TRANSMFORMING CANCER
Dear Colleague,

This is an exciting and transformational time for Cedars-Sinai—which was ranked as the No. 8 hospital in the nation by *U.S. News and World Report* in 2018—and for Cedars-Sinai Cancer, which encompasses the Samuel Oschin Comprehensive Cancer Institute as well as all cancer research and clinical activities across the Cedars-Sinai Health System.

Our far-reaching care and research is carried out in communities across Los Angeles: at The Angeles Clinic and Research Institute, Cedars-Sinai Valley Oncology Medical Group, Cedars-Sinai Marina del Rey Hospital, the Hunt Cancer Institute of Torrance Memorial, Tower Hematology Oncology Medical Group and Cedars-Sinai Medical Center.

On July 1, 2018, I was appointed the inaugural director of Cedars-Sinai Cancer. I spent eight rewarding years in my prior position as director of the University of Colorado Comprehensive Cancer Center, a National Cancer Institute (NCI)-designated Comprehensive Cancer Center. There I enjoyed numerous professional accomplishments, including two NCI Cancer Center Support Grant renewals, receiving National Comprehensive Cancer Network membership and inaugural state support for the center as well as the creation of a clinical trials network across several of our hospitals. However, the opportunities and amazing potential presented by Cedars-Sinai Cancer were difficult to ignore. I look forward to serving the cancer patients of Los Angeles and beyond, and offering them the latest advances in research and clinical care.

As always, we welcome your comments and questions. You may reach me at cancerdirector@csbs.org or any of the other Cedars-Sinai Cancer physicians and researchers at 310-423-6324.

Sincerely,

Dan Theodorescu, MD, PhD
Director, Cedars-Sinai Cancer
Director, Samuel Oschin Comprehensive Cancer Institute
PHASE ONE Foundation Distinguished Chair
Professor of Surgery, Pathology and Laboratory Medicine
NOTABLE DEVELOPMENTS IN 2018

In 2018, Cedars-Sinai Cancer had more than 160,000 outpatient visits, making us one of the busiest treatment facilities in California. We delivered more than 37,000 infusions, performed approximately 1,000 inpatient procedures and provided some 18,000 radiation treatments.

Cedars-Sinai committed substantial resources to the cancer enterprise to support significant clinical and scientific expansion. These include new dry and wet laboratory spaces of approximately 76,000 square feet; a cutting edge, multidisciplinary clinic and infusion center at Cedars-Sinai Medical Center; construction of oncology, imaging, surgical oncology and radiation oncology offices in the San Fernando Valley; extensive renovation of the Saul and Joyce Brandman Breast Center to provide two floors of state-of-the-art, comprehensive breast services; and expansion of infusion clinics and exam rooms at The Angeles Clinic and Research Institute as well as at Tower Hematology Oncology.

To accommodate our expanded activities, we restructured the Division of Hematology-Oncology in the Department of Medicine to create two divisions, the Division of Medical Oncology and the Division of Hematology and Cell Therapy.

Our Foundation of Accreditation for Cellular Therapy-accredited Bone Marrow Transplant (BMT) Program was recognized as a Blue Cross Center of Medical Excellence in November, making us one of only four hospitals in California to receive this distinction for adult BMT.

We renewed our three-year accreditation from the American College of Surgeons Commission on Cancer, receiving an Outstanding Achievement Award. Only some 7 percent of programs surveyed by the commission earned this recognition.

Cedars-Sinai received Magnet Recognition for excellence in nursing from the American Nurses Credentialing Center for the fifth consecutive time. We are one of only nine hospitals in the world to receive the prestigious designation five times in a row.

We were selected for the California Precision Medicine Consortium’s All of Us Research Program and are one of the 12 national sites for Precision Promise’s Clinical Trial Consortium for pancreatic cancer.

