

RESEARCH^{for}
A **cure**

National Foundation
for Cancer Research
2007 Annual Report

NFCR MISSION STATEMENT

The National Foundation for Cancer Research (NFCR) was founded in 1973 to support cancer research and public education relating to the prevention, early diagnosis, better treatments and ultimately, a cure for cancer. NFCR promotes and facilitates collaboration among scientists to accelerate the pace of discovery from bench to bedside. NFCR is about Research for a Cure—cures for all types of cancer.

TABLE OF CONTENTS

Presidents Message	1
Catalyst for Discovery.....	2
Saving Lives	3
Drug Discovery: Susan B. Horwitz	4
Funding Innovation	6
Accelerating Discovery.....	11
Targeting Ovarian Cancer: Robert Bast.....	15
Targeting Cancer's Top Killers.....	17
Albert Szent-Györgyi Prize	18
Global Collaboration	19
Taking Action Against Cancer	20
Hope Fund for Sarcoma Research	21
Financials	22
Extraordinary Support	24



FROM THE PRESIDENT

Dear Friend of NFCR,

As the National Foundation for Cancer Research approaches its 35th year of seeking better treatments and an eventual cure for cancer, we pledge to you—trusted partners, directors, donors, friends, survivors and families—that we will not rest until we accomplish the goal of ending death and suffering from cancer—all types of cancer.

We are accelerating our timetable, harnessing every available resource, and delivering needed funds to scientists on the brink of finding new discoveries with the hope and promise of curing cancer.

Over the years, generous donors like you have provided NFCR the means to fund over \$250 million of pioneering research and cancer prevention education. NFCR has funded breakthrough cancer research, such as: angiogenesis, metastasis, and targeted cancer therapies. All this by providing the best scientists with both the initial funding to discover and sustained funding to enable them to translate their discoveries from bench to bedside.

Because of our focus on collaboration and basic cancer research, NFCR has gained worldwide recognition for its “Laboratory Without Walls.” NFCR’s approach to funding innovative research is accelerating the pace of cancer research and making possible whole new approaches for treating cancer.

Research takes time and money. With your continued support NFCR scientists are discovering cancer’s molecular mysteries and translating these discoveries into novel therapies that hold the only real hope for patients with cancer. *Research for a Cure* is our mission; preventing and curing cancer is our goal.

Franklin Salisbury, Jr.
President and Chief Executive Officer

CATALYST FOR DISCOVERY



In 1973, Nobel Laureate and NFCR co-founder, Dr. Albert Szent-Györgyi, insisted that “cancer is a disease that can be cured.” Today in laboratories across the United States, England, Germany, and China, NFCR scientists are moving cancer research toward that ultimate goal—finding cures for cancer, all types of cancer.

In over 34 years NFCR has spent more than \$250 million to fund “high risk” basic scientific research at universities and research hospitals worldwide. The money

we’ve spent has had a catalytic effect, and NFCR now funds translational research to move many breakthroughs from “bench to bedside” where so many cancer patients desperately need them.

These vital research dollars have been provided by nearly four million individual donors from across the United States who share our commitment to funding the kind of laboratory research that will cure cancer. The National Foundation for Cancer Research is an innovative charity that works to fund cancer research at

the molecular and genetic levels. NFCR applies a unique business model to cancer research: we’ve engineered a continuum for research and discovery—a pipeline where new therapies actually reach the patient.

NFCR takes great pride in being recognized as a catalyst for discovery and world leader in cancer research. We strive to find and bring together the best scientists and help them collaborate to discover, test, and validate new and better life-saving therapies for cancer patients.

SAVING LIVES

The financial support of four million donors to NFCR is paying off. Today, more individuals diagnosed with cancer are surviving longer than ever before. Even those who ultimately succumb to their cancers, live longer and experience a much better quality of life than was possible just a few years ago. Every day at NFCR, our researchers report progress in developing promising new treatments for cancer. But until there is a cure, we will not be satisfied—too many lives are at stake.

NFCR is committed to funding research because we want to cure cancer. We continue to pursue every qualified lead and every opportunity that merits funding with the resources we have available. As an organization that relies solely on the generosity of millions of donors nationwide, we take the fight against cancer very seriously. No risk is too great when it comes to saving lives!

In 2007 NFCR scientists were responsible for significant achievements in many areas of cancer research, including cancer prevention, early diagnosis and treatment.

Discovered 16 cancer-related genes that are potential anti-cancer drug targets;

Identified and developed 52 new drug candidates and potential cancer therapeutics as new and more effective treatments for cancer patients;

Initiated 13 clinical trials;

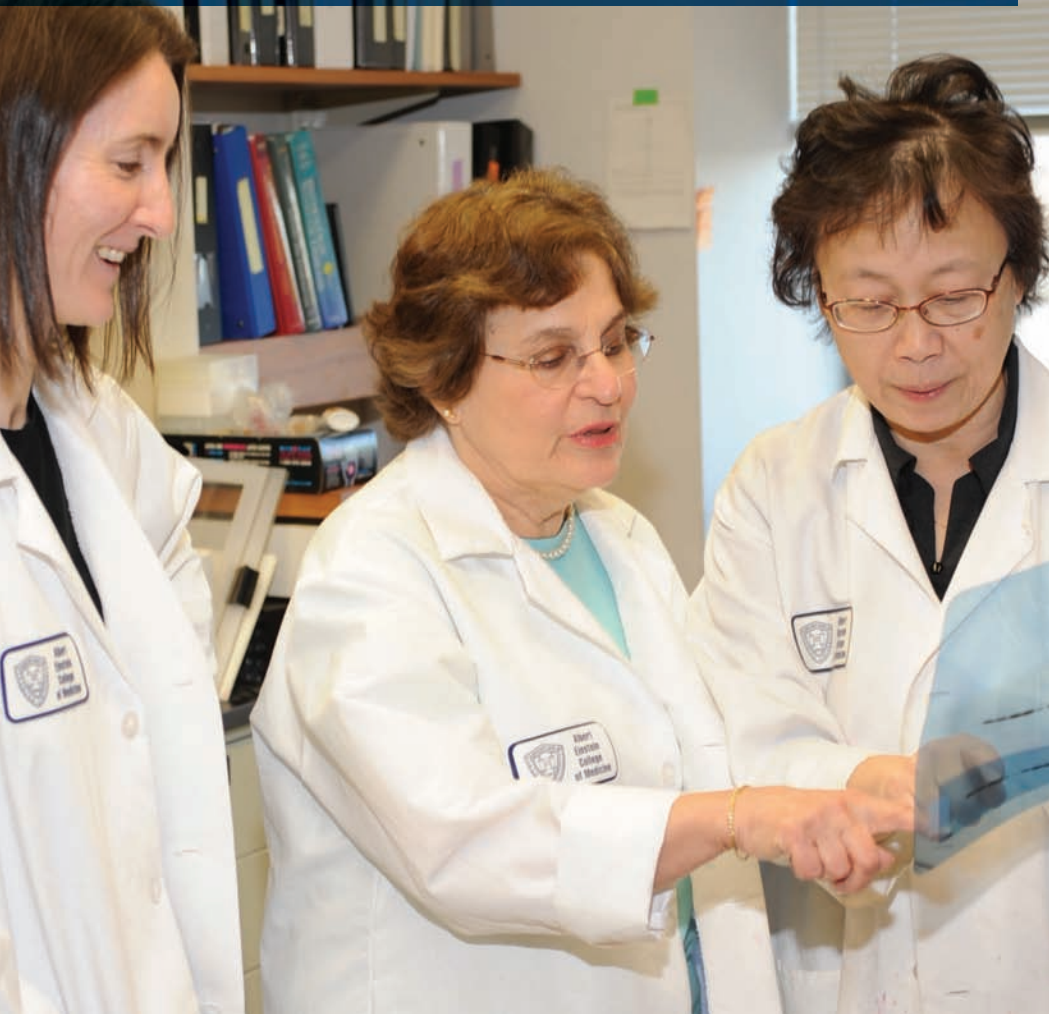
Developed 33 novel research tools or technologies that will improve drug screening, drug delivery, drug manufacturing and clinical treatment;

Identified 11 cancer biomarkers that will be useful for improving cancer diagnosis and evaluation of drug efficacy in patients;

Published more than 195 research papers in peer-reviewed science journals that have made significant contributions to our understanding of the complex nature of cancer.



DRUG DISCOVERY: SUSAN B. HORWITZ



It was August 1962, and a team of botanists working for the U.S. Department of Agriculture was winding up a four-month mission to collect samples of trees, shrubs, weeds, and seeds as part of a government program aimed at finding natural chemicals that might be of some use as medicines. They collected a bag full of twigs, needles, and bark from some Pacific yew trees, and sent these to the National Cancer Institute. In September 1964, Monroe Wall, a medicinal chemist at the Research Triangle Institute in Durham, North Carolina, took receipt of a crateful of desiccated plant parts. Among them was a package containing shriveled pieces of *Taxus brevifolia*, the lowly Pacific yew.

