



Board of Governors 2013 Annual Progress Report

IN 2012, INITIATIVES SPONSORED BY THE CEDARS-SINAI BOARD OF GOVERNORS (BOG) witnessed remarkable progress. With the energy and support of dedicated BOG members, physicians and researchers across Cedars-Sinai broadened the horizon of scientific knowledge and medical discovery.

BOARD OF GOVERNORS HEART STEM CELL CENTER

Powered by the far-reaching vision of the Board of Governors Heart Stem Cell Center, and under the extraordinary direction of Eduardo Marbán, MD, PhD, the Cedars-Sinai Heart Institute made medical history in 2012. Dr. Marbán and his team published findings in the prestigious medical journal *The Lancet* showing that treating heart attack patients with their own cardiac stem cells helps hearts regrow healthy muscle and may reverse heart attack damage. Their research revealed that:

- The heart undergoes a slow, constant process of cell repair and replacement
- Over a patient's lifetime, cardiac stem cells might replace any given heart cell two or three times
- Creating a supply of heart stem cells customized for each patient could jump-start the heart's regenerative process—saving the sickest patients from needing a heart transplant and returning less impaired hearts to normal functioning

Building upon the success of this research, the Heart Stem Cell Center is launching two new trials:

- RECONSTRUCT – REgenerative CardiOsphere iNjection to STRengthen dysfUnCTional Hearts—a project that will develop the reinsertion of grown stem cells into patients longer after a heart attack
- The ALLSTAR study—a trial focusing on the use of donor-derived cardiac stem cells in patients with a myocardial infarction and weak hearts

Thanks to advances made possible in the Sandra and Lawrence Post Research Laboratory, this ongoing research has the potential to transform a patient's recovery after a heart attack and provide alternatives to traditional treatment options such as medication, implanted devices, or transplantation.

BOARD OF GOVERNORS CENTER FOR CANCER RESEARCH

Through its support, the Board of Governors has been an invaluable ally to the research efforts taking place at the Cedars-Sinai Samuel Oschin Comprehensive Cancer Institute (SOCCI), which continues to break new ground in the fight against cancer. The work of top SOCCI researchers has distinguished the Institute as one of the nation's finest:

- There are now nearly 250 active cancer-related studies underway at the Medical Center, and Cedars-Sinai researchers continue to publish peer-reviewed articles in prestigious journals such as the *New England Journal of Medicine*, the *Journal of the American Medical Association*, and the *Proceedings of the National Academy of Science*
- Physician-scientists at Cedars-Sinai contribute to the advancement of cancer care through research that focuses on understanding the underlying causes of cancer and developing innovative methods of prevention, early diagnosis, and treatment

- The Cancer Institute is a leader in creating personalized medicine techniques, based on genetics, to tailor treatment to the unique characteristics of each patient’s cancer

A critical component of the Board of Governors Center for Cancer Research, the Board of Governors Clinical Research Unit is dedicated to bringing safer, more effective anticancer drugs to the clinic at a faster pace. Over the past year, experts in the Clinical Research Unit have made important strides in their efforts—and they have done it while increasing the number of patients with access to the most promising experimental therapies through clinical trials. Led by Co-Directors Alain Mita, MD, and Monica Mita, MD, program scientists continued to:

- Pursue the discovery, development, and design of biological therapies and drug agents to fight all types of cancer
- Focus on such major research themes as targeted therapies, novel chemotherapy drugs, immune therapies, and engineered viruses that attack cancer cells without damaging healthy tissue
- Involve a high level of cross-disciplinary collaboration among basic scientists, translational researchers, and clinicians at Cedars-Sinai and beyond
- Serve key functions ranging from recruiting staff and pharmaceutical partners, to supervising and supporting mission-critical core laboratories, to providing education and training
- Leverage a 5,700-square-foot clinical space specifically designed for early developmental cancer trials—current trials are exploring new agents for treating brain, breast, ovarian, prostate, pancreatic, and carcinoid cancers

BOARD OF GOVERNORS GENE THERAPEUTICS RESEARCH INSTITUTE

The Gene Therapeutics Research Institute (GTRI) endowment has been kept intact. This year, Cedars-Sinai recruited a new chair of the Department of Medicine, who will be tasked with initiating a search for a physician-scientist expert in an area of genetic molecular medicine consistent with the GTRI’s vital mission. The endowment will remain secure for the future chair holder, who will continue to draw on it in pursuit of the GTRI’s critical work.

BOARD OF GOVERNORS ENDOWED CHAIRS

The three physicians and scientists named as the Cedars-Sinai Board of Governors endowed chairs have made significant contributions to the work being done in their respective areas over the past 12 months. From cancer research to gynecologic oncology to medical genetics, these renowned experts have set a high standard for professional success.

