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NEWS

Einstein Cancer Center



Tackling Cancer Block by Block

Bruce Rapkin, Ph.D., director of Albert Einstein College of Medicine's new Marilyn and Stanley M. Katz Comprehensive Cancer Prevention and Control Program, has something in common with President Obama: a background as an effective community organizer.

"People living in low-income, medically underserved communities often don't have access to the full range of services and treatment options available," says Dr. Rapkin (pictured above, second from right, with colleagues David Lounsbury, Ph.D.; Hayley S. Thompson, Ph.D.; and Elisa S. Weiss, Ph.D.). "I've worked for more than 20 years to help such people receive the support they need. I look at the different levels of assistance offered in the community and try to find the best way to organize these services so we can help people solve the health problems confronting them."

The new cancer prevention and treatment program was created with the help of a generous \$7 million donation from Marilyn and Stanley Katz, longtime Benefactors of the College of Medicine.

Dr. Rapkin was recruited to Einstein from Memorial Sloan-Kettering Cancer Center, where he worked for 16 years—the last six as director of the Community Health and Health Disparities Laboratory. As part of his strategy for serving the Bronx, Dr. Rapkin is building on the community-academic partnership model he developed at Sloan-Kettering, where he and his team were actively involved in promoting early detection of breast cancer. Three key members of that team (shown above) have accompanied



Albert Einstein College of Medicine
OF YESHIVA UNIVERSITY

Science at the heart of medicine

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I. DAVID GOLDMAN, M.D.

Director, Albert Einstein Cancer Center
Professor, Departments of Medicine and Molecular Pharmacology
Susan Resnick Fisher Professor

This year, 2009, marks the 37th year in which the Albert Einstein Cancer Center has been a National Cancer Institute–designated center. In fact, we were among the first cancer centers in the country to receive this designation.

Recently, we celebrated the NCI's renewal of our major grant. It provides nearly \$20 million to support the Cancer Center's research programs over the next five years.

Since the Center's creation in 1972, we've made basic-science discoveries that have revealed fundamental abnormalities leading to the formation of cancers. In addition, we've seen notable examples over the past decade in which these basic findings have been translated into novel therapeutic approaches.

Several such therapeutic agents are now being evaluated in clinical trials, and we fully expect that some will be approved and made available to patients in the near future. This is an accomplishment that few other cancer centers can match.

Six months ago, our Center announced a very important addition: a cancer prevention and control program for the Bronx community. This program aims at identifying behavioral factors that increase cancer risk in the Bronx population (cigarette smoking and overeating, for example) and on launching efforts to nullify and reverse such factors.

We owe this program to Einstein Benefactors Marilyn and Stanley Katz. Their very generous gift allowed us to recruit a team of scientists led by Bruce Rapkin, Ph.D., whose vision for this program is described in this issue of the Cancer Center newsletter.

Laboratory research occurs in a highly structured environment under tightly controlled conditions. In many ways, the Comprehensive Cancer Prevention and Control Program's Bronx "laboratory" is more challenging. The Bronx is home to people from many different countries, and each group has its own language and cultural, religious and racial backgrounds. All these factors interact to influence people's access to health-care resources and their ability and willingness to use those resources. Yet this is the real world, where cancer either occurs or is prevented.

Our new cancer-prevention team brings tremendous expertise in identifying and targeting the unique health needs within these diverse communities. We look forward to reporting on the progress of this exciting and important new program in future issues of this newsletter.

A handwritten signature in black ink, appearing to read "I. David Goldman". The signature is fluid and cursive, with a long horizontal stroke at the end.

(continued from page 1)

him to Albert Einstein College of Medicine.

"Our goal is to make the special expertise and resources of the Einstein Cancer Center available to community-based organizations able to reach the medically underserved, such as churches, senior centers, clinics, advocacy groups and social-service agencies," explains Dr. Rapkin. "We want to ensure that advances in cancer prevention, screening and treatment reach the maximum number of people. At the same time, Einstein's interactions with diverse neighborhoods will help us improve our programs and better focus our research efforts."

Dr. Rapkin is enthusiastic about the resources available to him at Einstein.

"Montefiore Medical Center, Einstein's principal teaching hospital, has a terrific network of primary-care and family-practice sites and a wonderful range of oncology services," he says. "And the Einstein Cancer Center, to which I now belong, is staffed by scientists who are nationally recognized cancer researchers."

An important aspect of the Center's research involves testing innovative approaches for preventing major cancers. Dr. Rapkin points to lung cancer—the leading cause of cancer death among men and women in the Bronx and nationally, yet largely preventable. "Many, many fewer lung-cancer deaths would occur if we were more successful in getting people to stop smoking," says Dr. Rapkin. "There has been substantial progress over the years in reducing smoking, but more-effective antismoking interventions are still badly needed—particularly among those with chronic medical and mental-health needs."