To help address health inequities, Cedars-Sinai Cancer launched the Research Center for Health Equity to foster research and research-driven community outreach. The center conducts a wide range of population-based investigations, from molecular and genetic studies to behavioral studies relevant to cancer disparities in our diverse region.
Cancer has been a recognized disease for thousands of years, but the first significant strides in research were made just a few hundred years ago. In 1775, scientists linked cancers commonly found in chimney sweeps to fireplace soot, the first time environmental hazards were identified as a cause of the disease. Over the next centuries, inflammation, heredity and radiation were also identified as risk factors. Today, with the decoding of the human genome, cancer research has entered a new era. Whether it’s developing novel screening tools, fine-tuning diagnoses or giving patients access to the most effective treatments, Cedars-Sinai’s robust cancer research leads the way.
TRANSFORMING CANCER

PAST

Research has always been a core mission of Cedars-Sinai, including discovering new methods to diagnose the disease, taking therapies from the bench to the bedside and finding ways to prevent cancer. By enhancing our dedicated research centers, expanding our clinical trials program, and forging innovative partnerships with national and international medical institutes, Cedars-Sinai has become an acknowledged world leader in cancer research.

PRESENT

In addition to continually refining and advancing proven cancer treatments, such as surgery, chemotherapy and radiation therapy, Cedars-Sinai scientists are leaders in the development of new therapies for precision diagnosis and treatment—including immunotherapy drugs, cancer vaccines, nanoparticles, blood cell development, gene cloning, bioactive extracellular vesicles and stem cells.

- Cedars-Sinai researchers have identified a novel molecular driver of lethal prostate cancer, along with a molecule that could be used to attack it.
- We participated in a Phase I trial to test the safety and side effects of the drug avelumab, which is now available to treat certain skin and bladder cancers.
- Our investigators have identified a stem-cell-regulating gene that affects tumor growth in patients with brain cancer, a finding that could impact survival rates of patients, help with short- and long-term prognosis, and aid in the development of personalized treatment.
- A new blood-analysis technique and tiny experimental device have been developed by Cedars-Sinai scientists to help physicians predict which cancers are likely to spread by identifying and characterizing tumor cells circulating in the blood. This approach could allow routine monitoring of cancer-related changes in patients, including how well they are responding to treatment.
- The daunting complexity of cancer was revealed in a recent study led by Cedars-Sinai investigators that identified more than 2,000 genetic mutations in tissue samples of esophageal tumors. The findings reveal that a single tumor can have multiple genetic patterns, illustrating why targeting a single genetic defect during cancer treatment is often not effective.
- Recent Cedars-Sinai research revealed how human growth hormone can set the colon on a path toward cancer and has provided a potential new route for attacking colorectal cancers.
- New immune-system targets on cancer stem cells in brain cancer patients have been identified by our scientists, along with a promising experimental vaccine.
- Cedars-Sinai scientists discovered a novel genetic biomarker responsible for the progression of many breast and prostate cancers, which may help clinicians match patients with the best chemotherapy drug for their particular cancer.
- We were part of a study that indicated that adding hormonal therapy to radiation treatment can significantly improve the average long-term survival of men with prostate cancer who have had their prostate glands removed. The regimen also can reduce spread of the cancer.
- A multicenter study led by Cedars-Sinai scientists showed how cigarette smoking may cause cancer of the pancreas and also uncovered a potential way to treat the disease by using a drug already approved by the Food and Drug Administration for a different type of cancer.
- Using a novel combination of two targeted agents that stimulate an immune response, Cedars-Sinai researchers have eradicated solid tumors in laboratory mice. This approach allowed the tumors to act as their own cancer-fighting vaccine.

FUTURE

Cedars-Sinai is committed to expanding and sharpening the focus of our basic and translational research programs, with a renewed emphasis on population health and disparities research. We continue to pursue pioneering research into disease mechanisms, diagnostic innovations, and new technologies and resources. We are particularly excited about advances in stem cell research, proteomics, biomarkers and nanodrugs—innovations that allow use of cancer’s genetic diversity as a precision weapon. Cancer research is at a historic turning point and, thanks to Cedars-Sinai’s history and core values as well as our large and growing research enterprise, our physicians and scientists are uniquely positioned to guide the next generation of progress against the disease.
Cancer takes a disparate and devastating toll on various populations, and understanding how these inequities play out and how to help those who suffer disproportionately is the mission of the Cedars-Sinai Research Center for Health Equity at the Samuel Oschin Comprehensive Cancer Institute. The center has launched major community outreach and research initiatives in the past year, with a goal of reducing cancer incidence and mortality in L.A. County’s underserved populations and neighborhoods.
With roots in the U.S. Civil Rights movement of the 1960s, the field of cancer health disparities has become a burgeoning area of scientific inquiry over the past decade. Inequities in the impact of cancer are now widely recognized as a major public health problem.

