer research is accelerating the pace of discovery at Dana-Farber.



**“I am continuously amazed by the doctors, nurses, and staff who dedicate their lives to helping the patients and their families. They treat each and every person as if they were their own family.”**

— Kyndra, a Dana-Farber patient

→ **At Dana-Farber, we treat the whole patient**, not just the disease. From the moment a patient walks through our doors, that person is surrounded by a multidisciplinary team working as one to provide a highly personalized treatment plan. We complement this treatment with attention to patient families, offering a range of programs that address the entire family’s social, emotional, financial, spiritual, and psychological needs. We call it “total patient care,” an approach that sets Dana-Farber apart from other cancer centers.

# It takes Compassion



## Compassion

# A Higher Standard

Many cancer centers offer high-quality care. What sets Dana-Farber apart is the extraordinary level of clinical expertise and the quality of care that patients and families receive from their entire health team—oncologists, nurses, psychologists, and other professionals.

Working closely together, our teams create treatment plans that are specific to each patient and their family, addressing the full spectrum of physical, psychological, and spiritual needs that they face. This total patient care approach fosters an environment of comfort and hope that helps ease the burden of cancer.

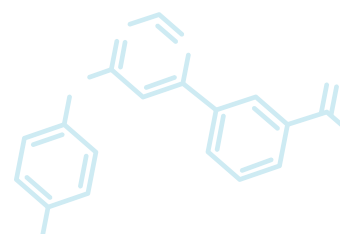
This high standard of skill and care has earned Dana-Farber some of the most prestigious awards in the field, including 18 years as the top ranked cancer hospital in New England by U.S. News and World Report and achieving Magnet® status three times, the highest recognition for nursing excellence. ■



Dana-Farber patient Marie with nurse Maura Dacey, RN.

“You walk in the door at Dana-Farber, and you feel care.”

— Ronny, a Dana-Farber patient, breast cancer survivor, and member of the Dana-Farber Patient and Family Advisory Council



Gabriel Lozada of Ambulatory Services with patient Henry.

**97%** of patients would recommend Dana-Farber

**97%** of patients are satisfied with the skill and knowledge of their doctor

**96%** of patients are satisfied with their care at Dana-Farber

According to a 2015 survey conducted by Press Ganey

## Finding Comfort at Dana-Farber

After struggling for a year with misdiagnosed illnesses, 2-year-old Bridgette and her parents traveled from their Albany, NY, home to Dana-Farber in Boston. There, tests showed Bridgette had neuroblastoma. While she began treatment, her parents, Roger and Beth, took turns driving the 175 miles home to care for Bridgette’s 5-year-old sister, Trinity, and see other family members.

It was a difficult time. Roger was taking time off from his job, and the family continued to pay rent on an empty apartment in Albany while expenses piled up in Boston.

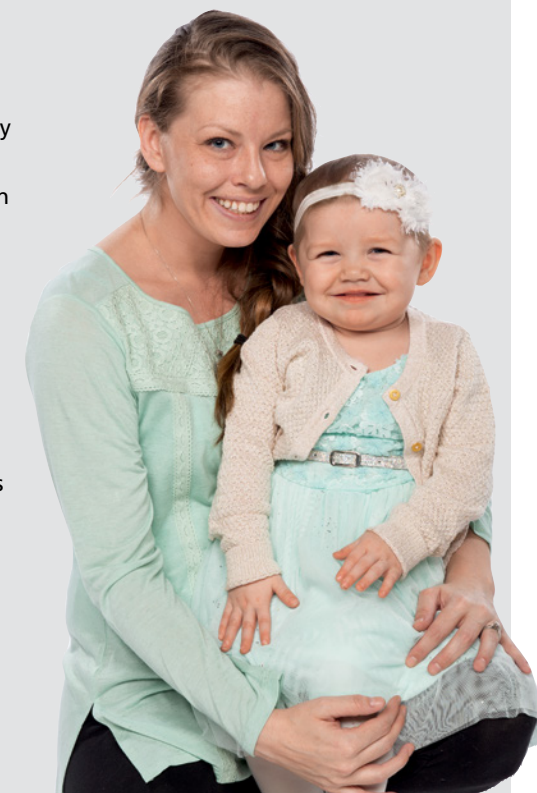
“That was a hectic, crazy period,” Roger recalled. “Once we realized what we were facing with Bridgette’s cancer—including surgery—we looked around at the incredible people taking care of us here and decided to move and be here all the time.”