After purifying and isolating these plant compounds, scientists at the Research Triangle Institute discovered that the extracts of the yew tree's bark possessed anti-cancer activity against a broad range of rodent tumors. At the 153rd meeting of the American Chemical Society in 1967, Wall presented a paper describing a yew tree extract which "exhibited an unusually broad spectrum of anti-tumor activity." He added a preliminary sketch of what he suspected to be the chemical structure of the new molecule which he called "Taxol." With the publication of Taxol's structure in 1971, Monroe Wall's work with the molecule was essentially done, and the molecule stayed on the shelf of his lab.

This was a molecule the likes of which few had seen, and reports of the strange molecule's appetite for some nasty cancer cells piqued the interest of cancer researchers. One was Susan B. Horwitz, a molecular pharmacologist at the Albert Einstein College of Medicine at Yeshiva University in New York. In preliminary tests with the few drops she'd managed to squeeze from government labs, Dr. Horwitz became fascinated by how quickly and elegantly the stuff killed cancer cells growing in culture. She and her lab partners were sure they had never seen anything quite like it, and they were determined to find out how the molecule worked. They needed more Taxol.

In August 1978, Monroe Wall received a letter from the NCI Cancer Chemotherapy National Service that read: "Dear Monroe: Can you help this poor girl?" Attached was a copy of Horwitz's letter asking for some specially prepared Taxol necessary to pursue her work. Within a few months of receiving the first samples of this compound, Dr. Horwitz had revolutionized cancer research.

Anti-cancer drugs kill cancer cells by interrupting their ability to divide. They typically do this by wrecking the proteins needed to make ultra-fine filaments called microtubules. To be able to divide, a cell needs to make millions of these tiny structures to use as scaffolding for building the foundation of a new cell. Once the new cell gets fleshed out, so to speak, the microtubules automatically disassemble into fragments of tubulin, the structure's original protein building blocks.

Dr. Horwitz discovered that Taxol didn't work that way at all. Instead of preventing microtubules from forming, Taxol served as a powerful stimulant for their growth. In the presence of Taxol, cells go into overdrive churning the things out, eventually clogging up a cell's innards. What's more, the process was found to be irreversible—Taxol locked the thickets of microtubules into place and blocked their ability to disassemble. Choking on their own growths and with no way to divide, the cancer cells soon collapsed and died.

This was a breakthrough discovery. Dr. Horwitz's elucidation of the molecular mechanism by which Taxol killed cancer cells was completely new to science. Taxol became a prototype for a whole new class of

chemotherapeutic drugs and gave oncologists a new weapon in the fight against cancer.

Today, Taxol is one of the most widely used chemotherapy drugs in the world. It was approved by the U.S. Food and Drug Administration for the treatment of refractory ovarian cancer in 1992, for metastatic breast cancer 1994, and in 1999 Taxol was approved for non-small cell lung cancer. The drug has been used in well over a million patients worldwide.

UNVEILING THE MYSTERY OF TUMOR DRUG RESISTANCE

But Taxol is not a magic bullet. Not only are some tumors intrinsically resistant to anti-cancer therapies, oncologists have now learned that many cancers eventually develop resistance to chemotherapy, and Taxol is no exception. The development of tumor resistance has greatly hindered Taxol therapy.

Fatality in breast cancer—fatality in all cancers—can now be attributed to metastasis and development of resistance to chemotherapy. And just as Dr. Horwitz first discovered how Taxol works at the molecular level, she is still passionate in her resolve to unravel the molecular mechanisms underlying Taxol resistance in tumor cells.

NFCR shares Dr. Horwitz's passion and resolve. And with other NFCR researchers who have showed that metastasis and resistance to chemotherapy are mostly due to overexpression of pro-metastatic, pro-angiogenic, multi-drug resistance, and anti-apoptotic genes, Dr. Horwitz is now undertaking research to test whether genes cause cells to become Taxol resistant. An answer to this question could well be another breakthrough in cancer research.

These are not new ideas—other researchers have focused on whether genes cause resistance by acquiring genetic mutations. Dr. Horwitz's approach is different: she is exploring whether genes switch off (or on) inappropriately in cancer cells when these patients are treated with Taxol. It is known that cancer is associated with major abnormalities in the way genes get switched off and on, through what are called epigenetic mechanisms.

Dr. Horwitz is looking to pinpoint the genes from a network of genes that could

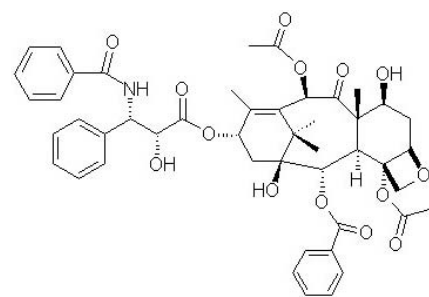
be responsible for drug resistance. These epigenetic changes need to be discovered because, unlike DNA mutations, they can then be reversed—oftentimes by drugs that are already being used to treat other diseases. Dr. Horwitz proposes that these new drugs and/or a combination of multiple drugs will interact selectively with the different gene network responsible for tumor formation and thus better target the tumor cells. This is an exciting approach, and if Dr. Horwitz can identify novel and targeted anti-cancer drugs that can be used in combination with Taxol to generate synergistic cancer-killing effects or suppress the cancer cell growth, such a “rational combination” would potentiate each other's anti-tumor effects, thereby requiring a lower concentration of each drug and resulting in decreased toxicities and side effects.

Such a combination therapy approach to the treatment of ovarian, breast, and lung cancers could make a huge difference to those who have malignancies that have not responded to Taxol, or that originally responded, and then became resistant to the drug.

If there weren't such a thing as drug resistance, Dr. Horwitz showed that we could do pretty well at killing tumors and treating cancer patients using Taxol. The fact that a cancer may be resistant to Taxol does not mean that Taxol's unique anti-cancer fighting mechanism no longer works. Here, the combination therapy approach proposed by Dr. Horwitz offers great hope and promise to cancer patients. Each drug present in a combination therapy works through a different set of genes. Some of these genes may be resistant or unresponsive to one drug, but are responsive to the other. A combination therapy would overcome the tumor's drug resistance to Taxol therapy.

In addition to seeking out epigenetic mechanisms by which to restore and enhance Taxol's anti-cancer effects, Dr. Horwitz and her colleagues are continuing to explore other natural products, from bacteria and marine animals, which have totally different chemical structures from that of Taxol, but which bind to microtubules more effectively and with higher specificity. These drugs are functionally similar to Taxol, and may offer useful alternatives for Taxol, where Taxol is poorly tolerated or ineffective.

Dr. Horwitz is arguably one of the world leaders in natural products cancer research. Today, she continues her work with Taxol, investigating whether the presence of different forms of tubulin might explain why some cancer cells are more responsive to the drug than others. Dr. Horwitz's research will continue to produce the lead structures, the templates for the construction of novel anti-cancer therapies which will provide all of us reason to believe that cancer will be cured.



“THE CHEMICAL STRUCTURE OF TAXOL IS UNIQUE AND... WITHIN A MONTH WE KNEW THAT WE HAD A VERY INTERESTING MOLECULE THAT WAS DOING SOMETHING TO CELLS WHICH NO ONE ELSE HAD SEEN OCCUR WITH A SMALL MOLECULE. IT WAS VERY EXCITING.”

—SUSAN HORWITZ, PH.D.

A high-magnification electron micrograph of a cell nucleus. The nucleolus is a dense, spherical structure composed of ribonucleoprotein, appearing as a bright, granular mass in the center of the nucleus. The surrounding nuclear material is less dense and more diffuse, showing the intricate structure of chromatin and the nuclear envelope.

FUNDING INNOVATION

THE NFCR RESEARCH DISCOVERY CENTERS

NFCR works to accelerate the pace of cancer research by recognizing innovative ideas while they are still in their infancy, and providing scientists with the initial funding to substantiate their ideas. To maximize the productivity of its cancer research programs, NFCR has established an international network of Research Discovery Centers, each of which is directed by a highly accomplished cancer research leader. Together, these Centers constitute our “Laboratory Without Walls”—promoting the sharing of ideas and information

across research institutions and engaging top research minds from a wide range of scientific disciplines.

Scientists in these Centers are connected to more than 30 lead investigators at other NFCR-funded institutions. Together, NFCR’s scientists constitute a “research collaborative” working on cancer from diverse perspectives and actively sharing ideas and information with one another.

