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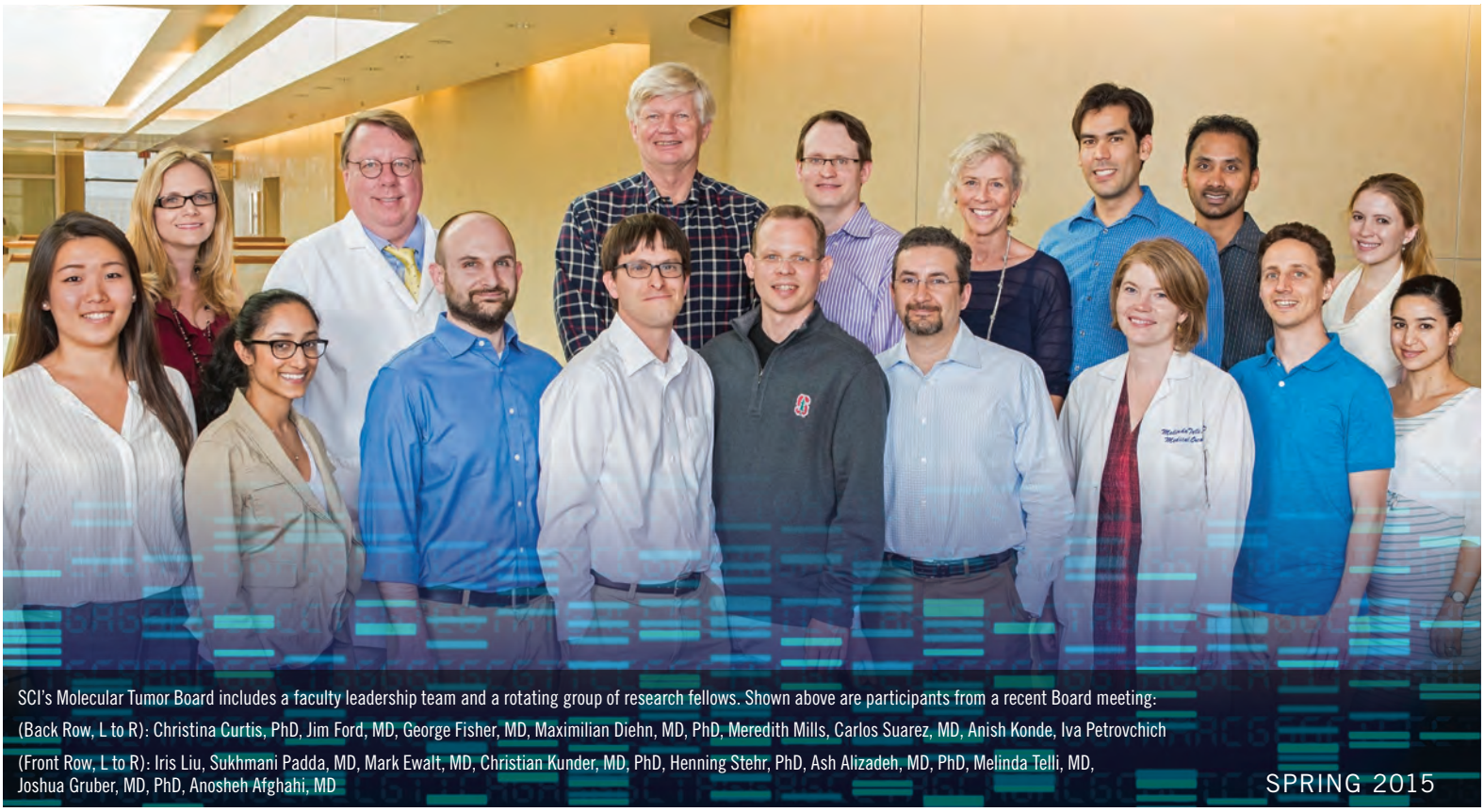
Stanford Cancer Institute
Stanford MEDICINE

*The Stanford Cancer Institute is a National Cancer Institute-designated Cancer Center*

# Stanford Cancer Institute **News**

A PUBLICATION FOR PATIENTS AND FRIENDS OF THE STANFORD CANCER INSTITUTE



SCI's Molecular Tumor Board includes a faculty leadership team and a rotating group of research fellows. Shown above are participants from a recent Board meeting:
(Back Row, L to R): Christina Curtis, PhD, Jim Ford, MD, George Fisher, MD, Maximilian Diehn, MD, PhD, Meredith Mills, Carlos Suarez, MD, Anish Konde, Iva Petrovchich
(Front Row, L to R): Iris Liu, Sukhmani Padda, MD, Mark Ewalt, MD, Christian Kunder, MD, PhD, Henning Stehr, PhD, Ash Alizadeh, MD, PhD, Melinda Telli, MD, Joshua Gruber, MD, PhD, Anosheh Afghahi, MD

Photo by Steve Fisch

SPRING 2015

## New SCI Program Uses Genetics to Target Cancer

# Decoding Cancer

The Stanford Cancer Institute has launched its Cancer Genetics Program to apply the power of genomic analysis to the understanding and treatment of cancer. The multifaceted program integrates leading edge gene sequencing technology—including techniques pioneered at Stanford—with innovative treatment strategies, genetic counseling services and an ambitious research effort to increase treatment options and improve outcomes for cancer patients.

The program's immediate focus is to identify novel drug therapies for cancer patients with advanced disease. The longer-term goal is to systematically catalogue data from every patient in order to improve the understanding of the genetic characteristics of cancer, and continually refine our ability to treat it.