Every new pediatric patient family at Dana-Farber meets with a social worker or a psychologist from the Pediatric Psychosocial Oncology Program. Social worker Deborah Berk, MSW, LICSW, helped the family with the psychosocial challenges of facing cancer in an unfamiliar city. In addition, Joe Chabot, MS, manager of Dana-Farber’s Pediatric Resource Program, provided guidance with accessing financial assistance for rent and day-to-day costs.

“The support we got from the doctors, nurses, and everybody else at Dana-Farber was incredible,” says Beth. “So many people were willing to help us in so many ways.”

Bridgette had surgery to remove her tumor and has since been cancer-free. ■

Dana-Farber Jimmy Fund Clinic patient Bridgette with her mother, Beth.





# Compassion

## Treating Mind, Body, and Spirit

Dana-Farber offers a range of services that treat the whole patient, including nutrition consults, exercise, creative arts, integrative therapies, support groups, financial assistance, and many programs and activities.

These programs are designed to support patients and their families throughout the cancer journey, helping to reduce the pain and stress associated with treatment, and ease the burden of cancer.



### Department of Psychosocial Oncology and Palliative Care

Ours is the only department in the nation where palliative care, psychosocial oncology, and social work are fully integrated. Experts work in collaboration with the entire care team to provide pain management, emotional assistance, and spiritual support to patients and their families.



Karen Fasciano, PsyD, director of the Young Adult Program, with patient Lauren.



Yoga is among the complementary therapies that can help patients feel better during treatment.



### Leonard P. Zakim Center for Integrative Therapies and Healthy Living

Our Zakim Center focuses on improving quality of life for patients through complementary therapies including acupuncture, massage, meditation, exercise, music, and other activities. Studies show that, working in concert with traditional medicine, integrative therapies can help patients feel better during treatment and reduce side effects.



Jimmy Fund Clinic patient Patrick shares a special moment with Shawn Benson.



Dana-Farber patient Rob with nurse Elizabeth Castronovo, NP.



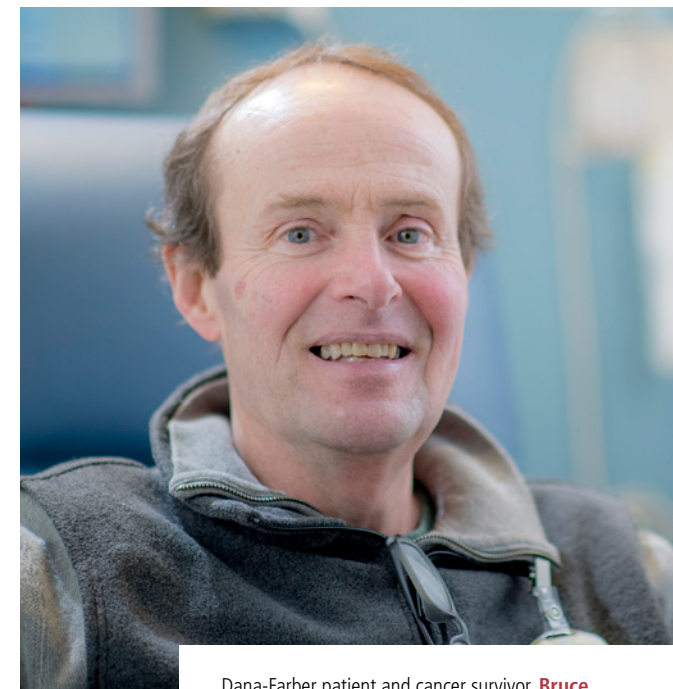
### Department of Nursing and Patient Care Services

Nurses are critical members of the health care team—they are clinicians, educators, scientists, care coordinators, and advocates who help steer the course of patients' care. Our nurses work closely with physicians toward one unwavering goal: the delivery of expert care in an environment that fosters hope and healing.