LELAND W. K. CHUNG, PHD

Board of Governors Chair in Cancer Research; Director of the Uro-Oncology Research Program at the Cedars-Sinai Samuel Oschin Comprehensive Cancer Institute

Dr. Chung and his team have honed in on three primary areas of research:

- Gaining insight into the molecular mechanism directing prostate cancer bone metastasis
- Pioneering innovative technology for improved prostate cancer imaging and therapy
- Developing new technologies for capturing and culturing circulating tumor cells from patients for improved prostate cancer diagnosis, prognosis, and treatment

Through their research, Chung and his team have made key inroads into understanding how prostate cancer cells in the bone work at the molecular level. They have also developed and patented a new, near-infrared microfluidic technology for isolating prostate cancer cells. Recently, Chung was invited to participate in a NASA-sponsored International Space Station study to determine how 3D culture may affect the biology and behaviors of human prostate cancer. His outstanding success may help us target prostate cancer bone and soft tissue metastases, improving clinical care and offering the prospect of a cure for men with advanced prostate cancer.

BETH Y. KARLAN, MD

Board of Governors Chair in Gynecologic Oncology; Director of the Women’s Cancer Research Program at the Cedars-Sinai Samuel Oschin Comprehensive Cancer Institute; Director of the Division of Gynecologic Oncology in the Department of Obstetrics and Gynecology; and Director of the Gilda Radner Hereditary Cancer Detection Program

Committed to preventing, detecting, and curing gynecologic cancers, Dr. Karlan and her team continued to move ahead toward their translational research goals, while also directing a nationally recognized program in gynecologic oncology clinical care and research. In 2012, Karlan's efforts yielded a host of truly stellar accomplishments. Under her direction:

- The Women's Cancer Program faculty opened and/or recruited over 20 clinical trials
- The NCI-funded Phase I randomized novel marker trial for ovarian cancer screening was expanded to include five sites
- The Women's Cancer Biorepository, founded by Karlan in 1989, continued adding to its comprehensive collection of over 100,000 gynecologic and breast tissues
- The Gilda Radner Hereditary Cancer Program realized an increase in enrolled patients
- Researchers have expanded their focus on defining molecular subgroups of high-grade papillary serous ovarian cancers, with findings that hold both prognostic and therapeutic implications
- Cedars-Sinai scientists engaged in crucial research collaborations with physicians and scientists at MD Anderson Cancer Center, Harvard/Massachusetts General Hospital, Memorial Sloan Kettering Cancer Center, and other institutions nationwide

For over a decade, the Board of Governors has provided Karlan with a sustained resource to improve outcomes for women with gynecologic cancers, and this year was no exception. She expanded the faculty of the Women's Cancer Program and assumed other leadership roles at the Samuel Oschin Comprehensive Cancer Institute, including chairing both the Cancer Committee and the Cancer Quality Committee. Her work enabled her to discover innovative screening, diagnostic, and treatment strategies for gynecologic cancer patients and further bolstered Cedars-Sinai's reputation as a national model for cutting-edge clinical care and novel translational research. She also played a critical role in Cedars-Sinai's effort to obtain designation as an NCI Cancer Center. Additionally, on December 7, 2012, President Barack Obama appointed Karlan to a six-year term with the National Cancer Advisory Board (NCAB). Karlan was among six appointments to the NCAB, which advises and assists the Director of the National Cancer Institute with respect to the National Cancer Program.

JEROME I. ROTTER, MD

Board of Governors Chair in Medical Genetics; Director of Research and Co-Director, Medical Genetics Institute; Director, Division of Medical Genetics; Director, Common Disease Genetics Program; and Professor of Medicine and Biomedical Sciences

This past year was also marked by significant success. Dr. Rotter continued his work to identify the genes for many of the common diseases that affect our community, with an emphasis on cardiovascular/metabolic disorders, the chronic inflammatory bowel diseases, and eye diseases, including diabetic retinopathy and keratoconus. By finding these genes, Rotter and his colleagues are better able to:

- Understand the causes of disease
- Improve diagnosis and detection
- Develop new therapies and means of prevention

Over the past year, Rotter's group has published 75 peer-reviewed papers and some 34 abstracts at scientific meetings. Highlights include:

- Identifying a gene for the combined traits of insulin resistance and hypertension
- Demonstrating that the level of fasting insulin in the blood, a risk factor for diabetes, hypertension, and coronary artery disease, is determined not only by physiologic variation in insulin resistance but also by variation in the clearance of insulin
- Identifying genes and regions in the chromosome that determine the chromosomal recombination rate in African Americans
- Performing the first successful genome-wide association for keratoconus
- Contributing to the world's largest genome-wide associate study of blood pressure and hypertension, with data on over 200,000 subjects, identifying 28 genetic regions that contribute to variation in blood pressure

Today, the Common Disease Genetics Program is the largest National Institutes of Health-funded research program at Cedars-Sinai and ranks among the top half-dozen U.S. programs in the burgeoning areas of genetics, epidemiology, and molecular biology.