Beginning at the molecular and genetic levels, NFCR scientists are leading the way in some of

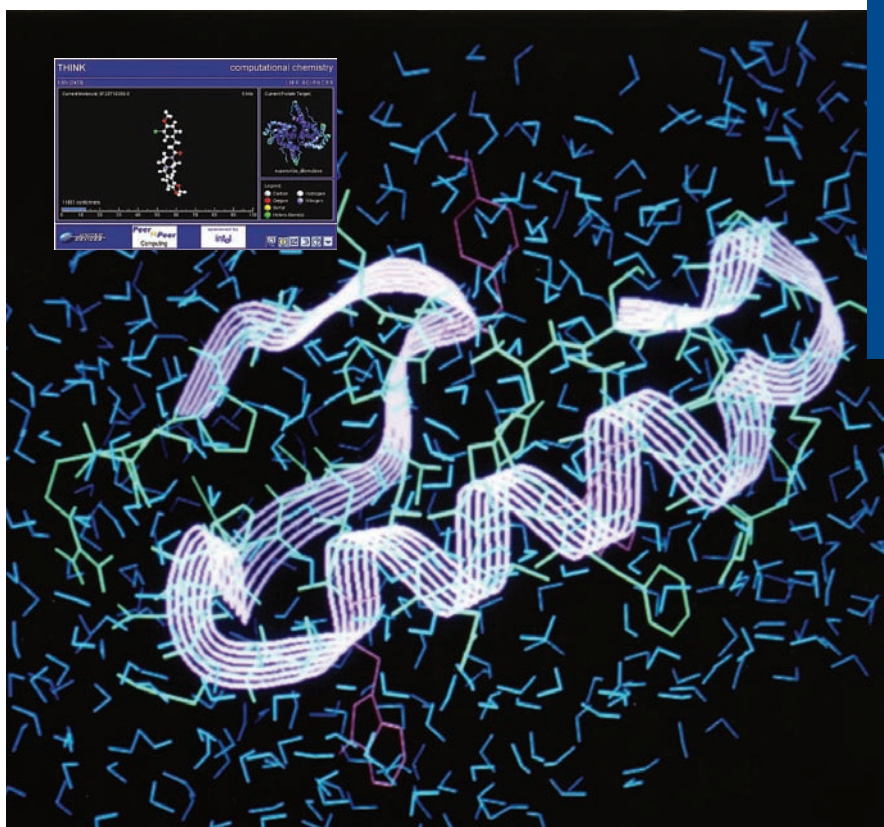
the newest and most promising research fields, including chemoprevention, nanotechnology, molecular profiling, genetic mapping, angiogenesis, antibody therapies, the development of new targeted therapeutics, and more. Because our scientists are encouraged to share their latest findings with one another, NFCR’s approach increases the likelihood that discoveries in one area of cancer research will lead to advances in another.



W. Graham Richards, D.Sc., Director, NFCR Center for Computational Drug Discovery, University of Oxford

NFCR Center for Computational Drug Discovery – University of Oxford, Oxford, UK
Accelerating the drug discovery process by developing cutting-edge drug screening computer software and utilizing distributed computing technology to screen a huge library consisting of 3.5 billion small molecule compound structures established at the Center. This NFCR Center involves collaborators from the U.S., U.K., Spain, Portugal and Italy.

Enlisting over three million personal computers worldwide, NFCR's **Screensaver-Lifesaver Project** used parallel computing power and virtual screening to assess the interactions between small drug-like molecules and cancer-causing targets. The Screensaver-Lifesaver project resulted in tens of thousands of lead compounds as potential new anti-cancer drug candidates. The results have been transferred to the NFCR Center for Global Collaboration for biological tests, moving to the next stage of drug development.



Screensaver project cuts years from the drug discovery process

“WITH THIS SIGNIFICANT NEW RESOURCE, CANCER RESEARCH WILL BE DRAMATICALLY CHANGED.... SCIENTISTS WILL BE ABLE TO PERFORM RESEARCH FASTER THAN WE EVER THOUGHT POSSIBLE.... THIS IS AN INCREDIBLE ADVANCEMENT FOR HOW MEDICAL AND CANCER RESEARCH WILL BE CONDUCTED.”

— JOHN R. SEFFRIN, PH.D., CEO, AMERICAN CANCER SOCIETY

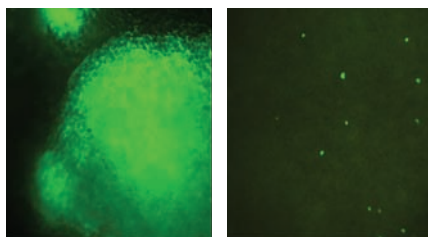
From Low Speed to High Speed

In 2007, Researchers at the NFCR Center for Computational Drug Discovery introduced 3-D Molecule Search Engine software, known as **Ultrafast Shape Recognition (USR)**, which is up to 14,000 times faster than developed earlier similar technology to search for virtual compounds as anti-cancer drug candidates. This novel method enables scientists to find drug-like molecules within a huge database in a few hours rather than a few years.

NFCR Center for Metastasis Research – University of Alabama at Birmingham, AL
Addressing the most lethal aspect of cancer—metastasis, which is related to more than 90% of cancer deaths. Research at the Center is focused on identifying the fundamental molecular changes in cancer cells that cause them to metastasize, and translating the results into strategies to prevent metastasis in many types of cancer, including breast, prostate, colon, ovarian, pancreatic cancer and melanoma. To date, Center researchers and collaborators have discovered six metastasis suppressor genes, some of which hold great promise as targets for which anti-metastasis therapies can be developed.



Danny Welch, Ph.D., Director, NFCR Center for Metastasis Research, University of Alabama, Birmingham



*NFCR-CMR researchers have engineered metastatic tumor cells to express a green fluorescent protein, allowing them to track tumor cells more easily. The panel on the left shows a lung in which melanoma cells have spread and have grown to a size that will kill the tumor-bearing mouse. The panel on the right also shows the same tumor cells, but now these cells make the *KISS1* metastasis suppressor. The green dots are actually single cells. Those single cells persist for a long time, but they don't kill the mice!*

NFCR Center for Molecular Imaging – Case Western Reserve University, Cleveland, OH
Establishing a new technology platform – molecular imaging for early detection of cancer. The Center is currently focusing on identifying molecular markers specific to cancers such as breast, prostate and brain cancer and developing imaging tools to make these markers visible. This new technique would identify cancer at the molecular level, allowing early-stage detection. In addition, great progress has been made in developing novel techniques which allow simultaneous imaging of multiple molecular markers, dramatically increasing the accuracy of cancer detection.

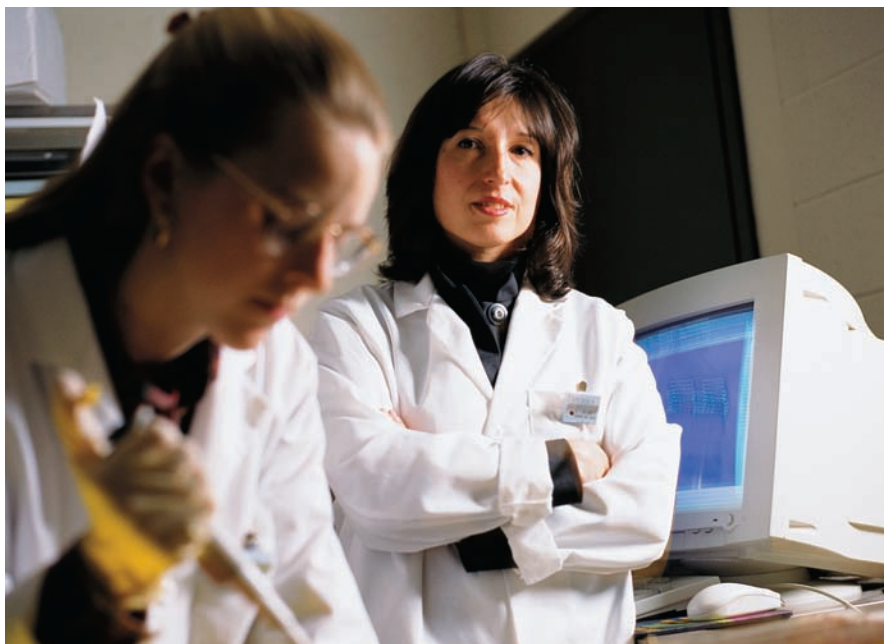
NFCR Center for Targeted Cancer Therapies – Translational Genomics Research Institute, Phoenix, AZ

Developing targeted therapies for pancreatic cancer — one of the most deadly cancers. Several molecular therapeutics, including urokinase inhibitor UK122 and monoclonal antibodies developed at the Center have already demonstrated strong cancer-inhibiting effects in preclinical tests. Moreover, its collaboration with the NFCR Center for Computational Drug Discovery at the University of Oxford using a cutting-edge computational screening program has yielded more than 900 compounds that could lead to new drugs for treating pancreatic cancer.



Dan Von Hoff, M.D., Co-Director, NFCR Center for Targeted Cancer Therapies, TGen

NFCR Center for Anti-Cancer Drug Design and Discovery – Yale University, New Haven, CT
Developing anti-cancer β -peptide inhibitors to address one of the biggest challenges in drug discovery—the development of compounds that are able to target the currently “non-druggable” disease-related proteins. β -peptide inhibitors are a new generation of small molecule drugs that are highly effective and specific in targeting almost any disease-related protein-protein interactions. Many of these important disease targets are not able to be used for drug development by traditional technologies. Currently, Center researchers are focusing on designing β -peptide inhibitors against protein interactions involving c-Myc, HDM2 and Bcl-2, which may lead to new therapeutics for breast, prostate, digestive tract cancers, leukemia, and other types of cancers.



Alanna Schepartz, Ph.D., Co-Director, NFCR Center for Anti-Cancer Drug Design and Discovery, Yale



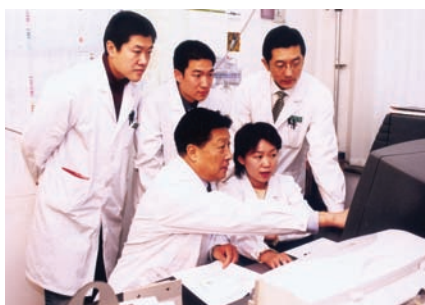
Larry Marnett, Ph.D., Co-Director NFCR Center for Proteomics and Drug Action, Vanderbilt

NFCR Center for Proteomics and Drug Action – Vanderbilt University, Nashville, TN
Developing proteomics techniques to identify molecular targets and to monitor anti-cancer drug distribution, drug efficacy, and toxicity in human bodies. Research at the Center could lead to anti-cancer drugs with improved efficacy and reduced side-effects. In addition, results may also offer solutions to drug resistance, a devastating problem faced by many cancer patients.