"We have established an integrated genetically-driven process for cancer patients who haven't responded well to standard treatment and need to explore alternative strategies," said SCI member **James Ford, MD**, the Cancer Genetics Program director.

### MUTATION, MUTATION, MUTATION

Cancer is a disease of genetic malfunction. For cells to divide they must copy the approximately 25,000 genes that make up human DNA and mistakes, commonly referred to as "mutations," can occur in the process. (Environmental influences such as

See ***DECODING CANCER***, page 4

## Message from the Director

# Following Many Paths to Beat Cancer

Stanford is well recognized for its cancer research and care, and this issue of *SCI News* highlights some of the parallel tracks we pursue to increase the understanding and treatment of cancer.

The SCI Cancer Genomics Program uses our rapidly increasing ability to decipher the genetic codes of cancer in order to find the best available drugs for patients with advanced disease. The program's Molecular Tumor Board embodies our commitment to leading-edge technology, multidisciplinary collaborations and delivering new therapies to today's cancer patients. At the same time, program members are carefully cataloguing vast amounts of data to enhance our ability to treat more patients more effectively in the future.

The Cancer Genomics Program also exemplifies SCI's mandate to train and mentor the next generation of cancer leaders—a generation uniquely exposed to the integration of cancer biology and quantitative analysis. We are proud to introduce **Ginna Laport, MD**, SCI's Associate Director of Education, along with examples of our internal training and external education initiatives.

Nearly all of the stories in this issue mention clinical trials. This is not a coincidence. There can be no new drugs, devices or treatment regimens for tomorrow's patients unless today's cancer patients participate in clinical trials. Patients who take part in trials get the experimental treatment *in addition* to the currently approved standard of care; meaning they receive supplementary care that may help, and are not denied known beneficial treatments. We are happy to highlight a few of the outreach and education efforts of our Cancer Clinical Trials Office.

We also meet new SCI member S**hivaani Kummar, MD, FACP**, who is leading our Phase I Clinical Research Program to develop new cancer-targeting drugs. Shivaani's talents are well suited to her role, which is—like that of the SCI itself—to support, coordinate and catalyze the work of the many talented faculty members with interests in advancing cancer therapies. Her presence has already brought greater national prominence to our clinical research.

Lastly, but certainly not of least interest, this issue showcases our commitment to community education and engagement. Whether through our involvement with acclaimed authors and thought leaders like Atul Guwande, MD, MPH, and Siddhartha Mukherjee, MD, PhD, or through public events like the upcoming Health Matters, SCI continues to inspire and inform people about our shared experience confronting, coping with and living beyond cancer. ■

**Beverly S. Mitchell, MD**
*Director*

## The Stanford Cancer Institute

The Stanford Cancer Institute provides support and coordination for the range of cancer-related activities occurring at Stanford University, Stanford Hospital and Clinics, and the Lucille Packard Children's Hospital. Our 300-plus faculty members belong to more than 30 academic departments, and represent the array of disciplines involved with comprehensive cancer research and treatment.

The Institute is a National Cancer Institute-designated Cancer Center, with a scientific agenda combining laboratory research, clinical study and population science. The Institute also engages in patient care, community education, clinical trials, as well as support and training for the next generation of cancer physicians and researchers.

Simply put, all of our members and resources are focused on one goal: to reduce the occurrence and impact of cancer.

*Stanford Cancer Institute News* is a quarterly update for members, supporters and friends. On behalf of our members and staff, we thank you for your ongoing support and welcome your feedback and inquiries.

**Beverly S. Mitchell, MD**
*Director*

**David Rubenson**
*Associate Director of Administration and Strategic Planning*

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## In Profile

# Shivaani Kummar, MD, FACP

Professor of Medicine, **Shivaani Kummar, MD, FACP**, arrived at Stanford just two months ago; as evidenced by the still-unpacked boxes tucked in her office corner.

Decorating had to wait while Kummar dove into her job helping researchers design and execute early phase clinical trials of new cancer drugs. Kummar directs SCI's Phase I Clinical Research Program, which oversees safety testing and dose tolerance for candidate drugs.

"My main interest is to help identify novel agents that target cancer, and bring those agents to the clinic," said Kummar.

### First Do No Harm

Clinical trials of drugs, devices and procedures are divided into four "phases," or stages of research (see sidebar). Historically, Phase I trials test a small amount of the experimental drug in patients to determine if it can be safely tolerated.

Shivaani Kummar, MD, FACP

Photo by Lindsey Baker

However, with the advent of the so-called 'targeted drugs' and the increasing ways to select patients based on identifying genetic abnormalities in their tumor, these early trials are changing.

"Phase I trials are evolving into 'proof of mechanism' trials, where we use molecular profiles to determine which patients are best suited to respond to the trial drug," said Kummar. "In addition to looking for information about the safety profile of the agent, we are now also looking for hints of activity (against cancer)."

Improved molecular analysis and better trial designs shorten the time it takes to get new cancer drugs to market, an exciting prospect for researchers, physicians and patients. But patient safety and wellbeing remains paramount for Kummar, since the patients in her trials have advanced cancer. Testing and advancing new cancer treatments while ensuring patient safety is the overall goal of the program.

### Fit For Growth

Kummar sees Stanford as well positioned to build a leading Phase I trial program, siting the University's wealth of cancer-related research, its strength in biological data analysis, and its proximity to the biotech and pharmaceutical partners needed in the drug development process.