### Dana-Farber's Jimmy Fund Clinic

Our pediatric clinic offers Dana-Farber's world-class care in a fresh, colorful, and comfortable environment that lets kids be kids. Patients can play before and during treatment in age-appropriate space, creating a social and warm atmosphere that helps to ease their anxiety.

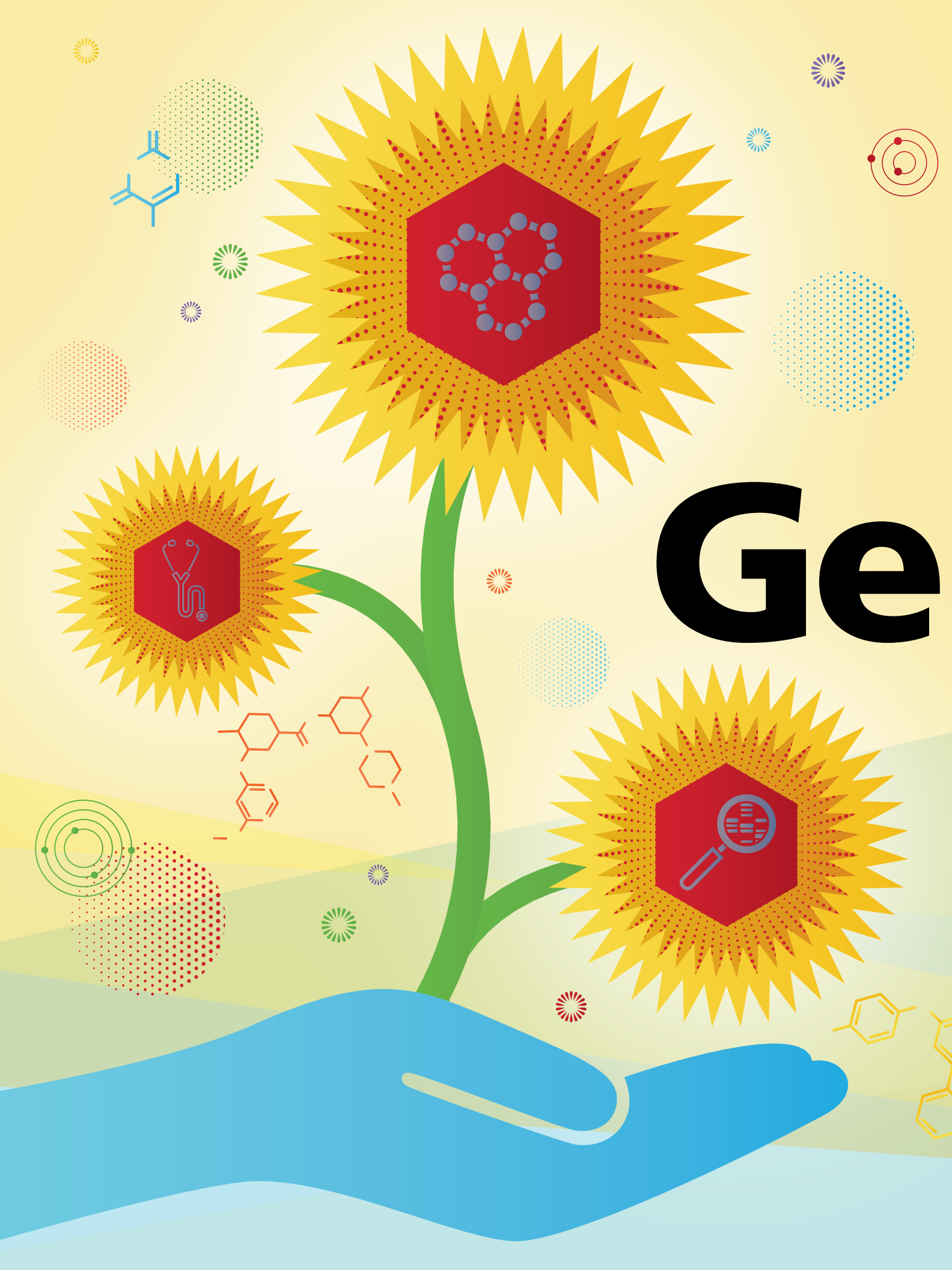


Dana-Farber patient and cancer survivor, Bruce.



### Perini Family Survivors' Center

Patients diagnosed with cancer are living longer than ever before thanks to remarkable research and treatment advances, many of which have been pioneered at Dana-Farber. Our survivorship center offers the expertise and support needed to help survivors and their caretakers understand the long-term physical, emotional, and social effects of cancer treatment.



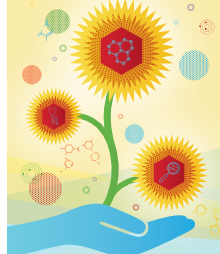
# It takes Generosity

“With the help of our generous donors, Dana-Farber will continue to advance research and save even more lives, until our mission to conquer cancer is achieved.”

— Josh Bekenstein  
Chairman, Board of Trustees,  
Dana-Farber Cancer Institute

→ **It is through philanthropy that we are empowered.**

From the generous individuals, foundations, and corporations who commit millions of dollars, to the hundreds of Jimmy Fund events that raise significant funds, every dollar given drives Dana-Farber’s mission. Donor support galvanizes our scientists, allowing them to break down obstacles and pursue new discoveries, and enables our caregivers to deliver compassionate, specialized treatment to each and every patient.



## Generosity

# The Power of Philanthropy

Generosity fuels our ability to pursue excellence at every level.