NFCR Center for Molecular Targeted Therapy – Institute of Medicinal Biotechnology, Beijing, P.R. China
Synthesizing anti-cancer drug compounds with improved bioavailability and identifying

new biological targets that can be used as drug agents for regulating cell-cycle and inhibiting metastasis.

NFCR Center for Global Collaboration—Tianjin Medical University Cancer Institute and Hospital, Tianjin, China



Hao Xi-Shan, Ph.D., President, Tianjin Medical University Cancer Institute and Hospital

Building a platform to streamline the preclinical development of new anti-cancer treatments and promote international collaborations by fully utilizing China's rich resources in manpower, biospecimens and technology. Currently, research at the Center is moving forward on multiple fronts, including screening for potential metastasis inhibitors from chemical, antibody, and Chinese medicine libraries,

conducting biological tests on novel drug candidates screened out by NFCR Center for Computational Drug Discovery at the University of Oxford, and establishing a reliable monoclonal antibody production system.

NFCR Center for Therapeutic Antibody Engineering – Dana-Farber Cancer Institute, Harvard Medical School, Cambridge, MA
Established a library containing 1.6 billion different human sFv antibody-displaying phages, a tremendous resource for developing monoclonal antibody-based targeted therapies. Currently, Center researchers are identifying high affinity human sFv antibodies against selected cancer targets, and providing antibodies to facilitate the cancer research projects conducted by scientists within the NFCR networks.

ACCELERATING DISCOVERY



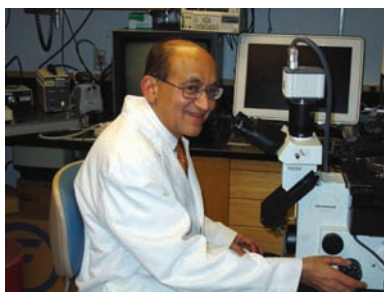
RESEARCH HIGHLIGHTS

In laboratories across the United States, Europe and China, NFCR scientists and their research teams are working at the cutting edge of cancer research today. Highlighted here is a sampling of the important research breakthroughs in fiscal year 2007. To learn more about the latest research by NFCR scientists, visit www.NFCR.org.

ANTI-ANGIOGENESIS: SHUTTING DOWN CANCER

Harold F. Dvorak, M.D., *Beth Israel Deaconess Medical Center*, NFCR Fellow and Albert Szent-Györgyi Prize winner for his discovery of vascular permeability factor/vascular endothelial cell growth factor (VPF/VEGF), is continuing his pioneering research on tumor angiogenesis. His research demonstrates that tumor vasculature is heterogeneous and has multiple types, each with very different structural and molecular properties. This breakthrough discovery presents the first new classification of tumor blood vessels in almost 30 years, and provides critical guidance for the development of new drugs that attack different types of tumor blood vessels than Avastin™ does, resulting in improved efficacy of anti-angiogenic treatment.

BIOMARKER DISCOVERY FOR EVALUATING CANCER TREATMENT EFFICACY



Rakesh K. Jain, Ph.D., *Massachusetts General Hospital*, is investigating vascular normalization and developing surrogate markers for evaluating treatment efficacy of the anti-angiogenic drug Avastin™. Several reliable biomarkers have already been identified by Dr. Jain's group and are being analyzed in Phase II clinical trials in rectal cancer patients. This is a significant step toward customizing the anti-angiogenic therapy for individual patients to achieve optimal results.

CANCER SUPPRESSOR GENES

Robert Bast, Jr., M.D., *M.D. Anderson Cancer Center*, discovered seven imprinted tumor suppressor genes in epithelial ovarian cancer, and found that loss of their function contributes to ovarian cancer development and tumor recurrence. Drugs that restore the functions of these genes to normal levels may offer more effective treatment to patients with this highly aggressive disease.

METASTATIC BREAST CANCER

Kathryn B. Horwitz Ph.D., *University of Colorado Health Science Center*, successfully established the first reliable disease model for elucidating the role of estrogen, progesterone, and their receptors in breast cancer metastasis. The insights gained into how female hormones influence this fatal process suggest that progesterone may help to slow down or alleviate breast cancer metastasis to the bone and brain.

TARGETED AND COMBINATION CANCER THERAPIES



I. Bernard Weinstein, M.D., *Columbia-Presbyterian Medical Center*, NFCR Fellow, is credited for his theory of "Oncogene Addiction," which has become a paradigm for targeted cancer therapy development. His research team continues to explore the molecular mechanisms of carcinogenesis, and uses these insights to develop naturally occurring, or

synthetic compounds, for cancer prevention and therapy. As a result of Dr. Weinstein's research, a clinical trial on green tea component EGCG has been initiated to study its potential anti-cancer effects in patients who are at increased risk of esophageal cancer.

Wei Zhang, Ph.D., *M.D. Anderson Cancer Center*, in collaboration with Dr. Stanley Hamilton, has been investigating exciting new combination therapy strategies that target an important abnormally activated pathway that feeds the growth of colon cancer cells. Drs. Zhang and Hamilton are also investigating a new therapeutic target called NGAL, which likely contributes to colon cancer metastasis.

Daruka Mahadevan, M.D., Ph.D., *Arizona Cancer Center*, determined that the combination of EGFR inhibitor Tarceva™ and MP470, a novel drug developed in his own lab, is more effective in killing prostate cancer than the single drug method. These exciting results may soon be evaluated clinically, leading to new and more effective combination therapies against prostate cancer.

CHECKPOINTS FOR PROTEIN PRODUCTION AND CANCER

Paul Schimmel, Ph.D., *Scripps Research Institute*, discovered a "quality control" process that human cells use to produce defect-free proteins in the body. This discovery provides the first evidence of the existence of three different quality control checkpoints in the cell, and explains for the first time how these checkpoints identify and correct errors occurring during protein production. The impact of this discovery is profound, since the connection between errors in protein translation and cancer has not been fully investigated because the role of these checkpoints could not be confirmed. This NFCR-funded breakthrough will now enable scientists

to discover the underlying causes of cancer and other diseases and develop novel approaches for treatment. Dr. Schimmel and his colleagues are now conducting additional experiments to better understand these protein translation checkpoints. Collaborative projects aimed at identifying genetic abnormalities that can lead to incorrect protein translation have also been initiated.

NANOSCALE TUMOR-TARGETING DRUG DELIVERY SYSTEM



Esther H. Chang, Ph.D., Georgetown University, has developed a nanoscale, liposome-based tumor-targeting drug delivery system that can carry anti-cancer drugs directly to both primary and metastatic tumor cells, significantly enhancing a tumor's sensitivity to chemo and radiation therapy. Dr. Chang and her team successfully delivered tumor suppressor gene p53 and anti-HER2 siRNA to breast and pancreatic cancer tumors. The p53 nanocomplex is currently in clinical trials for patients with solid tumors.

CHINESE HERBAL MEDICINES AS BENEFICIAL ADJUNCT TO CANCER CHEMOTHERAPY

Unlike Western medicine that generally uses purified compounds and targets a single physiological endpoint, traditional Chinese medicine compositions usually comprise multiple herbs and components that interact and act simultaneously through multiple molecular targets and cellular mechanisms.

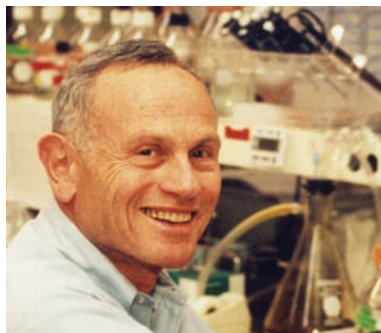
Yung-Chi Cheng, Ph.D., Yale University School of Medicine, discovered that PHY906, a Chinese herbal medicine formula described 1,700 years ago, enhances activity of a variety of anti-cancer drugs, while decreasing their toxicity. This formula is currently being studied in clinical trials with colon, liver, and pancreatic cancer patients. If proven effective, PHY906 could become one of the first FDA approved oral herbal medicines for anti-cancer treatment.

PERSONALIZED MEDICINE

Daniel A. Haber, M.D., Ph.D., Massachusetts General Hospital Cancer Center, identified genetic abnormalities implicated in cancer progression through genome-wide screening technology. Dr. Haber's team discovered a specific mutation in the EGFR (Epithelial Growth Factor Receptor) found in about 10% of lung cancer patients, and confirmed that these patients' tumors will respond to targeted therapy Iressa™. This is a breakthrough in requisite molecular profiling for targeted cancer therapies and personalized medicine.

Waun Ki Hong, M.D., M.D. Anderson Cancer Center, initiated four clinical trials to test personalized medicine protocols in lung cancer patients, which may improve treatment efficacy in individual patients. Additionally, the team is leading clinical research on curcumin and celecoxib for their potential roles in lung cancer prevention.