SCI Director Beverly Mitchell, MD, believes Kummar has the right skills for the role. "Shivaani brings tremendous experience, knowledge and passion to the complex process of early-stage drug development," she said. "We are very fortunate to have her leading our program."

Kummar earned her medical degree from Lady Hardinge Medical College in New Delhi, India. She did an internal medicine residency at Emory University, and a fellowship in medical oncology and hematology from the National Institutes of Health. She joined the Yale Cancer Center as an assistant professor in medical oncology, where she first got involved with early drug development. In 2004, Kummar moved to the National Cancer Institute (NCI) to build the Developmental Therapeutics Clinical Program. For the past few years she was the head of NCI's Early Clinical Trials Development before moving to Stanford.

"This is a very exciting time since Stanford has the vision and expertise to build a world class phase I program that can bring forward new effective treatments for cancer," said Kummar. ■

## Clinical Trials

Clinical trials are conducted in a series of steps, called phases, each designed to answer a separate research question.

- **Phase I:** Researchers test a new drug or treatment in a small group of people for the first time to evaluate its safety, determine a safe dosage range and identify side effects.
- **Phase II:** The drug or treatment is given to a larger group of people to see if it is effective and to further evaluate its safety and dosage range.
- **Phase III:** The drug or treatment is given to large groups of people to confirm its effectiveness, monitor side effects and compare it to commonly used treatments.
- **Phase IV:** Studies are done after the drug or treatment has been marketed to gather information on its effect in various populations and any side effects associated with long-term use.

Source: clinicaltrials.gov

## DECODING CANCER, continued from page 1

chemical and radiation exposures, dietary factors and harmful habits — particularly smoking — also cause cancer-related mutations.) Most of these replication errors are benign, and many are mended by cells' internal repair mechanisms. But some mutations—or the accumulation of mutations—cause cells to behave in abnormal ways that we call "cancer." This behavior typically involves unchecked replication, growth and expansion to the detriment of neighboring tissues.

Since the mutations are what make the cells abnormal, scientists try to use them as targets for anti-cancer drugs. Researchers search for (and also create) chemical compounds that selectively bind to specific gene mutation in order to disable or kill cells. Such "targeted therapies" offer the possibility to eliminate cancer cells using greater precision and causing fewer side effects than toxic treatments like radiation and chemotherapy.

Most drug treatments for cancer are essentially site-specific, meaning they are approved by the Food & Drug Administration (FDA) and used in practice to treat one type of cancer, defined primarily by its location in the body. However, advances in molecular analysis have enabled investigators to define cancers in a more accurate way: by their individual genetic profiles, including mutations.

Such analysis reveals that some tumors found in the same site (the breast, for example) have significantly different molecular properties and require distinct treatment strategies. It has also been shown that tumors in different locations sometimes share common mutations, and therefore may be susceptible to the same mutation-targeting drug. SCI's Cancer Genetic Program has developed a detailed genomic test to identify the best available drugs to treat each patient's tumor, regardless of its location.

"One goal is to identify a molecular alteration that allows for a targeted treatment that we might not otherwise have thought of for that particular patient," said Ford, an associate professor of oncology and genetics.

To date there are just a few cancer drugs that have been shown to be effective in multiple sites, but they suggest that the concept has merit; and when successful they can mean a valuable reprieve, or even rescue, for a patient who had run out of treatment options.

"We certainly have seen some positive outcomes for patients who were rendered eligible for targeted therapy clinical trials on the basis of their tumor genomic profile," said SCI member **Melinda Telli, MD**, an assistant professor of oncology and one of the program's breast cancer experts.

Genetic-based cancer treatment is a rapidly evolving area of medicine, and many more molecular-targeting drugs are being explored at research centers and developed by industry. (See Page 3 for information on SCI's drug testing efforts.) SCI's program provides a framework in which experts in genetics, oncology and cancer biology jointly examine the molecular profiles of hard-to-treat tumors. Based on the mutations identified, the team suggests treatment options, including clinical trials patients may qualify for, or an "off label" use of a cancer drug (e.g., treating a tumor in a site different than that for which the FDA has approved the drug).

Other cancer centers have genome-based programs, and a few private companies offer genetic profiling services for molecular cancer treatment. The Stanford team has incorporated the best elements of these approaches and added their own technological and process improvements.

"We are not unique in pursuing a genetic approach to difficult cancers, but the skill and thoughtful planning of our faculty along with our technical capabilities make us uniquely able to benefit patients now and in the future," said SCI director Beverly Mitchell, MD.

### 'STAMP'-ING OUT CANCER

Stanford has long been a leader in genomic sequencing and molecular data analysis, and its resident expertise and culture of innovation creates a fertile environment for progress. Cancer Genetics Program members, including professor of pathology and hematology, **James Zehnder, MD**, worked for over a year to refine Stanford's analytic tool, called STAMP (Solid Tumor Actionable Mutation Panel), which provides highly sensitive and accurate examination of approximately 200 different genes implicated in cancer.

"The amount of work we did to make sure that this assay is completely validated gives us confidence in its accuracy," said SCI member **Ash Alizadeh, MD, PhD**, an assistant professor of oncology with expertise in genetics and computational biology.

Using their own test gives program members many advantages, including reduced cost and increased convenience. Customization is also enhanced when the "end users" of the data build their own screening tools.