Through the support of donors, Dana-Farber can invest in research and care advances, as well as the space and technology needed to progress our work and attract the very best physicians and scientists in the world.

For many years, federal funding was the lifeline for cancer research. However, this funding has since become unpredictable and fallen flat. In recent years, gifts from generous individuals, corporations, foundations, and organizations fill this “funding gap” and ensure that Dana-Farber remains at the forefront of cancer discovery and care.

### Partners in Progress

But there is still much more work to be done in our relentless pursuit to conquer cancer. Funds are needed to keep pace in this rapidly changing era of cancer treatments, and to invest in the tools and resources needed to advance promising research, accelerate drug development, and deliver new and personalized treatments. ■



◀ Many generous donors supported the construction of our **Yawkey Center for Cancer Care**, a state-of-the-art outpatient care and clinical research facility. The Thea and James Stoneman Healing Garden (pictured) is one of several customized spaces that create a welcoming and healing environment.

▶ Donor support powered Dana-Farber's campus expansion. At the **Longwood Center** (pictured), our world-class chemists and biologists are working together, and across the Institute and industry, to accelerate the pace of novel drug discovery.

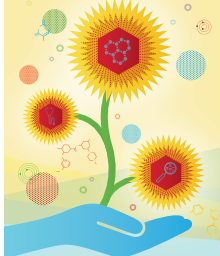


Dana-Farber research facilities are equipped with modern technology, thanks to the generosity of donors. **Irene M. Ghobrial, MD**, uses a powerful microscope to conduct innovative studies on hematologic cancers.