Cedars-Sinai’s Research Center for Health Equity reflects the evolution of this field to encompass the multidisciplinary study of cultural practices, behavioral and lifestyle factors, molecular genetics, and socioeconomic and environmental issues that underlie cancer disparities. The center is at the leading edge of the drive to reduce disparities with a commitment to grassroots community engagement, giving underserved populations a voice in the process of creating strategies for better prevention, screening and access to quality cancer care.

Cedars-Sinai’s population health and health disparities team aggressively fights cancer at the community level in Southern California—one of the most diverse regions in the world. Using sophisticated mapping technology, we have identified the neighborhoods where the most vulnerable populations live. Latinos, Asian-Americans (including Koreans and Filipinos), African-Americans and the LGBTQ community are among the high-risk groups that are currently underserved.

Some estimates show that 50 percent of cancer cases and deaths nationwide could be prevented through lifestyle changes such as giving up smoking, exercising regularly and eating well. With outreach to low-income populations, we are working to motivate high-risk populations to make lifestyle changes critical to cancer prevention and enhance compliance with cancer screening guidelines since survival rates are generally higher if cancer is diagnosed early. Our researchers are investigating issues such as:

- High rates of advanced breast cancer among women of Filipino and Korean descent
- Disproportionate impacts of liver cancer on the Latino community
- High risks of prostate, colorectal and pancreatic cancer—and low rates of screening—among African-American men
- Increased incidence of HPV-related cancers and tobacco use in the LGBTQ community
- Elevated smoking rates among female Korean immigrants
- Increased melanoma risk among low-income Latinos
- Low rates of colorectal screening among Korean-Americans
- Lack of HPV-associated cancer education and vaccination updates for teens and young adults

Ways to increase physical activity in high-risk underserved populations

Methods to engage underserved populations in clinical trials to increase access to potentially lifesaving cancer treatments

A crucial part of our strategy is partnering with community organizations, such as churches, health clinics and youth groups, to provide cancer education and screenings. Through these partnerships, we are building relationships that create pathways for researchers to conduct community-based studies on the root causes of cancer disparities. The findings may enable us to identify the most effective interventions to reduce cancer risk, increase survival and improve quality of life in these communities.

Our future role in population health and cancer health disparities will include leadership in:

- Developing the potential of precision prevention and cancer control. Just as the field of precision medicine tailors healthcare to individual patients, we can tailor prevention and intervention programs to specific underserved communities to reduce the incidence of cancer, increase early detection and improve treatment outcomes.
- Taking a scientific approach to the use of the latest wearable activity monitors and fitness apps to help monitor and modify patients’ behavior.
- Pursuing a better understanding of how genetic differences and their interaction with environmental factors contribute to cancer health disparities. This research could accelerate development of targeted cancer therapies.
- Influencing the future of cancer control statewide and beyond by widely disseminating our discoveries and sharing best practices developed through our behavioral intervention research in underserved communities across Los Angeles.

Cedars-Sinai has taken a leadership role in the California Dialogue on Cancer, a coalition of individuals and organizations dedicated to reducing the burden of cancer in our state. We also are continuing collaborations with other academic institutions on health disparities research—including a study with Stanford University that focuses on steps that low-income Latino communities can take to prevent melanoma.

Our goal, above all, is to find the most effective ways to connect with underserved populations and take cancer prevention and survivorship to those in greatest need.
Cancer is a sinister disease that often avoids recognition by the body’s immune system. Harnessing the immune system to recognize and eliminate cancer and retain tumor-specific memory in case of recurrence offers a promising therapeutic strategy that may render tumor diversity less critical and, ultimately, improve cure rates. To that end, our scientists are conducting cutting-edge immune system research with an eye toward eradicating cancer.
Historically, surgery, systemic therapy and radiation have been the cornerstones of cancer care. However, despite innovations across these disciplines and improved cancer outcomes overall, cancer-related mortality rates remain unacceptably high. Fortunately, recent successes in immune therapy for cancer represent a new era. The potential of the immune system to fight cancer is a concept that dates back to the 1890s, but it wasn’t until the recent successful development of checkpoint inhibitors that induce robust and potentially durable immune responses that this concept became a paradigm-changing clinical reality.