James Zehnder, MD

Photo courtesy of James Zehnder, MD

"Because this test was developed in-house, we have the flexibility to modify the testing to focus on areas most relevant to patient treatment decisions and clinical trial enrollment, and quickly respond to new discoveries," said SCI member Zehnder, a leader in applying next generation genetic sequencing to understanding and treatment of cancer and other immune related conditions.

Another Stanford advantage is that the results of patients' genomic testing can be accessed through Stanford Medicine's electronic medical records database, enhancing both ongoing patient monitoring and longitudinal research projects.

"The way we organize the genetic data allows the system to be dynamic," said Alizadeh. "Patient data can be easily accessed as we learn new information about drug-mutation interactions."

## TOOLS TO SERVE PATIENTS

The heart of the Cancer Genetics Program is the Molecular Tumor Board, where all the different specialists come together to examine the precise genomic data as well as the subtle nuances of each patient's difficult cancer case.

Every two weeks the board meets to consider a docket of new patient cases, introduced and summarized by young oncology and pathology fellows. The group crowds around a conference table, listening to case details and reviewing data displayed on large wall-mounted screens. More fellows and clinical residents fill chairs around the periphery.

The proceedings are lively and collegial, exuding the positive energy of a shared challenge as the members puzzle out each complex case. The data, ideas and jargon fly as multiple members contribute comments peppered with shorthand references to procedures, studies, drugs and genes, genes, genes: "R1461," "DNMT3A," "BRAF," "KMT2C."

"Every patient we see is different, so searching for the best outcome for each requires examining massive amounts of data," said program director Ford. "Christina Curtis and others are important to the team, because they are particularly skilled at taking huge data sets and asking individual patient questions as well as broad 'population-type' questions."

SCI member **Christina Curtis, PhD**, is an associate professor of oncology and genetics, recently recruited from the University of Southern California for her expertise in molecular and computational biology, and her highly collaborative approach to cancer research.

"Our application of state-of-the-art genomic technologies and computational approaches enable the dynamic monitoring of treatment response on a patient-by-patient level," said Curtis. "We also aim to integrate this clinical data with population-level data in order to refine our understanding of disease biology and mechanisms of resistance in order to improve the diagnosis and treatment of future cancer patients."

But while the technical lingo may be impenetrable to a layperson, there are constant reminders that the board is discussing real people who is clinging to hope. Age, gender, family history and previous treatments are all part of the conversation, as is the potential impact of rigorous treatment and side effects on current health status and quality of life. The patients are either being treated by the people in the room, or have been referred from their colleagues, so the board members have both a professional and institutional interest in monitoring their progress.

"We also track and analyze the outcomes of this approach to treating cancer to better understand how this type of analysis fits into the clinical setting, " said Meredith Mills, a project manager for the Molecular Tumor Board.

According to Mills, the program also records how many patients have mutations that are treatable with targeted therapy, how often patients receive a recommended drug and what are some of the roadblocks to getting patients targeted treatments. All of these factors provide valuable data to understand how genetically targeted therapies can benefit many more patients in the future.

Use of genetic sequencing can also uncover cancer-associated mutations that are inherited, meaning that the patient's family members and offspring have increased cancer risk. For this reason, the program and tumor board include genetic counselors who educate about familial cancer, provide clear options for medical or surgical interventions, and enhance the quality of life for high-risk cancer families.

"It's a team effort involving faculty, staff and fellows from radiation oncology, medical oncology, pathology, informatics and the clinical laboratory," said Zehnder. "This is a great example of quickly translating research into patient care."

The resources to administer the Cancer Genomics Program come from the Stanford Cancer Initiative, a ten-year effort to radically transform the cancer patient experience. The Initiative has four primary mission areas:

- Create a new standard of cancer care
- Target the toughest cancers
- Capture the power of Stanford science
- Seize the innovations of our age

While the Cancer Genomics Program uniquely combines all of these priority areas, it is just one of the exciting elements of the multi-faceted Initiative that is improving the quality of life and treatment outcomes of cancer patients. (See Page 11 for an update on the Stanford Cancer Initiative.) ■

## In Conversation

# Siddhartha Mukherjee, MD, PhD

Siddhartha Mukherjee, MD, PhD, is an assistant professor of oncology at Columbia University in New York, and a staff physician at Columbia University Medical Center. In 2010 he burst into the national conversation about cancer, medicine and literature with the publication of his first book, *The Emperor of All Maladies: A Biography of Cancer*, which won the Pulitzer Prize for General Nonfiction. PBS television has recently used the book and its title as the basis for a six-hour documentary presented by celebrated filmmaker Ken Burns. (For more information, visit: *cancerfilms.org*)


Siddhartha Mukherjee, MD, PhD

A standout student growing up in New Delhi, India, Mukherjee attended Stanford as a biology major and worked in the lab of Nobel Laureate Paul Berg, PhD, identifying genes that alter the behavior of cancer cells. He won a Rhodes Scholarship to Oxford University, earning a PhD in immunology. He received his medical degree from Harvard Medical School and there did postgraduate work in internal medicine, followed by an oncology fellowship at Massachusetts General Hospital.

In May 2014, Mukherjee delivered the keynote address at Stanford Medicine's Health Matters public outreach and education event. Like his novel, his standing-room-only talk provided a historical perspective on humankind's relationship with cancer, introduced new ideas about the nature of cancer and forecast how he sees cancer research and treatment evolving in the coming years.

SCI News sat down with Mukherjee during his visit, and what follows is an excerpt of the conversation, lightly edited and condensed.