CHEMOPREVENTION AND CANCER



Michael B. Sporn, M.D., Dartmouth Medical School, is developing new triterpenoid compounds for the prevention and treatment of cancer.

His highly fruitful research has resulted in several triterpenoid compounds which have potent preventative effects against liver cancer, melanoma, and highly aggressive lung cancer.

Janos Ladik, Ph.D., University Erlangen-Nürnberg, Germany, is investigating the cancer prevention effects of DNA intercalating agents. Certain cellular conditions disrupt the normal electronic status of DNA and its surrounding proteins, which can lead to a cancerous state of the cell. Dr. Ladik is investigating DNA intercalating agents which may reverse these detrimental effects and prevent cancer initiation.

IMMUNOTHERAPY AND VIROTHERAPY



Laurence J. N. Cooper, M.D., Ph.D., M.D. Anderson Cancer Center, is evaluating the anti-lymphoma effects of genetically-engineered human immune cells. Dr. Cooper developed a new class of tumor-targeting immunotherapies to treat leukemia, and developed technology that allows quick and cost-effective manufacturing of the therapeutic immune cells, a very crucial step in moving the novel therapy into clinical applications.

Terence H. Rabbitts, Ph.D., FRS, Leeds Institute of Molecular Medicine, England, is developing anti-RAS intracellular antibodies that prevent aberrant RAS signaling inside cancer cells. Oncogenic RAS mutation underlies the pathogenesis of more than one-fourth of all human cancers. Dr. Rabbitts' breakthrough research could bring improved treatment against many types of cancer, including pancreatic, lung, colon cancer, and leukemia.

Feng Yao, Ph.D., Brigham and Women's Hospital, Harvard Medical School, is developing a novel

virotherapy to treat lung cancer patients more effectively and safely. Dr. Yao's team created a new generation of therapeutic virus named KTR-27. Using a unique technology developed in his own laboratory, Dr. Yao is making sure KTR-27 does not harm normal cells while maintaining its powerful toxic effects on cancer cells. This innovative research will lead to a novel treatment for lung cancer patients.

NUTRITION AND CANCER PREVENTION

Helmut Sies, M.D., *Heinrich-Heine-Universität, Germany*, is well recognized for his research on the cancer prevention effects of lycopene, the antioxidant found in tomatoes and other vegetables and fruits. His team demonstrated that essential fatty acids are another group of micronutrients with skin protection activity. In addition, they are investigating the antioxidant effects of synthetic compounds derived from two natural products, carotenoids and flavonoids, named flavocarotenoids, which may be more powerful than the single components in skin cancer prevention.

Bruce N. Ames, Ph.D., *Children's Hospital Oakland Research Institute*, is revealing the mechanisms of micronutrient deficiency as a cause of DNA damage. Dr. Ames' team demonstrated that deficiency of vitamins C, E, B12, B6, niacin, folic acid, iron, or zinc causes DNA damage and may lead to cancer. These findings underlie the importance of maintaining a healthy and balanced diet to reduce cancer risk.

NEW THERAPEUTICS FOR LEUKEMIA

Alan C. Sartorelli, Ph.D., *Yale School of Medicine*, has discovered a novel therapeutic approach for the treatment of leukemia. The drug, cloretazine, designed and synthesized in his own laboratory, is currently in Phase II and Phase III clinical trials for treatment of AML (Acute Myelogenous Leukemia).

SENESCENCE AND TUMOR SUPPRESSION

Stanley Cohen, M.D., *Stanford University School of Medicine*, is elucidating the genetic mechanisms

that regulate the proliferation and metastasis of cancer. Cellular senescence is the phenomenon whereby normal cells lose the ability to divide as they age. Dr. Cohen's team discovered that senescence induced by the enzyme Smurf2, can also suppress the growth of tumor cells. This important discovery suggests that modulation of Smurf2 activity may offer a new strategy in the suppression of tumor growth.

microRNA MASTER SWITCHES FOR CELL SIGNALING



Curt I. Civin, M.D., *Johns Hopkins University School of Medicine*, is elucidating how the survival, proliferation, and differentiation of normal and malignant blood stem cells are regulated, and then translating the results into useful clinical tools. Dr. Civin's team discovered a set of microRNAs that function as powerful "master switches" to keep adult blood-forming stem cells in their primitive state. This groundbreaking discovery may one day enable scientists to grow new blood cells for transplant into patients with cancer and other bone marrow disorders.

TUMOR DRUG RESISTANCE

Susan Band Horwitz, Ph.D., *Albert Einstein College of Medicine*, is deciphering how tumors develop drug resistance to Taxol, and is searching for natural products that are analogs of Taxol that are able to circumvent the problem of tumor drug resistance. Her research has shown that two natural products, epothilones and discodermolide, may be useful in treating tumors that are resistant to Taxol. The availability of such drugs for the treatment of lung, breast,

and ovarian cancers could make a significant difference for those patients whose tumors are resistant to Taxol.

Webster K. Cavenee, Ph.D., *Ludwig Institute for Cancer Research*, has been leading his group toward identifying and studying genes whose mutation or altered expression lead to malignancy. Glioblastoma is a highly aggressive brain tumor which commonly expresses EGFRvIII, a variant version of EGFR (Epidermal Growth Factor Receptor). A novel treatment regimen including an EGFRvIII inhibitor developed in Dr. Cavenee's lab has shown powerful anti-glioblastoma effects, and may represent a novel therapeutic approach to overcome drug resistance.

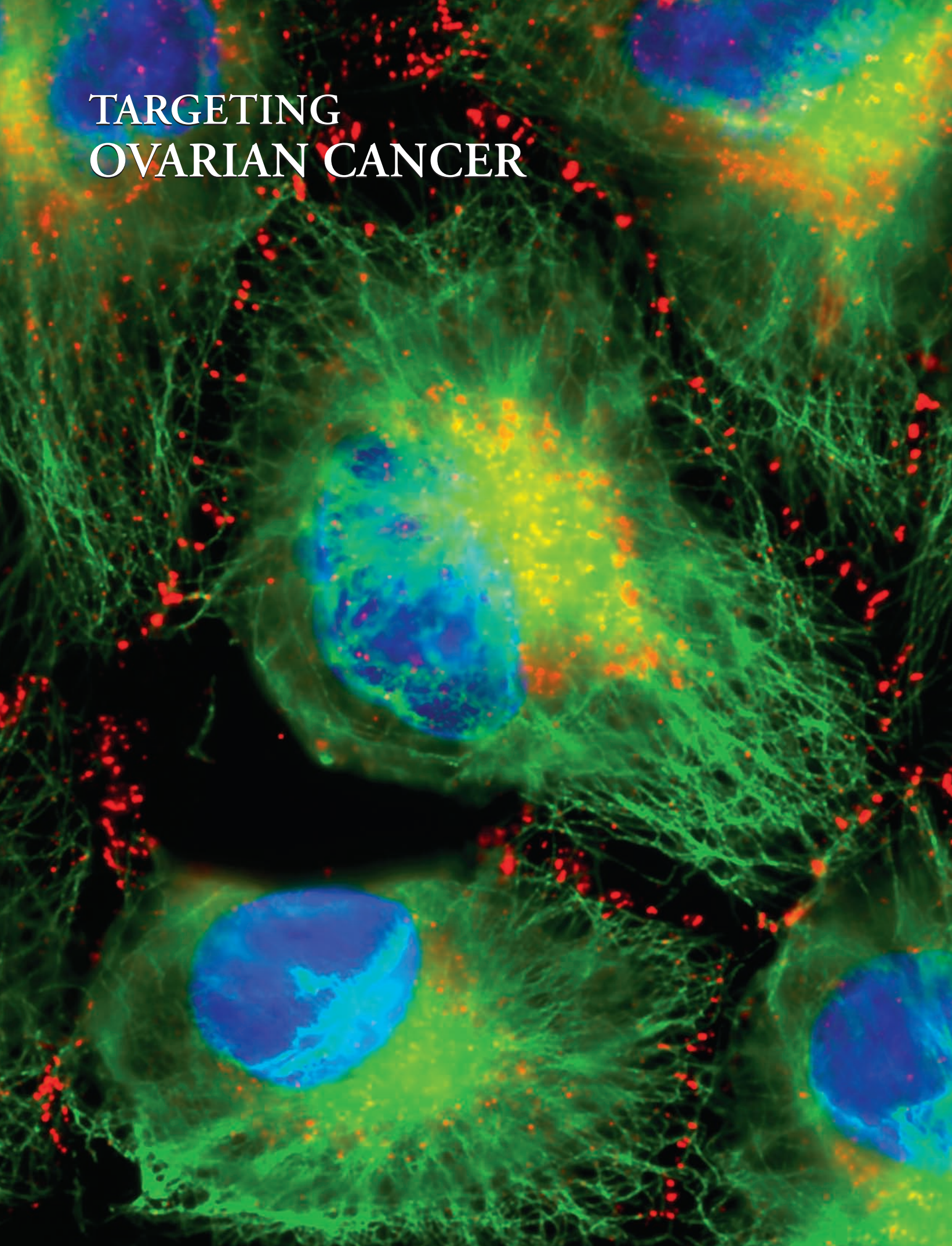
CHEMISTRY AND CANCER RESEARCH



Rebecca W. Alexander, Ph.D., *Wake Forest University*, is investigating protein-to-nucleic acid interactions that are fundamental to cellular processes in both normal and tumor cells. This research will provide scientists with more knowledge in designing new anti-bacterial and anti-fungal drugs that are particularly important to fight infections in cancer patients whose immune systems are often destroyed by radiation and chemotherapy.