In recent years, the Food and Drug Administration has approved checkpoint inhibitors for the treatment of melanoma, non-small cell lung cancer, bladder cancer and other cancers, but positive responses to checkpoint inhibitors are only observed in a minority of cancer patients. Cedars-Sinai researchers are now conducting important studies aimed at making immune therapy more effective for more cancer patients.

Our researchers are leading innovative clinical trials that incorporate checkpoint-inhibitor-mediated immune stimulation for the treatment of cancer. These drugs have the potential to aid patients with advanced and difficult-to-treat cancers, including aggressive brain tumors, melanoma that has spread to the brain, breast cancer, lung cancer, head and neck cancers, and pancreatic cancer. Cedars-Sinai researchers are working to:

- Identify biomarkers to predict which patients will respond best to checkpoint-inhibitor-mediated immune stimulation
- Improve response rates by discovering which drugs demonstrate promising synergy when combined with immune therapy and testing novel combinations in clinical trials
- Use directed strategies, including radiation, to optimize the exposure of cancer-specific information to the checkpoint-inhibitor-enhanced immune system
- Generate durable tumor-specific immune memory while deescalating chemotherapy doses to increase cure rates while decreasing side effects

Modern immune therapy holds the promise of conferring long-term, tumor-specific immunity for cancer patients. Our scientists are reporting encouraging results from their investigator-initiated studies, including unprecedented responses with immune therapy in combination with radiation for the treatment of triple-negative breast cancer, an aggressive subtype that typically affects women in their 20s and 30s and is associated with high rates of recurrence and an average life expectancy of 12 to 18 months after metastasis.

Cedars-Sinai is poised to directly impact clinical cancer care and, ultimately, improve cure rates, transforming cancer outcomes.
METRICS

Figure 01: TOP 10 CANCERS TREATED AT CEDARS-SINAI BY ANATOMIC SITE (CY 2017)

- BREAST
- PROSTATE
- LUNG/BRONCHUS-NON SMALL CELL
- MELANOMA OF SKIN
- HEMERETIC
- PANCREAS
- COLON
- NON-HODGKIN’S LYMPHOMA
- KIDNEY AND RENAL PELVIS
- BLADDER
- OTHER CANCERS

TOTAL NEW ANALYTIC AND NON-ANALYTIC PATIENTS IN CY 2017

4,886

1,764

952

393

334

262

242

218

216

178

146

Figure 02: UNIQUE OUTPATIENT VISITS

- CY 2015: 126,954
- CY 2016: 112,330
- CY 2017: 176,351
- CY 2018: 186,572

BARCHART DATA:

- CY 2015: 4,886
- CY 2016: 4,886
- CY 2017: 4,886
- CY 2018: 4,886
Cancer is largely a disease of uncontrolled cell growth. In most cases, the disease becomes deadly not just from the development of the primary tumor but also by cancer cells growing and spreading into other parts of the body in the process of metastasis. The goal of medical therapy is to suppress or cure such distant cancer using bioactive chemicals, specialized cells or molecules derived from natural protective proteins. Cedars-Sinai’s drug-discovery efforts aim to develop effective medical strategies and identify the most promising therapy for each patient.
PAST

Chemotherapy using molecular poisons was the first treatment approach to show clinical success against metastasized cancer. Since the advent of chemotherapy in the 1940s, clinical protocols have been refined with the introduction of more effective and less toxic agents, and empirically improved treatment schedules.

In most cases, chemotherapy is still the standard of care, particularly for metastasis. Chemotherapy drugs work by interfering with the biochemistry of cell proliferation. Because cancer cells employ normal processes to grow and divide, chemotherapy drugs also damage normal tissues, resulting in side effects such as fatigue, vomiting, diarrhea and hair loss. Despite decades of research, chemotherapeutic drugs have many limitations, including the emergence of drug resistance as the cancer adapts to the therapeutic regimen. Once resistance to one drug becomes evident, tumors frequently are simultaneously resistant to other agents, including those that work by completely different mechanisms of action.