### What motivated you to pursue medicine?

I became interested in natural biology while here at Stanford. I took my first biology class as an undergraduate and became fascinated by the natural world. Over time I began to understand that medicine is actually applied biology, in that there is a direct connection between understanding human physiology and translating that understanding to people who are ill.

The education here at Stanford is very profound in that way, in that it asks you to make the link between what you learn in the classroom and what you actually do in the world. That is a very important link.

> **"I believe that as soon as we declare victory over cancer, then that will be the beginning of our defeat."**
> — Siddhartha Mukherjee, MD, PhD

### Why cancer?

I started as a cell biologist working on immunology and virology, then become interested in viral cancers and ultimately human cancers. In a way, I sort of backed into medicine by becoming interested in human biology and virology research first, and then decided to pursue clinical medicine as well.

### What types of cancer do you study and treat?

I treat many cancers, but the one that I particularly focus on is a pre-leukemia called myelodysplastic syndrome, or MDS, which is an insidious disease with rising incidence. We think MDS has an intimate relationship with blood stem cells, and therefore my lab studies normal blood stem cells as well as MDS cells. Specifically, we explore the normal physiology of blood stem cells and how it changes when they become cancer cells. We are looking at the role genes play in the ultimate decision of a cell to grow with abnormal signals, and then continue to grow in the presence of signals that tell them not to grow.

Another area of study is the immune system, where we are experiencing a new resurgence of the field. We are now recognizing that it is not just the cancer cell that is the problem, it is the cancer cell and its interactions with its environment—in this case the immune system—and that requires a new kind of thinking. Yes, looking at genes in the cancer cell will help, looking at entire cancer genomes will help, but it also appears necessary to look at the whole environment in which a cancer grows.

### How do you split time between your lab and your cancer patients?

I have the privilege of being able to work in the laboratory on the same questions that I treat in patients, so my laboratory life and my clinical life are deeply integrated. For example, when we run a clinical trial, all the data will come back into the laboratory and generate a new series of thoughts, hypotheses and experiments, which will then be translated back into patients through new clinical trials. This integration is important, because we try to ensure that patients receiving a particular intervention are ideally suited to that intervention.

### How important is patient participation in cancer clinical trials?

It's critical. Only 10 to 20 percent of adult cancer patients participate in clinical trials, while 80 to 90 of pediatric cancer patients do. So, approximately 80 percent of adult are not contributing to the next iteration of cancer knowledge.

In the past my appeal to patients was to say, "please help us understand the future of cancer." Now, given the advances in technology, I say, "please help us understand the present, including how to treat you."

**Speaking of technological advances, what is your take on the so-called "Big Data" movement?**

My concern with "Big Data" is that the term can lose meaning if we become seduced by the idea without it being grounded in reality. Lots of data sitting in space is lots of data without meaning. To me it is the connectivity and accessibility of the data that makes the difference.

I like to ask myself, "why hasn't small data worked?" What is it about big that is better than small? And if you can answer that question in a concrete way then you have solved part of the problem, because you will have organized the data in a way that is relevant to the question you are asking.

**What about another trend in cancer research: multidisciplinary collaborations?**

I think that there is no option but to collaborate and integrate skills that lie across individual silos. But I want to stress that these collaborations should be driven by questions. Just like you can be seduced by "big data" you can also be seduced by "big collaborations." People will say, "wouldn't it be nice if everyone sat down at the same table and started collaborating?" But science and medicine don't happen like that. Medicine is driven by the real needs of patients and the real questions that arise from those needs.

**It seems the more we learn about cancer, the more complicated it becomes.**

Just because something turns out to be more complex that we initially thought does not mean that we cannot simplify it. The complexity allows us to evaluate what the reality is, and our interventions depend on us teasing out which part of the complexity are relevant and which parts are not. Complexity is just a description of the physiology of cancer, and interventions can follow from that. We should not be daunted by the fact that cancer is complex, and scientists aren't, because the complexity makes our understanding deeper and more real.

In fact, there is an argument that cancer's complexity may be its weakness. The fact that cancer cells have to create such interconnected networks of behavior just to sustain growth may make cancer more vulnerable to disruptions in those networks. Just because a chain is longer does not necessarily make it stronger, and cancer's chain may have profoundly weak links. We just have to continue to work to find what they are and how to exploit them.

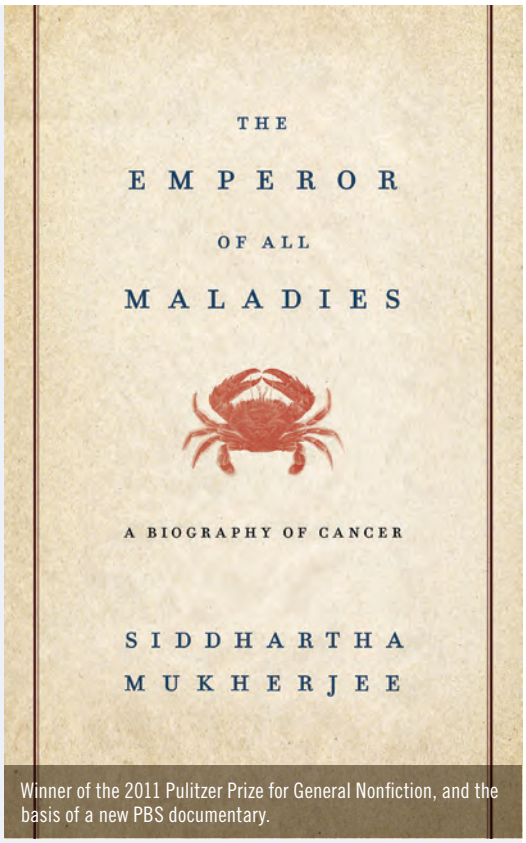
**You've written cancer's biography; will its obituary ever be written?**

Cancer will always be in our midst for one simple scientific reason: the very genes that allow us to grow and adapt, when mutated, lead to cancer. And these are not incidental genes—we are not talking about the periphery of human physiology—we are talking about the genes that function as the centerpieces of normal cellular growth and development.