Greater emphasis on preventing colon cancer could also pay big dividends. "Next to quitting smoking, we could make the biggest dent in cancer deaths by making people aware of the benefits of early detection of colon cancer through screening," says Dr. Rapkin.

The problems confronting cancer survivors are also a top priority. "Cancer doesn't end when chemotherapy is finished," says Dr. Rapkin. "Once people have cancer, they may have special medical, emotional and even financial needs that can last for years, even if the cancer never recurs. We need to make sure not only that people have access to proper treatment but that they receive support afterward."

Ideally, Einstein's Comprehensive Cancer Prevention and Control Program will become an indispensable fixture in the Bronx community. "We don't want to do 'hit-and-run' research," says Dr. Rapkin. "We want to establish long-term partnerships with the community, so that any gains we make will be permanent—at least until we're able to improve on them."

NEW FACULTY

Peter David Cole, M.D. Associate Professor, Pediatrics

Dr. Cole is a pediatric hematologist/oncologist active in the care of children with malignant diseases. Children who undergo cancer therapy that involves the brain often become fatigued, have trouble concentrating and experience short-term memory loss. Dr. Cole's laboratory and clinical research team are trying to understand the causes of these neurological complications and to develop new ways of preventing them.

Marc James Gunter, Ph.D. Assistant Professor, Epidemiology & Population Health

Dr. Gunter is investigating the molecular pathways through which obesity increases a person's risk of developing cancers of the colon, breast, endometrium and prostate. In collaboration with his Cancer Center colleague

Howard Strickler, M.D., he recently found that an elevated insulin level in the blood increases a woman's breast-cancer risk.

Gloria Shining Huang, M.D. Assistant Professor, Obstetrics & Gynecology and Women's Health

A Board-certified gynecological oncologist, Dr. Huang is involved in the surgical care of patients with gynecological malignancies. Her laboratory research focuses on developing new strategies for treating cancers of the ovary and endometrium using cytotoxic anticancer drugs and new biological therapies that inhibit factors that stimulate tumor growth.

Simon Daniel Spivack, M.D., M.P.H. Associate Professor, Medicine, Epidemiology & Population Health, and Geriatrics

Dr. Spivack studies changes in the lining of the pulmonary airways that may be early harbingers of lung cancer. Using a technique he developed, Dr. Spivack analyzes the DNA

recovered from cells in exhaled breath, looking for abnormalities that occur during the development of lung cancer. The object of this noninvasive technique is to develop a test for detecting lung cancer at an early stage when successful treatment is more likely.

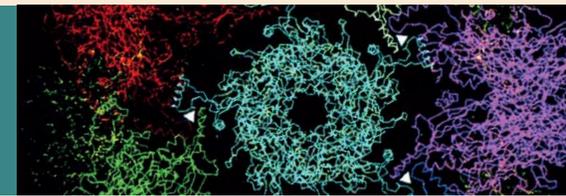
Ulrich Steidl, M.D., Ph.D. Assistant Professor, Cell Biology

Dr. Steidl, the Diane and Arthur B. Belfer Faculty Scholar in Cancer Research, works with stem cells that fuel acute myeloid leukemia. This cancer progresses rapidly and is often resistant to conventional chemotherapy. His work may lead to effective therapies against this type of leukemia.

ON THE WEB

To learn more about the Albert Einstein Cancer Center, please visit the Center's website at www.einstein.yu.edu/cancer.

discoveries

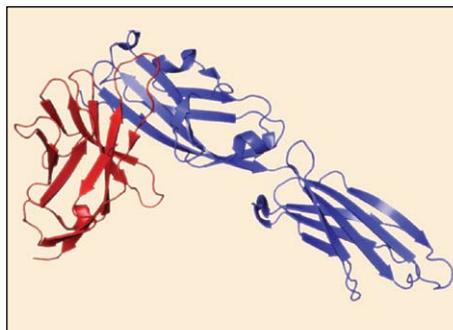


Attacking metastatic melanoma

Two Einstein scientists have pioneered a treatment for melanoma in which a radiation-emitting isotope is "piggybacked" onto an antibody that binds to melanin, the pigment that gives skin its color. When injected into a patient's bloodstream, the antibodies latch onto melanin particles within tumors, and then the isotopes emit radiation that kills melanoma cancer cells. In studies with a mouse model of metastatic melanoma, the two scientists—Ekaterina Dadachova, Ph.D., the first Sylvia and Robert S. Olnick Faculty Scholar in Cancer Research, and Arturo Casadevall, M.D., Ph.D., the Leo and Julia Forchheimer Professor and chairman of Einstein's microbiology & immunology department—showed that administering their antibody-isotope therapy followed by the chemotherapy agent dacarbazine proved more effective against melanoma than either treatment alone.