Jacqueline K. Barton, Ph.D., *California Institute of Technology*, is understanding DNA charge transport chemistry with respect to how DNA is damaged and repaired. Dr. Barton's research allows a much clearer understanding of DNA damage—the first molecular step in cancerous transformation. This could lead to the development of new methods for early cancer diagnosis.

TARGETING OVARIAN CANCER



ROBERT C. BAST, JR.

Ovarian cancer is the leading killer among gynecologic cancers. This is because the ovaries are located deep in the pelvis, symptoms are often ambiguous and difficult to detect, even on pelvic examination. Too often ovarian cancer goes undiagnosed until after the disease is far advanced and spread throughout the abdomen. When diagnosed early, ovarian cancer can be cured in more than 90% of cases, but after it has metastasized, survival rates plummet. Chemotherapy will shrink a majority of ovarian cancers, leaving patients apparently cancer free. However, microscopic nests of drug resistant cancer cells oftentimes remain dormant—sometimes for years—before growing progressively to kill the patient.

NFCR Project Director, Robert C. Bast, Jr. M.D., is a world leader in ovarian cancer research. In 1981 he discovered CA125, the first clinically useful tumor biomarker for monitoring the course of patients with epithelial ovarian cancer. Today a blood test for CA125, in combination with transvaginal ultrasound and thorough pelvic exams, may help in diagnosing patients with ovarian cancer. But further research is needed to understand how to better use this biomarker in a clinical setting.

While many have decried the lack of attention and research funding to ovarian cancer, NFCR has devoted a great deal of energy and resources to give women reason to hope for new and better treatments for ovarian cancer. While there is as yet no new, approved tumor biomarker test for ovarian cancer to complement the CA125 biomarker, in the past 10 years there has been an explosion of research on ovarian cancer biomarkers and an explosion of knowledge on ovarian cancer. Much of this is being made possible by NFCR scientists at the M.D. Anderson Cancer Center in Houston, where Dr. Bast and his team are located. They are developing new biomarkers for the early detection of ovarian cancer as well as new methods to eliminate dormant drug resistant cancer cells.

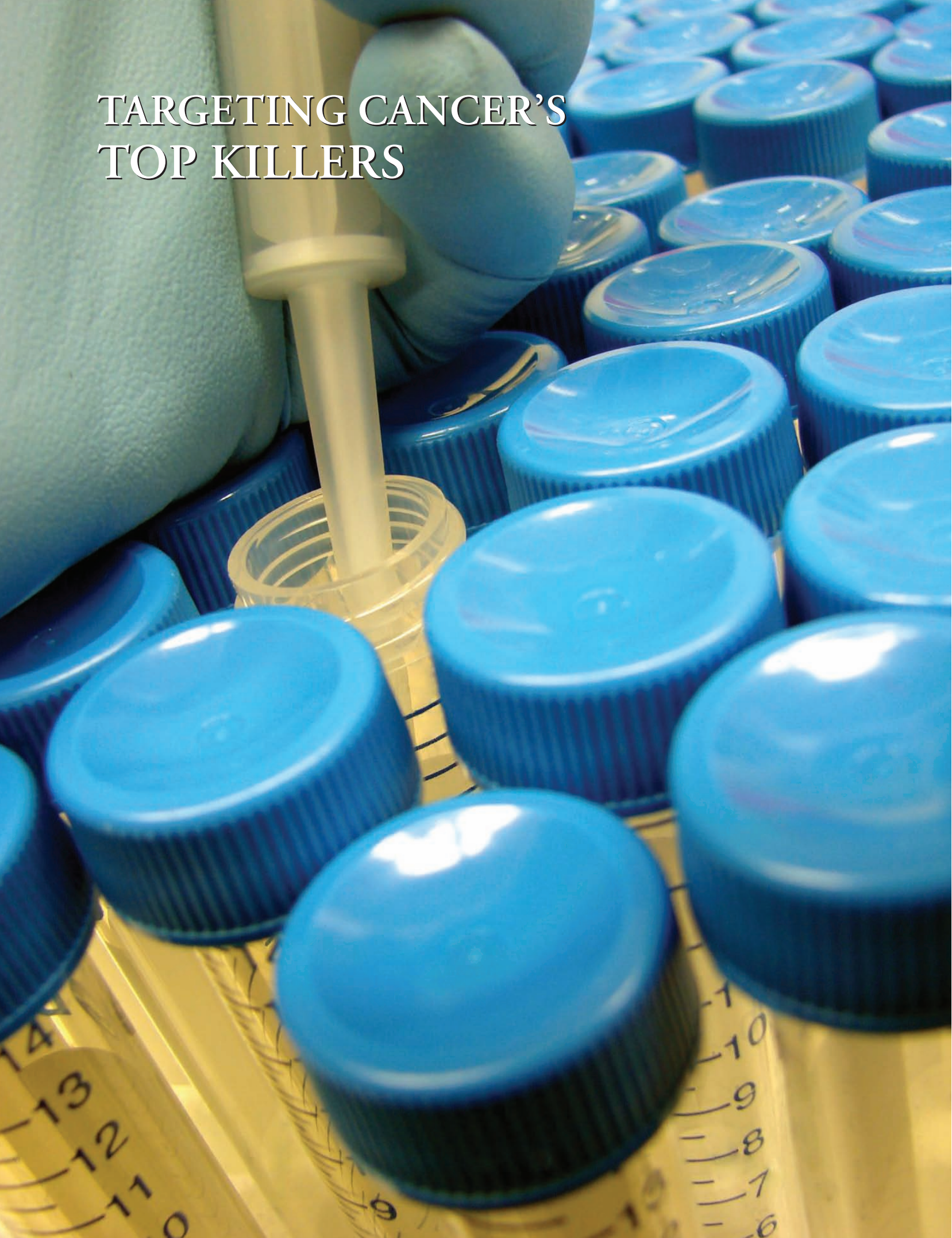
In addition to his efforts to develop essential tools for early detection and diagnosis of ovarian cancer, Dr. Bast is also focused on discovering new therapies that oncologists can use to treat ovarian cancer. With NFCR support over the past decade, Dr. Bast has pioneered research to define molecular alterations in ovarian cancer that might serve as targets for novel ovarian cancer therapies.

Specifically, Dr. Bast has discovered a tumor suppressor gene, *ARHI*, that can be detected in normal cells, but that is found at much lower levels in ovarian cancers. Without *ARHI*, cancer cells divide and spread. This is good news, for Dr. Bast found that by reactivating *ARHI* in cancer cells he could inhibit the growth and invasiveness of those cells. Even more encouraging is the discovery that there are drugs currently available that appear capable of brining *ARHI* back to life and may be useful in treating women with ovarian cancer. Dr. Bast discovered that decitabine, an anti-cancer drug for the treatment of myelodysplastic syndromes—helps reactivate the silenced *ARHI* gene, and may well be a new and effective therapy for patients with ovarian cancer.

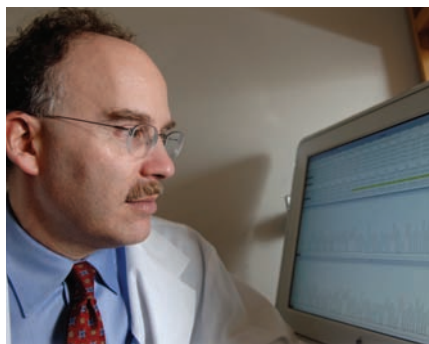
NFCR will continue to fund Dr. Bast's cutting-edge research, offering hope and promise to women with ovarian cancer—giving their doctors a new weapon with which to fight this lethal disease. "By understanding the biology of individual cancer cells and their interaction with other cells in the body, we will develop more effective approaches to eliminate ovarian cancer as a threat to all women," said Dr. Bast. This is what continuing support from the National Foundation for Cancer Research will make possible. This is what we mean by *research for a cure*.



TARGETING CANCER'S TOP KILLERS



In 2007, over 1,444,900 new cases of cancer were diagnosed, and 559,650 people died from it in the United States alone. Over half of all cancer deaths in the United States are caused by four types of cancer: lung, breast, prostate, and colorectal. Besides the research on other types of cancer, NFCR has developed a comprehensive approach to support promising research programs that target the four leading killers. NFCR helps bring scientists closer than ever to developing early diagnostic tools, discovering new cancer targets, and bringing more effective anti-cancer treatments to cancer patients.



Daniel Haber, M.D., Ph.D.

LUNG CANCER RESEARCH

Causing nearly one-third of all cancer deaths in the United States, lung cancer remains the number one killer among all types of cancer. NFCR provides funding to support nine outstanding scientists from around the world to find a cure for lung cancer. NFCR-supported research is focused on several critical areas, including chemoprevention, early diagnosis, molecular profiling for targeted therapies and personalized medicine, and the development of novel treatments such as virotherapy, and anti-RAS intracellular antibodies. Research breakthroughs in these areas will bring significant benefits to lung cancer patients, improving their survival rates and quality of life.