So, I think cancer will always be with us, but we will continue to evolve our interaction with the different forms of cancer in the future. We will learn to prevent some forms, learn to treat some and learn to cure some. We will turn some cancers into chronic conditions. And this sort of cat and mouse game with cancer will go on for a long time. This will be a reiterative contest that we will have to play over and over again. And I believe that as soon as we declare victory over cancer, then that will be the beginning of our defeat.

**Are you optimistic about the potential to improve our overall approach to cancer?**

I am extremely optimistic, but I am also sober about the realities of cancer. Just because certain cancers remain refractory against treatment today only means that we should double our efforts against them. There really is no other option but to continue to research cancer as aggressively and thoroughly as we possibly can.



Winner of the 2011 Pulitzer Prize for General Nonfiction, and the basis of a new PBS documentary.

**What can people do to reduce their cancer risk?**

This is a bit of an unexplored universe, and while there is no "silver bullet" for cancer prevention, there are a few basic things people can do: quit smoking, eat a healthy diet and exercise.

The truth is that we have really only been effectively working on the nature of cancer for 20 or 30 years—a short blip in time. Before that it was all darkness.

**Have you always been a writer?**

I have always been a reader.

**Do you plan to write any more books?**

Yes, I am in the middle of another book. I still have some aspects of it to figure out, but I can tell you that there is a big chunk of Stanford in it. ■

## Preparing the Next Generation of Cancer Leaders

# SCI Provides Comprehensive Training and Education

An important part of the Stanford Cancer Institute's mission is to provide educational programs for medical professionals, scientists, as well as cancer patients. Professor of medicine **Ginna Laport, MD**, serves as SCI's Associate Director of Education, helping design and deliver a variety of initiatives for patients and families, medical students, post-doctoral trainees and faculty.


Ginna Laport, MD

"SCI and the Stanford Clinical Cancer Center are committed to providing leading edge training and educational programs benefitting both the professional and patient communities," said Laport.

One priority is to disseminate the scientific advances among SCI members (Stanford faculty conducting cancer research) as well as the students and trainees enrolled in Stanford programs. For the last six years, Laport has been Course Co-Director of the annual SCI Comprehensive Cancer Research Training Program. This immersive four-day course features speakers—primarily Stanford faculty—presenting the latest research developments from basic, translational and clinical areas of Stanford's many academic departments involved in cancer research and care. It has been a highly successful course with approximately 100 graduates per year drawn from Stanford's prestigious schools of Medicine and Engineering, as well as students from other universities.

With the goal of educating future cancer research leaders, SCI sponsored its first annual young investigator symposium on February 19 (see story below).

SCI also devotes resources to ensure that patients have convenient access to the latest information regarding cancer types, sub-types and the corresponding available treatments. The SCI website (cancer.stanford.edu) provides comprehensive information about cancer diagnosis and treatment, including guidance on nutrition, alternative therapies, pain management and more. It also includes access to a searchable database of open cancer clinical trials at Sanford, and a public calendar of cancer-related screenings, lectures and educational seminars featuring Stanford faculty.

A redesigned SCI website is under development and scheduled to launch later in 2015. ■

## SCI Scientific Symposium

# Tomorrow's Cancer Researchers: Accomplishments of SCI Trainees

On February 19 SCI organized a half-day symposium showcasing the research accomplishments graduate students, post doctoral investigators and clinical fellows engaged in cancer-related activities.

Special guest speaker José Baselga, MD, PhD, Physician-in-Chief and Chief Medical Officer at Memorial Sloan Kettering Cancer Center gave a highly informative talk on the challenges and opportunities facing young people who wish to pursue a career in biomedical research.

Thirty-six participants submitted examples of their research projects formatted on posters, which were hung in a conference hall to create an interactive discussion forum (common practice at scientific conferences). The posters represented a wide range of research topics from areas of basic laboratory science, clinical research, translational medicine and population science.

A panel of senior scientists chose the top six projects, and those young investigators we invited to give oral presentations. They were: Paola Betancur, PhD; Katharine Brock, MD; Yaron Carmi, PhD; Jacqueline S. Garcia, MD; Courtney Hodges, PhD; and Hideki Nakasone, MD, PhD.

The meeting provided an environment for trainees to share their research interests and facilitate networking opportunities among their peers.


Keynote speaker José Baselga, MD, PhD

Photo courtesy of Jose Baselga, MD, PhD

Due to the popularity of the symposium, the SCI leadership plans to offer more of these educational sessions in the future. ■

## Atul Gawande on Medicine and Morality

# Noted Author and Surgeon Headlines Tseng Lecture

On March 2 the Stanford Cancer Institute held its eighth annual Cynthia and Alexander Tseng, Jr., MD, Memorial Lecture. The yearly cancer-focused presentation has featured many prestigious speakers—including Nobel Laureates—but none has drawn a larger audience than this year's event.