PRESENT

The decoding of the human genome has allowed the inner workings of the cancer cell to be revealed in extraordinary detail. Using a range of powerful new technologies—collectively known as molecular profiling—Cedars-Sinai scientists and clinicians are mapping the molecular features of cancers in individual patients. These new methods have taught us that cancer is a highly individualized disease. One patient’s breast cancer is likely to be very different, at the molecular level, from another patient’s breast cancer and may even look more like another cancer tissue type.

This modern insight has revealed a path toward more successful cancer therapy in the evaluation of the molecular properties of a single patient’s cancer. This is followed by the identification of vulnerabilities in that cancer, and a precision targeting strategy—like a “smart bomb”—based on unique features of the tumor and methods to track the disease in real time so that therapy can be adapted as the cancer evolves.

Numerous drug-discovery and development studies are now underway by Cedars-Sinai physicians and scientists, including the following:

- New clinical trials using drugs targeted to specific biochemical pathways that are hyperactivated in cancer but not normal tissues
- Application of cutting-edge, “single-cell” molecular profiling methods to characterize in exquisite detail the cellular and molecular heterogeneity of cancer and define new cancer subtypes
- Stem cell technologies (such as “tissue-on-a-chip”) to model cancer behavior and susceptibility to drugs for individual patients
- Comprehensive genetic risk assessment and counseling for patients with brain, colon, endometrial, breast, ovarian and prostate cancers
- Novel transgenic approaches that allow the study of specific human cancer genome defects in mice
- Nanotechnologies that create designer drugs optimized for cancer tissue absorption and cancer cell targeting, with low or no toxicity
- Computer-directed drug design, allowing the structure of cancer-causing molecules to be visualized in 3D space, coupled with computational (“in silico”) screening of chemical libraries to identify inhibitors that fit into and bind to the cancer target

FUTURE

Cedars-Sinai is poised to assume leadership in several areas of drug design and application, including:

- Molecular subtyping of prostate, brain, breast and ovarian cancer
- Development and testing of a novel chemical agent recently shown to be effective against a highly unpredictable form of drug-resistant prostate cancer
- Development of novel chemical agents against bladder, pancreatic and kidney cancers
- Use of “liquid biopsy” technologies to profile cancer cells in the blood, leading to effective treatments without painful and risky tissue biopsies
- Chemical-synthesis strategies designed to improve the effectiveness and specificity of known and experimental agents

Cedars-Sinai has formed collaborations and partnerships with local, national and international laboratories and consortia—in academia, industry and medicine—to accelerate and optimize our drug-development efforts.
A cancer diagnosis often comes with complex challenges that reach beyond the disease itself. Cedars-Sinai’s Patient and Family Support Program offers an array of services to support patients, caregivers and their cancer care team to:

- Promote resilience, dignity and quality of life
- Prevent or relieve suffering by addressing physical, social, spiritual and emotional wellbeing
- Support patients as they plan and navigate transitions in care while achieving personal goals
Cedars-Sinai was founded on the principle that patients deserve the best medical care, provided with compassion. Our mission is rooted in the Judaic tradition, which views healing as both an art and a science. We treat not just the disease but the whole person—body, mind and spirit.

Our expertise includes:

- Nutrition Services: Proper nutrition is a key component of optimal care. With the right food choices, patients can lessen the impact of adverse side effects, weight changes and low energy levels. Our board-certified registered dietitians are integral members of our cancer care team. Using the latest research, they help with meal planning, use of vitamins and herbal supplements, personalized nutrition and food choices tailored to individual needs.
- Psychiatric Services: Unaddressed, cancer-related distress or psychiatric symptoms can negatively impact treatment and outcomes. Our dedicated, cancer-focused psychiatrists aid in medical management of issues such as anxiety, depression and insomnia as well as for medical decisionmaking.
- Social Work Services: Our team of licensed clinical social workers specializes in psychosocial oncology, helping patients and their loved ones navigate the emotional landscape of cancer. They offer coping strategies, counseling, help with physical appearance issues, fertility and sexuality concerns, psychological preparation for surgery and treatment, connections to financial, legal and other resources, and guidance in communicating with children and other loved ones.
- Spiritual Care: Many patients struggle to find meaning and purpose during and after cancer. Our interfaith spiritual care team is certified in stress management and crisis intervention, and represents a broad array of religious faiths and cultural backgrounds. They are available to support each patient’s spiritual needs—religious and nonreligious—with tools to promote wellbeing and resilience. They also offer outreach to surrounding religious communities, can accompany patients to treatments and much more.
- Cancer Rehabilitation: Cancer rehabilitation offers patients personalized care throughout their treatment and recovery to improve their physical, psychological and cognitive wellbeing. Our rehabilitation specialists help patients maintain or restore function, reduce the effects of symptoms and increase independence. Specific areas addressed include fatigue, peripheral neuropathy, lymphedema, pain and cognitive challenges that can arise from cancer treatment.
- Wellness, Resilience and Survivorship: A cancer diagnosis impacts everything from daily activities to long-term plans. To support patients and their loved ones, we offer wellness, resilience and survivorship services, including:
  - Emerging from the Haze™, a six-week group to help patients cope with memory and thinking issues (“chemo brain”)
  - Cancer Exercise Recovery Program, an individually tailored, three-month program for cancer patients and survivors
  - Qi Gong, an ancient Chinese form of exercise that, through movement, self-massage, meditation and breathing, helps patients reach a beneficial meditative state
  - Nutrition in Your Kitchen, a three-week program that supports healthy eating at home through cooking demonstrations, recipe tasting and nutrition education

The depth and breadth of Cedars-Sinai’s supportive care differentiates us from other cancer care facilities and will continue to expand and be integrated into our new affiliate locations. This innovative model transforms care by providing patients and families with the right services at the right time in the right place. Already, these programs allow us to track cancer patients’ needs, quality of life and health system resource utilization over time and react quickly to continually improve our services.

Supportive Care Medicine: Palliative care gives patients tools to manage nausea, pain and shortness of breath, liaises with their care team, and can make an advance care plan and adjust to changes in care.

Present

Patients have measurably better outcomes when supportive care is an integral part of treatment. At Cedars-Sinai, we help patients set and achieve personal goals, navigate transitions in care and plan for the future.

Past

Patents have measureably better outcomes when supportive care is an integral part of treatment. At Cedars-Sinai, we help patients set and achieve personal goals, navigate transitions in care and plan for the future.

Future

The depth and breadth of Cedars-Sinai’s supportive care differentiates us from other cancer care facilities and will continue to expand and be integrated into our new affiliate locations. This innovative model transforms care by providing patients and families with the right services at the right time in the right place. Already, these programs allow us to track cancer patients’ needs, quality of life and health system resource utilization over time and react quickly to continually improve our services.
In a city as large and diverse as Los Angeles, entire populations can be isolated through barriers of transportation, language, education, cultural beliefs or economics—and this can result in lack of access to cancer care. To give every patient access to the best and most advanced cancer care available, including new and groundbreaking therapies in clinical trials, Cedars-Sinai Cancer established a bold initiative to disrupt the hospital-centric model of cancer care and locate services in patients’ communities. Through a dramatic expansion of our network, Cedars-Sinai’s leading-edge cancer services are now available from the San Fernando Valley to the South Bay, and Mid-City to the coast, making Cedars-Sinai Cancer one of California’s largest providers of cancer care.
From Cedars-Sinai’s earliest days, the mandate of our cancer programs has been to offer the best and most advanced care, from diagnosis through treatment and beyond. This includes becoming an international leader in research to find the most effective and least invasive treatments. Our reputation for excellence has drawn patients from throughout the region to our medical center, and by expanding our geographical footprint, we have renewed our commitment to serve all in our community.

