

TRANSFORMING CANCER CARE

Campaign for



**Stanford
Medicine**

+ you **=**

= compassion for patients and families

Lauren Kutzscher was diagnosed when she was 24 with a stage 4 Ewing's sarcoma in the bones of her thigh that had spread to her lungs. Pictured here with her brother Michael during her treatment, she says a key reason she and her family chose Stanford was that we understood that "healing isn't just taking medicines, it's having your family and friends around you and being happy and comfortable."

"You have cancer." Next year, 1.6 million Americans will hear those words, and begin the fight of their lives. They will battle an incredibly complex disease, face lengthy treatments across multiple specialties, and navigate a system of care that can seem uncoordinated, confusing, and focused on everything but them.

= transforming cancer care

Lauren was determined to “get better so I could become a doctor and give back in some way.” After a year of treatment, she finished her master’s degree in global health at UCSF and is now a medical student at UC Davis. Shown here in front of Stanford Hospital last year, she is also on the front cover rock climbing with her brother Michael, and on the back cover during the white coat ceremony that marked the beginning of her first year in medical school.

We can do better. *Transforming Cancer Care* is a comprehensive and unprecedented effort to put the world’s best cancer science to work for patients and deliver a new, transformative model of care. Armed with the power of Stanford’s biomedical innovation, the compassion of our caregivers, and the support of visionary philanthropic partners like you, we’ll turn deadly diagnoses into conditions that can be treated, managed, transcended—or maybe, prevented altogether.

THE STANFORD VISION

Leveraging disruptive innovation to solve a national problem



Beverly Mitchell, MD

Director, Stanford Cancer Institute
George E. Becker Professor of Medicine

“This initiative is crucial in changing the way we fight cancer. For all the progress made over the past 50 years, there is still so much to be done—in discovery, in delivery of care, in making sure the best treatments are accessible and affordable to cancer patients everywhere. With the innovations Stanford Medicine is known for, and the support of our philanthropic partners, we will create a better way forward in cancer care. And we’ll share that path with the world.”

= a new way forward

Anne Broderick wasn't surprised when she found out she had breast cancer. Her grandmother, aunt, mother, two sisters, and a brother had all had cancer. After a lumpectomy, Anne had partial breast radiation, which at the time was only available at Stanford and a few other centers. It took just five days instead of seven weeks. She also took advantage of Stanford's Healing Partners program, which paired her with a healing touch professional who helped her to maintain her emotional balance during and after treatment. Supportive services and compassionate caregivers made all the difference to Anne: "It was clear everyone cared about me, and the way I was treated definitely contributed to my healing."

Transforming Cancer Care offers bold new approaches for treatment, prediction, prevention, and long-term survival. Scalable and replicable around the world and across other diseases, this new model will be achieved through philanthropic investments of \$250 million across these four fronts: ►

We will create a new standard of cancer care and deliver a new treatment model that is comprehensive, multidisciplinary, coordinated, and built around the unique medical, social, and emotional needs of each patient and family. Rigorously built on evidence of which treatment choices will deliver the best outcomes, we expect this model to challenge existing practices in American health care. We also anticipate its adoption by centers around the world and across other diseases requiring complex, multidisciplinary care.

We will fight the toughest cancers by targeting those that have proven stubbornly resistant to treatment. We'll change the prognosis for patients with these cancers by assembling the world's most sought-after experts, fully funding their work, and creating the investigative community most capable of delivering new hope.

We will capture the power of Stanford science by fully leveraging Stanford's distinctive strengths in genomics, immunotherapy, bioinformatics, and stem cell medicine. We will work across scientific disciplines and beyond our walls, translating the latest breakthroughs at Stanford and elsewhere into unprecedented abilities to detect, treat, predict, and prevent cancer.

We will seize the innovations of our age by supporting the most creative ideas from the best scientific minds, fueling breakthroughs in cancer science. We will empower those scientists whose high potential and untested ideas hold the greatest promise, but are less likely to attract funding from traditional sources.