Acclaimed surgeon and author Atul Gawande, MD, MPH, of Brigham and Women's Hospital, delivered a keynote address on modern medicine and mortality—the topic of his latest best-selling book *Being Mortal*. Dean Lloyd Minor, MD, then moderated a panel discussion of a wide range of problems in the nation's health care system. Four hundred people were packed into the auditorium, and two overflow rooms with video feeds were needed to accommodate the crowd.

"The vision and generosity of the Tseng and Tolles families enables us to bring these outstanding conversations to Stanford," said SCI Director Beverly Mitchell, MD. "We are grateful for the continued support of the families and the Stanford community."

In a personal and moving talk, Gawande discussed how decades of modern medical advances have changed our attitudes about dying and death. As vastly improved therapies reduce the number of diseases and injuries that pose life-threatening risks, people expect to live longer lives. Wellbeing has become synonymous with lengthy and more robust life, supported at every stage by effective medical interventions, including a growing market of "lifestyle" rather than life-saving treatments.

Gawande argued that one consequence of these advances is that we have "medicalized our mortality" to the point where even terminally ill patients and their families look to their doctors for life-saving answers.

"Well, I didn't (have answers)," Gawande said. " I was offering medical 'solutions,' delivering them and then seeing that they were not solutions at all."

Gawande described medicine's typical approach as trading time and quality of life in the short term for longer life in the future, but the trade-off isn't always beneficial. For example, aggressive cancer treatment can be debilitating and painful, and it also often fails to prolong life, succeeding only in making patients miserable in their final days.

He then contrasted the goal of palliative care, which is to create the best possible day for patients today, regardless of what it means for the future. Research shows that palliative care improves quality of life, including people's sense of control and empowerment over their lives. While these positive attitudes may be expected, palliative care practices also reduce medical procedures (as well as costs) and have been shown to actually increase life span—by 25 percent in one study of advanced lung cancer patients.

Atul Guwande, MD, MPH at the eighth annual Cynthia and Alexander Tseng, Jr., MD, Memorial Lecture

Photo by Norbert von der Groeben

**"If palliative doctors were a drug, the FDA would approve them,"** said Gawande.

Gawande stressed the need for better communication with patients and families facing end-of-life decisions, particularly that doctors listen to patients' goals and desires. When given choices, most patients forego complex hospital procedures in favor of technology and treatments that help them to spend more—and more comfortable—time at home.

Following his talk, Gawande was joined onstage by Dean Minor, Laura Carstensen, Director of the Stanford Center on Longevity, Arnold Milstein, Director of the Stanford Clinical Excellence Research Center, Robert M. Pearl, Executive Director and CEO of the Permanente Medical Group, and Charles Munger, vice-president of Berkshire Hathaway Corporation and chair of the Good Samaritan Hospital in Los Angeles.

The group lent their expertise to a wide range of concerns about healthcare in the United States, including costs, incentives, real-life concerns of patients and doctors, and several prescriptions for systemic and societal reforms. In addition to his decades of experience in health care, Munger also added colorful anecdotes and sardonic wit to the dialog.

As the event concluded, it was Gawande who best summed up the discussion. "We should be able to deploy modern medicine to best meet the goals and desires of patients," he said.

The 2015 Cynthia and Alexander Tseng, Jr., MD, Memorial Lecture was co-sponsored by the Stanford Center on Longevity. ■

## Cancer Clinical Trials Office Adds Outreach Coordinator

# Welcoming More Minority Cancer Patients Into Trials

The Stanford Cancer Institute is taking steps to increase awareness of and participation in cancer clinical trials, especially among underserved communities. To aid this effort, experienced cancer advocate Adriana Morieko, MBA, was recently hired as Diversity and Inclusion Coordinator. Morieko will lead outreach and recruiting efforts to a variety of ethnic populations, particularly the Latino/Hispanic communities.


Adriana Morieko, MBA

Morieko brings both language and cultural fluency to the position, with two decades of experience in education, advocacy and applied research in Hispanic and immigrant communities. She now works with community health organizations to increase awareness of SCI's many ongoing cancer trials, and to encourage patient referrals from community physicians. She also assists with securing clinical trial participation from Spanish-speaking patients, developing Spanish language materials and more.

"Hispanics are a large local population with high incidence of cancer," Morieko said. "But I am adamant about including all cultures and ethnicities in cancer clinical trials at Stanford."

Cancer is the leading cause of death among Hispanics living in the United States, accounting for 21 percent of deaths overall and 15 percent of childhood deaths. Morieko's role helps extend Stanford's cancer care to more of our local community members, particularly in underserved populations. Also, increasing ethnic and genetic diversity in clinical trials has tangible research benefits by helping investigators understand the impact of genetic variation and environmental influences on cancer incidence and treatment.

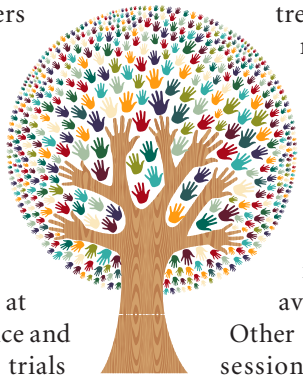
For the last five years, Morieko has been the Program Director for Latinas Contra Cancer, a non-profit organization that addresses the void in culturally and linguistically sensitive issues for Latino individuals and families coping with cancer. Her experience taught her what can be achieved by investing in the empowerment of community members, such as Latino cancer survivors, as well as collaborating with organizational partners to accomplish goals.