Dana-Farber Jimmy Fund Clinic patient **Maggie** enjoys arts and crafts with her mother, **Caroline**. Through philanthropic support, we are able to advance our signature “total patient care”—addressing the physical, emotional, and psychosocial needs of our patients and their families.





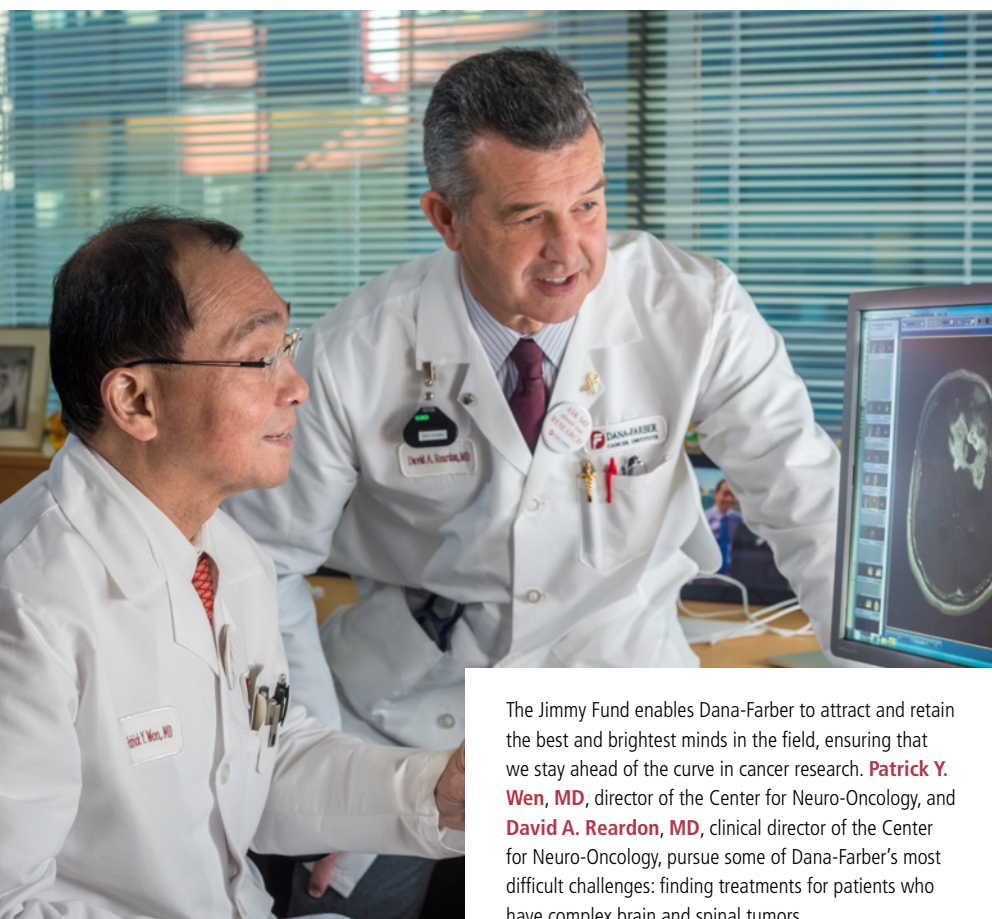
## Generosity

# The Jimmy Fund: Moving Many to Raise Millions

Since its founding in 1948, the Jimmy Fund has generated millions of dollars to support Dana-Farber and our mission to conquer cancer.

From an annual walk that raises the most money of any single-day walk in the nation, to the oldest and largest charity golf program across the country, to more than 750 additional fundraising events every year, the Jimmy Fund rallies the community to support Dana-Farber.

Harnessing the power of many, the Jimmy Fund is an incredible source of strength for the Institute. It raises millions of dollars each year for Dana-Farber to advance cutting-edge research that impacts the lives of patients and their families.