= creating a new standard of care

Tony Ricciardi says the first oncologist he saw after being diagnosed with stage 3 lung cancer “systematically removed all hope.” A friend advised him to go to the Stanford Cancer Institute, where he met Heather Wakelee, MD (whom he’s hugging at right). “She just handled it like I had a runny nose and said: ‘We cure people like you all the time.’” Four years after simultaneous chemo and radiation, Tony is still cancer free. “The echo of that first guy’s voice still rings in my ears,” he says. “I haven’t done any victory dances, but I did get a reprieve for however long it might last — and that’s given me so much.”



Bringing rigorous, evidence-based practices to cancer treatment, *Transforming Cancer Care* will change not just the prognosis and experience of cancer patients here at Stanford, but the way the American medical system treats cancer patients nationwide. Guided by a patient advisory council, our team is carefully auditing and redesigning how patients and their families make their journeys—from first appointment through long-term follow-up.

Cancer patients and their families are helping us design a system of personalized care, with care plans built on individual needs and goals—easy navigation; patients’ unique genetic, biological, and medical profiles; and the specific breakthroughs in immunotherapy, genomics, and stem cell medicine that are most likely to be effective for each patient. Only practices proven to deliver the best outcomes in the most cost-effective ways will become part of these plans.

As fully informed partners in all decision making, patients and their families will have the support of comprehensive educational tools and long-term survivorship programs. Long after treatment is finished, our physicians will monitor each patient’s genetic predictors to help prevent recurrences and drive down costs. And to make this new standard of care available to the Bay Area as quickly as possible, we’re building new community partnerships to reach patients closer to their homes.

THE STANFORD VISION

In the first five years of *Transforming Patient Care* we anticipate:

Creating a new standard of cancer care that’s effective, efficient, affordable, and transforms our nation’s current medical practices

Sharing our findings and inspiring partners across industry, government, academia, and philanthropy to join this movement

Building a global model for care delivery that meets the unique needs of every patient and family touched by cancer

Studying and adopting proofs of concept and new cost-effective tactics as they emerge in other disease areas

Seeding innovation awards to fund the most creative research ideas and fuel the engine of discovery at Stanford



= fighting the toughest cancers

Gwen McCane was diagnosed with pancreatic cancer in 2010, and after it was beaten back with chemotherapy and radiation, it showed up in her liver. At first, she couldn't find anyone to treat her. "They all said, 'It's inoperable, it's incurable, nothing we can do.'" But her brother convinced her to "let Stanford have the last word on that." Now she's getting microwave ablation, a minimally invasive treatment that kills tumors with heat. And she's back to holding self-esteem workshops for at-risk teens and being a sparkling companion to Carl, her husband of more than 50 years.

Turning deadly diagnoses into manageable conditions

begins in the laboratory. And in this, Stanford Medicine has an advantage: an enterprise of basic research and biomedical innovation that is second to none. Bringing together world-renowned experts in genomics, imaging, immunology, bioinformatics, regenerative medicine, and other disciplines, we'll assemble and fully empower dream teams of scientists who are capable of unraveling the mysteries of even the most recalcitrant cancers.

With each new discovery, we'll offer new hope to patients fighting cancers that have proven most resistant to cure. *Transforming Cancer Care* will also create "impact funds" that target melanoma, pancreatic, thoracic, skin, kidney, bladder, prostate, stomach, colon, and women's cancers.

THE STANFORD VISION

Revealing cancer to the immune system

Stanford stem cell scientists have developed a promising cancer drug by identifying a chemical signal that hides cancer cells from the immune system. CD47 — dubbed "don't eat me" by the team — tricks the immune system into thinking cancer cells are normal so it won't attack them. An antibody developed by the team silences CD47 so the body can recognize and defend itself against more than 20 types of cancer. This work, rejected as too speculative by one public funding source, is moving into clinical trials this year. That's a scant seven years after the team's initial discovery, as opposed to the typical drug development time frame of 20 years or more.