PROSTATE CANCER RESEARCH

More than 200,000 men are diagnosed with prostate cancer every year in the United States, and about 27,000 die from it. The 5-year survival rate for prostate cancer patients has dramatically increased to nearly 100%, largely due to recent advances in cancer research. However, once the cancer has spread, it can be fatal because there is no curative treatment available at this time. NFCR scientist Daruka Mahadevan, M.D.,

Ph.D., is testing a combination therapy that holds great promise for improved treatment. The NFCR Prostate Cancer Research Program has been greatly strengthened with the addition of two top researchers in this field. Howard Kaufman, M.D., is developing a promising gene therapy for the treatment of metastatic prostate cancer, and David Lyden, M.D., Ph.D., is exploring how bone marrow stem cells cause prostate cancer to grow and spread. Their critical and innovative research will lead to better strategies in predicting and treatment of prostate cancer.

BREAST CANCER RESEARCH

Breast cancer is the most frequently diagnosed cancer and the second leading cause of cancer death in women. NFCR supports breast cancer research in the laboratories of 11 leading scientists in this field. These scientists are on the frontline of multiple areas of breast cancer research, including the development of cutting-edge molecular imaging technology that will allow early diagnosis, unraveling the underlying mechanism of tumor resistance to taxol, developing nanocomplex drug delivery technology, researching new anti-cancer drugs for improved treatments, and establishing more effective strategies to stop metastasis, which kills more than 90% of breast cancer patients.



Daruka Mahadevan, M.D., Ph.D.



Sujuan Ba, Ph.D., and Mary-Claire King, Ph.D.

COLORECTAL CANCER RESEARCH

Colorectal cancer is the third leading cancer killer of both men and women in America. With NFCR's support, scientists I. Bernard Weinstein, M.D., Rakesh Jain, Ph.D., and Wei Zhang, Ph.D., are launching attacks on this deadly disease. Their research has already led to the discovery of new biomarkers for more accurate monitoring of drug efficacy, and has brought more potent therapies for treatment of colorectal cancer to the patient.

OTHER TYPES OF CANCER

NFCR scientists are also working around the clock to find more effective treatments for other types of cancer. Pioneering research is being conducted to fight pancreatic, ovarian, brain, liver, gastric, cervical, kidney, head and neck cancer, as well as leukemia, lymphoma, melanoma, soft tissue sarcoma, and many other types of cancer.

NFCR scientists are moving cancer research toward our ultimate goal—finding cures for cancer, *all types of cancer*.

ALBERT SZENT-GYÖRGYI PRIZE

Webster K. Cavenee, Ph.D. was awarded the 2nd Annual Albert Szent-Györgyi Prize for Progress in Cancer Research.

Dr. Cavenee, Director of the Ludwig Institute for Cancer Research, and Distinguished Professor at the University of California, San Diego, won the prize for his groundbreaking discoveries regarding the genetic mechanisms of predisposition to human cancer. Dr. Cavenee's research provided the first genetic evidence for the existence of tumor suppressor genes, one of the most influential breakthroughs in cancer research.

In presenting the award, Dr. Harold Dvorak of Beth Israel Deaconess Hospital and Chair of the Szent-Györgyi Prize Selection Committee, called Dr. Cavenee "a pioneer in the truest sense of the word. His research on tumor suppressor genes has not only advanced our understanding of cancer, but it also has provided valuable insight into the role that hereditary predisposition plays in developing cancer."

Dr. Cavenee's discoveries helped pave the way for researchers to better break down cancer's complicated molecular structures and understand the role that tumor suppressor genes play in cancer growth and development.

His original research, seeking to define the genetic lesions in retinoblastoma, led to the first hard experimental evidence for the existence of tumor suppressor genes in humans. This breakthrough confirmed the "two-hit hypothesis," fundamentally altering the way scientists think about the onset of cancer and its progression. Today, mutations of tumor suppressor genes have been identified in more than half of all tumors, including those of the muscle, melanocytes, kidney, prostate, and breast. Novel gene therapies to reverse gene mutations or their effects in cancer cells hold promise as cancer treatment strategies which could be of benefit to cancer patients.

"The Albert Szent-Györgyi Prize for Progress in Cancer Research means a great deal to the cancer research field, and I am humbled to have been selected by my peers to receive it. It is my hope that the discoveries I am being recognized for will have significant long-term impact on those patients who suffer from cancer around the world—that is the real prize," said Dr. Cavenee. "The support of the



Webster K. Cavenee, Ph.D.

National Foundation for Cancer Research over the years both for this Prize and for basic cancer research has been a vital part of many significant research discoveries."

Today, Dr. Cavenee is the Director of the Ludwig Institute for Cancer Research based at the University of California, San Diego (UCSD) and a Professor of Medicine in the cancer biology program at UCSD. He is a Fellow of the National Foundation for Cancer Research and has won many honors, including the Charles S. Mott Prize of the General Motors Cancer Research Foundation. He is a member of the National Academy of Sciences, a Past-President of the American Association for Cancer Research, a Fellow of the American Academy of Microbiology, and serves on the editorial boards of several journals. He has also served on the Board of both the Scientific Counselors of the National Cancer Institute and the National Institute of Environmental Health Sciences. Dr. Cavenee received his doctorate from the University of Kansas School of Medicine.

The Albert Szent-Györgyi Prize for Progress in Cancer Research was established by the National Foundation for Cancer Research in honor of its co-founder, Dr. Albert Szent-Györgyi, recipient of the 1937 Nobel Prize for Physiology and Medicine, for his study on vitamin C and cell respiration. Dr. Szent-Györgyi was a leading advocate for developing resources to provide scientists with the financial support necessary to pursue novel cancer research ideas. In 1973, he changed the face of cancer research funding

by co-founding the National Foundation for Cancer Research. Any scientist or individual may be nominated for the annual award by their peers and the winner is selected by a prize selection committee comprised of academic, scientific, business, and non-profit leaders highly qualified to review and select the Prize winner.

The 2nd Annual Albert Szent-Györgyi Prize selection committee was chaired by the inaugural prize recipient: Harold Dvorak, M.D. Committee members were Sujuan Ba, Ph.D. and Yi Michael Wang, M.D., Ph.D., National Foundation for Cancer Research; Dennis Carson, M.D., University of California, San Diego; Stanley Cohen, M.D., Stanford University; Carlo Croce, M.D., Ohio State University; Richard Gaynor, M.D., Eli Lilly; Rakesh Jain, Ph.D., Massachusetts General Hospital; Thea Tlsty, Ph.D., University of California, San Francisco; Daniel Von Hoff, M.D., FACS, TGen and Arizona Cancer Center; and, Bruce Zetter, Ph.D., Children's Hospital Boston.



Robert Weinberg, Ph.D., Harold Dvorak, M.D.

GLOBAL COLLABORATION

BIOMARKERS: REVOLUTIONIZING CANCER THERAPY AND DIAGNOSTICS

With the growing and urgent need for biomarker profiling and validation in cancer research today, the Consortium for Clinical Diagnostics (CCDx) is a partnership of scientists at research institutions and biopharmaceutical companies dedicated to facilitating genomic research and diagnostics. CCDx provides a centralized infrastructure and expertise in genomics and molecular imaging as well as translational medicine. The Consortium provides key capabilities in all aspects of predictive medicine including identification and validation of disease susceptibility genes and genetic signatures, pharmacogenomics, and the development of medical response tests as well as new and improved diagnostic tests—especially in the area of cancer.

PROGRAM OF ACTION FOR CANCER THERAPY

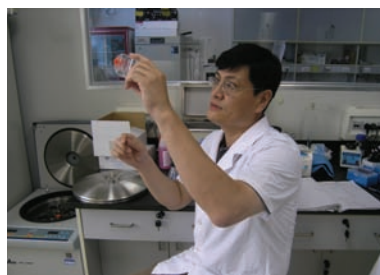


*Leslie and Michael Rosenthal, Ph.D.,
Massoud Samiei, Ph.D., Director of PACT,
and Sujuan Ba, Ph.D., COO of NFCR*

Today, in developing countries, cancer kills more than HIV-AIDS, malaria, and tuberculosis combined. And while mortality rates for the latter three are coming down, deaths from cancer are increasing. In 2007, the International Atomic Energy Agency (IAEA) expanded its Program of Action for Cancer Therapy (PACT) in partnership

with NFCR to enable developing countries to provide patients with novel and effective cancer treatments. NFCR enables donors in the U.S. to help PACT deliver cancer treatment integrated with prevention, screening radiotherapy, and palliative care to patients in developing countries

JOINT TISSUE BANKING FACILITY



*Michael Wang, M.D., Ph.D., NFCR
Chief Science Officer*

Tissue preserved in a tissue bank is the single most valuable resource for cancer researchers. Genetic data from cancer tissue, coupled with the development of technologies to assay these molecules and pathways in patients, is revolutionizing modern cancer treatments. Working in partnership with the Tianjin Medical University Cancer Institute and Hospital in China, scientists from NFCR have established the Joint Tissue Banking Facility to provide high quality cancer tissue to researchers around the globe who are seeking to gain a deeper understanding of the role of specific genes, proteins, pathways, and networks in cancer. NFCR has established a steering committee of leading scientists from universities and research hospitals in the United States and China to ensure that the tissue bank operates in total compliance with the highest international standards. At its third annual meeting in 2007, the steering committee initiated several important research projects which may well

lead to important new and significant breakthroughs in cancer treatment.