The Jimmy Fund enables Dana-Farber to attract and retain the best and brightest minds in the field, ensuring that we stay ahead of the curve in cancer research. **Patrick Y. Wen, MD**, director of the Center for Neuro-Oncology, and **David A. Reardon, MD**, clinical director of the Center for Neuro-Oncology, pursue some of Dana-Farber's most difficult challenges: finding treatments for patients who have complex brain and spinal tumors.



Riders in the Pan-Mass Challenge (PMC), an organization that has supported Dana-Farber and the Jimmy Fund since 1980.



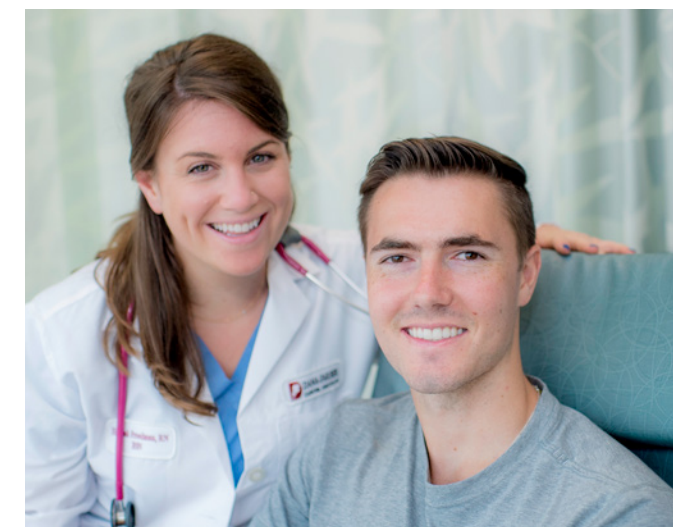
Dana-Farber patient **Colleen** and two of her daughters at the WEEI/NESN Jimmy Fund Radio-Telethon.



Participants at the Jimmy Fund Scooper Bowl®, the largest all-you-can-eat ice cream festival in the country.



Golfers playing in one of our 160 Jimmy Fund Golf tournaments.



▲ **Hannah Freedman, RN, BSN**, and Dana-Farber patient **Casey**. The Jimmy Fund helps fuel the wide range of services we offer to patients and their families, including financial assistance, support groups, and integrative therapies.

◀ Walkers at the Boston Marathon® Jimmy Fund Walk. The event has raised more than \$135 million for Dana-Farber since 1989.

# 89¢

of every dollar raised for  
Dana-Farber and the Jimmy Fund  
directly supports our lifesaving work



## Who was “Jimmy”?

In 1948, on a broadcast of Ralph Edwards’ national radio program “Truth or Consequences,” millions heard 12-year-old cancer patient **Einar Gustafson**—dubbed “Jimmy”—visit with the Boston Braves baseball team as they stood by his hospital bed. The show ended with a plea for listeners to send contributions to aid cancer research and help buy a TV so Jimmy could watch the Braves play ball from his hospital bed. Not only did Jimmy get his television, but more than **\$200,000** was collected and the Jimmy Fund was born.





# More than Courage

**Courage alone will not conquer cancer.** Success lies at the intersection of courage, experience, teamwork, innovation, compassion, and generosity. And it takes the brightest scientific minds, the best caregivers, and a generous community that is passionate about ending this disease.

The future holds great promise. Together, we will reach a brighter tomorrow: a world without cancer.

**It takes more than courage to beat cancer®**



— SUPPORTED BY —



Dana-Farber's progress in understanding and treating cancer is made possible only with your support.

To learn more about contributing to Dana-Farber and the Jimmy Fund, please contact:

**Rebecca Shortle**

**617-632-4215**

**[Rebecca\\_Shortle@dfci.harvard.edu](mailto:Rebecca_Shortle@dfci.harvard.edu)**

10 Brookline Place West, Brookline, MA 02445-7226

[dana-farber.org](http://dana-farber.org) | [jimmyfund.org](http://jimmyfund.org)