= capturing the power of Stanford science

Marsha Badagliacca never smoked, but her parents did, and at age 61, she ended up with cancer in both lungs. For five years, one new chemotherapy drug after another kept her going. "I joked that if they kept inventing things for me to take," she said, "I would stay alive to take them." Yet the tumors always came back. . . until she was treated at Stanford with CyberKnife, a Stanford-developed technology that irradiates tumors more precisely, minimizing damage to surrounding tissues and reducing side effects. In a recent letter she wrote: "It's hard to believe that five years have passed since my CyberKnife treatment and a whole decade since my diagnosis! A good milestone to meet!"

Understanding cancers at their basic biological level is the beginning. But transforming the lives of patients and their families relies on translation—those clinical studies that turn new knowledge into better treatments and more effective prediction and prevention. Stanford Medicine also exhibits great strengths at this crucial point in the spectrum.

A robust community of scientists, anchored by the Jill and John Freidenrich Center for Translational Research at Stanford, is working on clinical investigations across dozens of cancer studies. *Transforming Cancer Care* will increase the number and scale of these studies in areas such as bioinformatics and big data, genomics and precision medicine, and immunotherapy.

The complex and constantly changing interactions among biology, genetics, and environment that cause cancer are another key target for *Transforming Cancer Care*. Stanford's recently expanded Cancer Population Sciences program will combine our renowned strengths in biology and genetics with new expertise in environmental factors to build a comprehensive risk assessment program that will enable us to predict and prevent cancer like never before.

THE STANFORD VISION

Translational initiatives currently in clinical trials

Antibody CD47 (*see previous page*) enables tumor cell ingestion by macrophages; holds promise for solid tumors, brain tumors, and acute leukemia

Antibody CD137 activates the body's natural killer cells to attack cancer cells; holds promise for lymphoma, breast, and colorectal cancers

Stem Cell Transplantation and novel cellular therapeutics hold promise for multiple types of cancer

Hedgehog Pathway Inhibition promotes tumor regression; holds promise for skin, prostate, and gastrointestinal cancers

CyberKnife minimizes the tissue damage and side effects of radiation therapy; holds promise for breast, lung, and other cancers

Immunotherapeutics incites the immune system to kill tumors; holds promise for many cancer types

Genomic Medicine provides highly personalized treatments based on genetic sequencing; holds promise for pediatric sarcoma and other cancers



= seizing the innovations of our age

Chris Bowers, a cancer survivor who was treated at Stanford and is now a member of our patient advisory council, will never forget this poignant moment: "I was having a hard time, and my son Matthew couldn't visit... kids weren't allowed in the hospital during the H1N1 epidemic. So my wife, Anitra, brought him to the garden, and even though I wasn't supposed to leave, the staff unhooked me and took me outside. When he saw me, Matthew ran into my arms, gave me a big kiss, and said, 'I love you.' The staff knew how healing it would be for me to see him, so they made it happen."

Transforming Cancer Care will fund innovative high-risk, high-reward research ideas that will capture the possibilities of our age and ensure scientific progress doesn't slip as federal funding constricts. We are on the verge of a quantum leap forward in cancer science and care, but we must make the right investments, right now, to create a healthy future for our children and grandchildren. **Please join us.**

THE STANFORD VISION

How will we know when we've succeeded?

When our patients and their families say we have taken responsibility for the complexity of their care

When multidisciplinary care coordinators guide every patient and every family through every step of their cancer journey

When more patients — especially those with the toughest cancers — have realistic hopes for good outcomes

When no game-changing cancer research idea at Stanford goes unexplored due to lack of funding

When diagnosis and treatment are overshadowed by prediction and prevention

When our new model is replicated across other disease areas and around the world



We are all part of the equation.



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