"We want to show people that they have the wonderful opportunity of receiving care today while contributing to the improved treatment of other cancer patients," Morieko said. "The positive results of today's clinical trials are the future of cancer care." ■

## Cancer Patient Engagement

# SCI Holds 4th Annual Clinical Trials Awareness Week

SCI held its fourth annual Clinical Trials Awareness Week from April 20-24 at the Stanford Clinical Cancer Center, located at 875 Blake Wilbur Drive. The yearly weeklong event is provided to educate patients, community members and staff about cancer clinical trials.



SCI has more than 250 ongoing cancer clinical trials focused on new cancer therapies, diagnostics and prevention strategies, as well as research studies looking at cancer survivorship, surveillance and patients' quality of life. These trials are another demonstration that Stanford is at the forefront of cancer medicine research, with numerous discoveries and clinical applications, including methods to detect brain tumors and other malignancies, treatments to improve survival rates in Hodgkin's disease and vaccine development to treat different types of cancer.

This year's event featured daily research poster exhibits as well as an information desk with staff available to answer questions. Other activities included interactive sessions with cancer researchers, informational talks and an educational game with prizes.

New for this year were interactive poster and information sessions with Spanish language interpretation, as well as the automated clinical trials kiosk, a touch-screen computer interface that provides basic cancer clinical trial educational information 24 hours a day, seven days a week in English, Spanish, Chinese and Russian.

For more information, please visit *cancer.stanford.edu/trials/patients* or call 650.498.7061. ■

Update

# Transforming the Cancer Patient Experience through Science and Compassion

Eighteen months ago the Stanford Cancer Institute and Stanford Healthcare partnered to launch the **Stanford Cancer Initiative**, an ambitious five-year plan to literally transform the experience of receiving cancer care at Stanford. The Initiative includes a wide array of interconnected reforms, new programs and patient-centered practices, all designed to improve the individualization, delivery and effectiveness of cancer treatment.

*SCI News* readers can look forward to regular updates as the multifaceted Stanford Cancer Initiative progresses, evolves and delivers tangible benefits in the lives of cancer patients and their families.

**Engaging patient and family voices.** Any serious overhaul of cancer care must begin with the recipients of that care: the patients. Therefore, we are actively engaging patients and family-members through the Cancer Center Patient and Family Advisory Committee in every step of the process. We are also working with Mr. Chris Bowers and Ms. Beverly Anderson (respectively, a cancer survivor and a cancer patient's family member) to help design the transformation and provide critical feedback on our efforts.

In addition to offering ongoing guidance, Bev and Chris also helped develop our "Cancer Story Line." Loosely modeled around National Public Radio's "Story Corps," our project invites patients and family members to call in and record their cancer care experiences—whether positive or negative. The stories are all transcribed and evaluated for validation of our current improvement efforts, or the creation of new ones.

**Preparing for the transformation: "Leaders as Teachers."** Changes of this scale and scope cannot be driven by just a few people, so we designed and implemented a six-month program called "Leaders as Teachers" in which the 45 leaders in the clinical cancer center participated in a series of workshops designed to instill the proven principles of the Stanford Operating System into all those responsible for overseeing the delivery of comprehensive and compassionate cancer care. We believe this type of foundational work is critical to ensuring long-term success of the transformation initiative. Below is the commitment that leaders sign when they agree to begin the journey of transforming the cancer patient experience.


**Developing an evaluation framework.** Given the ambition, complexity and importance of the transformation initiative, we have recruited and empowered a team to evaluate its progress and provide critical feedback. Stephen Asch, MD, MPH, a prominent health services researcher in the Department of Medicine, leads the overall evaluation. Asch is aided by Marcelle Winget, PhD, a clinical associate professor and Director of the Evaluation Sciences Unit, who heads the quantitative assessment. Winget's counterpart in directing qualitative assessment is Melissa Valentine, PhD, a member of the Management and Science Department and an expert in studying change from an organizational design perspective.

Together these and other experts will judge the progress and impact of the transformation initiative, and provide recommendations to improve processes and performance—all with a focus on improving the experience of cancer patients and their families.

**Your role in the transformation.** The programs mentioned above, and all of the transformative elements of the Stanford Cancer Initiative are made possible by the philanthropic investments of Stanford community members. Your generous support of SCI will make you a partner with our dedicated physicians, researchers and administrators as we work together to improve the longevity and quality of life for all cancer patients.

SCI offers a range options for individuals and families to support meaningful progress in cancer research, care and prevention. For more information on where and how to give, please visit us at *cancer.stanford.edu/help/gift*, or call 650.725.2504. ■

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# Health Matters 2015 Takes Place on Campus May 16

Health Matters is a free community event hosted by Stanford Medicine that explores the latest advancements in medicine and the health topics that matter most to you and your family. Held on the Medical School campus, Health Matters features a pavilion of informative and interactive exhibits, along with a series of engaging talks from leading Stanford faculty.

Two SCI members team up for a one-of-a-kind presentation. **Kimberly Allison, MD**, and **Mark Pegram, MD**, both study breast cancer, and they share a particular interest in the drug Herceptin; one because he helped develop it, and the other had her life saved by it. Come hear the two tell their stories together for the first time!

Live entertainment and available food and beverages round out a day of education and family fun. For more information, visit *healthmatters.stanford.edu*. ■


Kimberly Allison, MD


Mark Pegram, MD