Arousing the immune system to fight cancer

Why don't our immune systems protect us from developing cancerous tumors? One reason may be a molecule known as PD-1 (Programmed Death-1) that suppresses the immune response to cancer. In this study, Cancer Center researchers led by Steven Almo, Ph.D., were able to obtain a "freeze-frame" image of the crystal structure of PD-1 in association with one of the two molecules with which it combines to signal the immune system to "ignore" tumors. This information could help in formulating drugs that will suppress PD-1 and thereby strengthen the immune response against cancer.



Top: Ekaterina Dadachova, Ph.D., and Arturo Casadevall, M.D., Ph.D.

Bottom: The crystal structure of PD-1, a molecule involved in helping tumors evade the immune system, is shown in red. The binding of PD-1 to two other molecules (one of them shown in blue) suppresses the body's immune response to cancer. The arrows within the molecular strands indicate the direction in which the strands are constructed.

Restoring blood-cell production

In myelodysplastic syndrome (MDS), the bone marrow fails to produce enough red cells, white cells and platelets, and patients become anemic and susceptible to infections and bleeding. MDS is becoming increasingly common in older people and often leads to leukemia. In this study involving a mouse model of MDS, Amit Verma, M.D., and his research group identified a signaling pathway that suppresses the bone marrow's production of blood cells. The researchers found that blocking this signal had the desirable effect of stimulating blood-cell production. These observations provide important clues for treating MDS in humans. This work encompassed epigenetic studies in collaboration with John Grealley, M.B., B.Ch., Ph.D., and was funded, in part, by a generous gift from Janet and Arthur Hershaft. It was also supported by a grant from the G&P Foundation for Cancer Research.

A breast/prostate cancer connection

Women with mutations in either of two genes, BRCA1 or BRCA2, face an increased risk of developing breast cancer, ovarian cancer or both. Now, a large study by Robert David Burk, M.D., and colleagues has found that men who develop prostate cancer and who carry one of these same gene mutations run a greater risk of having an aggressive tumor. The findings could help guide prostate-cancer patients and their physicians in their choice of treatment options.



our donors

NOTABLE GIFTS AND GRANTS

The Albert Einstein Cancer Center gratefully acknowledges the generosity of the following donors, whose support is critical to advancing its mission.

The Einstein Cancer Center has established a unique program in which clinical and laboratory scientists are collaborating on studies to explore the causes, diagnosis and treatment of gynecological cancers. A contribution of \$300,000 from the **Janet Burros Memorial Foundation** to advance ovarian-cancer research will play an important role in building the infrastructure for the new program by helping establish a repository for the tissues that are essential to these studies.

"There are still many unanswered questions about how to prevent, diagnose and treat ovarian and other gynecological cancers. We're proud to know our gift will assist researchers in the new program at the Center in their quest to find answers," said **Mara Burros Sandler**, who serves, along with her husband, **Ricky Sandler**, and her brother, **Chet Burros**, as a trustee of the Burros Foundation. The Foundation was established in memory

of her mother, Janet, who passed away from ovarian cancer.

Ralph and June Adorno have made a gift of a fully paid \$500,000 life insurance policy in support of the new Marilyn and Stanley M. Katz Comprehensive Cancer Prevention and Control Program. Supporting the program "seemed to us



June and Ralph Adorno at a luncheon hosted by the Cancer Research Advisory Board

like a great opportunity to do something for the good of society that would help save lives," said Mr. Adorno.

The **Breast Cancer Research Foundation** has awarded \$732,000 to support three separate studies in breast-cancer research. The studies are being conducted by Rachel Hazan, Ph.D.; Thomas E. Rohan, M.D., Ph.D.; and Susan Band Horwitz, Ph.D., with Haley McDaid, Ph.D.

A grant of \$180,000 from **Susan G. Komen for the Cure** will support the work of Nancy Carrasco, M.D., professor in the department of molecular pharmacology, who is studying a novel approach to breast-cancer treatment.

The **Mary Kay Ash Charitable Foundation** has made a grant of \$100,000 to support the work of Dr. Ekaterina Dadachova in her exploration of radiolabeled antibodies as a novel approach to treating cervical cancer.



Marilyn Katz, chairperson, Cancer Research Advisory Board; Director I. David Goldman, M.D. (right); and Einstein breast-cancer expert Joseph Sparano, M.D., at an Advisory Board luncheon in Westchester

EVENTS

Einstein's Cancer Research Advisory Board hosts events during the year that bring together people interested in supporting the work of the Albert Einstein Cancer Center with distinguished Einstein faculty members who share the latest developments in cancer research.

Terri and Michael Goldberg will host a cocktail reception at their home in New Jersey on Tuesday, October 6, at 7 p.m. The guest speaker will be Joseph A. Sparano, M.D., an Einstein physician internationally recognized for his research on breast-cancer treatment. For more information, please contact Liz Alberti, 718-430-4178.

To learn more about supporting the work of the Center, please contact:

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ALBERT EINSTEIN CANCER CENTER

Our mission: to promote and carry out research that will yield insights into the origins of cancer and lead to breakthroughs for preventing, diagnosing and treating malignant diseases

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