Today, Cedars-Sinai Cancer offers expert care for more than 60 types of cancer to more than 30,000 patients each year at many locations throughout the region, including:

- Samuel Oschin Cancer Center at Cedars-Sinai providing a range of inpatient and outpatient care services
- Saul and Joyce Brandman Breast Center—A Project of Women’s Guild, with care that includes fertility preservation, access to clinical trials and an array of supportive services
- Blood and Marrow Transplant Program at Cedars-Sinai Medical Center, treating patients with blood cancers, some solid tumors and other disease types
- Tower Hematology Oncology Medical Group, providing cancer services throughout Beverly Hills, West Hollywood, Hollywood and Mid-City
- The Angeles Clinic and Research Institute, with locations serving Westwood, West Los Angeles, Brentwood, Santa Monica, Malibu, Venice, Marina del Rey, Culver City, Playa Vista and Mar Vista
- Cedars-Sinai Valley Oncology Medical Group, offering cancer services to the San Fernando Valley
- Hunt Cancer Institute of Torrance Memorial, meeting the cancer needs of the South Bay

This network strategy is already advancing cancer care, as evidenced by the prolific research advances and groundbreaking medical publications from physicians in our network.

- Barry Rosenbloom, MD, a founding member of Tower Hematology Oncology Medical Group, published his research on the changing clinical presentation and treatment modalities of Gaucher disease.
- Sam Klempner, MD, assistant professor of Medicine at The Angeles Clinic and Research Institute, and colleagues published a study of a genetic mutation in colorectal neuroendocrine cancers that may predict responsiveness to targeted combination therapy. His team also published on using molecular subtypes in the clinic to guide therapy for stomach cancer and used targeted agents for gastrointestinal and lung cancer.
- Omid Hamid, MD, director of the Melanoma Center and Phase I Immuno-Oncology Program at The Angeles Clinic and Research Institute, and colleagues published high-impact clinical trials research on immunotherapy for melanoma.

We’re off to a great start with our expanded footprint of cancer care and access to clinical trials, as we continue our path to becoming the nation’s most community-focused cancer program. We continuously look at new ways to support underserved population by breaking down barriers and building programs on emerging cancer issues, such as the unique oncology issues of the LGBTQ community. We also are focused on how we can utilize our network as a resource for cancer prevention by creating awareness about the lifestyle and environmental causes of cancer. Every day, we discover new ways to catalyze change and increase hope for patients locally and around the world.
Our faculty members have made important contributions to clinical and translational cancer research and practice. Here, we share some selected examples of faculty research publications, spanning basic, translational and clinical medicine.

Neil Bhowmick, PhD, and colleagues evaluated epigenetic alterations in prostate cancer-associated fibroblasts and determined that the Ras inhibitor RASAL3 is silenced in these cells, thereby driving glutamine synthesis due to increased oncogenic Ras activity. Blocking glutamine uptake in conjunction with androgen deprivation may provide durable remission of prostate cancer. *Journal of Clinical Investigation*, October 2018. J Clin Invest.2018;128(10):4472-84

Michael Freeman, PhD, Ben Maltz Chair in Cancer Therapeutics, and colleagues identified a novel molecular driver of lethal prostate cancer called ONECUT2 and a new inhibitor of this molecule. These findings may be a springboard for more effective ways to control aggressive prostate cancer, a leading cause of cancer death for men in the U.S. *Nature Medicine*, December 2018. Nat Med.2018;24(12):1887-1898

Armando Giuliano, MD, Linda and Jim Lippman Chair in Surgical Oncology, was lead author of a national clinical trial of 891 patients that found that survival for women with invasive breast cancer who are treated with sentinel lymph node dissection alone is similar to those treated with axillary lymph node dissection. *JAMA: The Journal of the American Medical Association*, January 2018. JAMA.2018;319(3):306-7

Simon Knott, PhD, co-led a study that found that limiting an amino acid called asparagine in animal models with triple-negative breast cancer dramatically reduced the ability of the cancer to travel to distant sites in the body. *Nature*, February 2018. Nature.2018;554(7692):378-81

Howard Sandler, MD, Ronald H. Bloom Family Chair in Cancer Therapeutics, was co-chair of a task force that developed important new prostate cancer guidelines, an effort co-led by radiation oncology society ASTRO and the American Society of Clinical Oncology, and published by the American Urological Association. The evidence-based guidelines indicate that shorter treatments are just as effective, equally safe, more convenient and less costly than the previously recommended course of radiotherapy. *Journal of Urology*, October 2018; *Practical Radiation Oncology*, November-December 2018; *Journal of Oncology Practice*, January 2019. Pract Radiat Oncol.2018;8(6):354-360, J Oncol Pract.2018 Dec 4, and J Urol.2018;5347(18):43963-8