CANCER PROGRESS 2007

NFCR was a proud sponsor of the 18th Annual Cancer Progress Conference in New York City. A premier cancer forum for bio/pharmaceutical executives and investors alike, the Cancer Progress conference focuses primarily on breakthroughs in cancer research leading to novel treatments and therapies. NFCR scientists join top oncology-focused executives and leading financial analysts at this conference to address new approaches and strategies for accelerating progress towards a cure for cancer.

INSTITUTE FOR CLINICAL RESEARCH EXCELLENCE



*Sujuan Ba with Qimin Zhan, Vice
President, Chinese Academy Medical
Sciences*

As an adjunct to our translational research efforts, the NFCR Institute for Clinical Research Excellence supports clinical trial research and training at the Yale Medical School, the M.D. Anderson Cancer Center, and the Mayo Clinic. The 2007 inaugural class of five senior clinicians completed training at the Mayo Clinic and have returned to their respective research hospitals where they will commence clinical trials under the aegis of this program.

TAKING ACTION AGAINST CANCER

Donor-initiated special events have a long history with NFCR. They are great ways to show support for cancer research and turn a passion to cure this disease into action. Volunteers from across the country have organized many events and activities to help raise funds and awareness for NFCR's cutting-edge cancer research programs. From golf to tennis to concerts, NFCR supporters are taking action to fight cancer.

DAFFODILS AND DIAMONDS



Every Spring, over 400 women from across the Washington, DC metro area gather to attend the *Daffodils and Diamonds* luncheon at the Congressional Country Club in Bethesda, MD. This year's event was sponsored by Lord & Taylor's (and many other local companies) and featured a fashion show along with presentations made by cancer survivors. NFCR Project Director, Robert Bast, M.D., from M.D. Anderson Cancer Center was the featured speaker providing updates on the latest research discoveries in ovarian cancer. This annual event is a great boost to our efforts and has become a staple of support for NFCR's work against a number of women's cancers.



Robert Bast and Malinda Lindsay



Sujuan Ba and Carol Fettig

4TH ANNUAL D.C. GOLF FOR A CURE

Teeing off against cancer, more than 100 golfers came out to support NFCR at the 4th Annual *Golf for a Cure* tournament at the Kenwood Country Club in Bethesda, MD. This annual event continues to grow in both sponsors and players and has developed into one of the region's premier golf scramble tournaments, while raising over \$30,000 to help fight cancer.



Sarah Funt with NFCR COO Sujuan Ba and Yuying Yang.



Foursome playing at the NFCR Golf Tournament at the Kenwood Country Club.

COOKING FOR CANCER RESEARCH

The third annual *Cooking for Cancer Research* took place in Waco, TX and was a success. Rounding up more than 500 attendees and supporters from across the Waco-area, organizers of the event not only raised money to help us fight cancer, but they also raised awareness of the need to take action to prevent cancer. Skin cancer screenings, educational information about cancer prevention strategies provided as part of this wonderful event were covered by the local papers, as well as being a topic of discussion on local radio stations.

HOPE FUND FOR SARCOMA RESEARCH

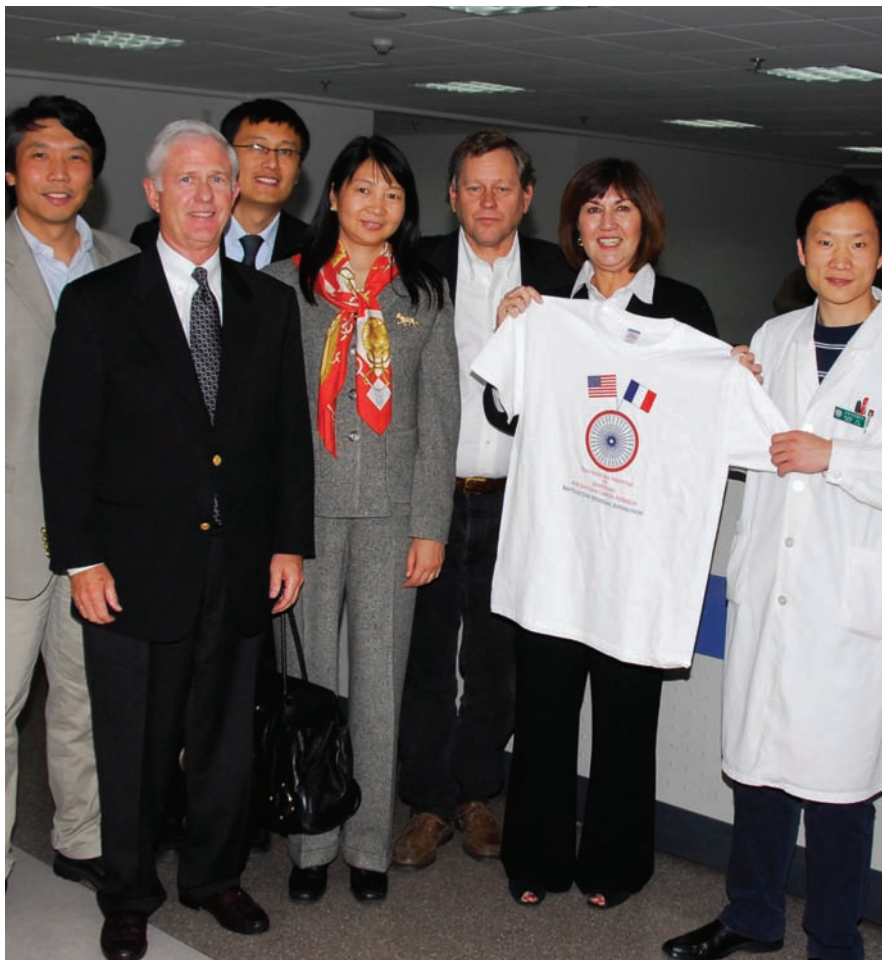
MARIANNE AND KEN BOULDIN, NASHVILLE, TN

In May 2005, Marianne and Ken Bouldins daughter, Jen, was diagnosed with Malignant Peripheral Nerve Sheath Tumor (MPNST), a rare and dangerous soft tissue sarcoma. Following her diagnosis, Jen proceeded rapidly through surgery, chemotherapy, and radiation. Her fair skin was rendered bright red from the steroids; the dizziness and nausea left her weak. Marianne Bouldin could only watch as the chemo drugs drained into Jen, sometimes for as long as 8 hours a day. The Bouldin's were alarmed by the frightening statistics associated with soft tissue sarcomas and terrified for their daughter. Together, they confronted a new imperative: the need for sarcoma research. They founded the Hope Fund at NCFR dedicated to Soft Tissue Sarcoma research.

The Hope Fund gives scientists critical support for innovative research that, hopefully, will lead to the discovery of new and improved sarcoma therapies. Marianne says their mission "is to fund innovative sarcoma research projects which hold the best opportunity for success... and the more knowledge we gain, the better our opportunity to find a cure."

The Hope Fund is currently supporting a two-year project led by Dina Lev, M.D., at the M.D. Anderson Cancer Center, as well as a high powered international collaboration led by Wei Zhang, Ph.D., also at the M.D. Anderson Cancer Center. The team of collaborators includes Jonathan Trent, M.D., Ph.D. and Raphael Pollock, M.D., Ph.D., Director of the Sarcoma Center, at the M.D. Anderson Cancer Center, as well as Jilong Yang, M.D., and Kexin Chen, M.D., Ph.D., Director of the Joint Tissue Bank, at the Tianjin Cancer Institute and Hospital.

Both of these projects focus on systematic molecular and genetic analyses of Soft



Wei Zhang, Ph.D., Ken Bouldin, Sujuan Ba, Ph.D., Web Cavenee, Ph.D. and Marianne Bouldin

Tissue Sarcomas, MPNST in particular. By improving our understanding of the root causes of these aggressive cancers, this research could lead to the identification of new biomarkers and novel molecular targets for early diagnosis and improved therapies for this rare but deadly group of diseases.

This May she will celebrate her birthday with her parents and friends to support research that will lead to new and better treatments for Soft Tissue Sarcomas.



Dina Lev, M.D.

FINANCIALS

National Foundation for Cancer Research, Inc. and Affiliates Consolidated Statement of Financial Position, September 30, 2007

Assets

Cash and cash equivalents	\$1,050,848
Accounts receivable	201,334
Bequests receivable	469,365
Prepaid expenses and other assets	291,243
Furniture and equipment, net of accumulated depreciation	119,936
Investments	9,363,992
Amounts held in trust by others	1,956,897
Total Assets	\$13,453,615

Liabilities and Net Assets

Liabilities	
Accounts payable and other liabilities	\$ 740,088
Research grants and contracts payable	2,006,030
Accrued compensation and benefits	175,810
Deferred revenue	2,935
Total Liabilities	\$2,924,863
Net Assets	
Unrestricted	
Designated for research	\$ 6,085,728
Undesignated	916,768
Total unrestricted	\$ 7,002,496
Temporarily restricted	1,842,627
Permanently restricted	1,683,629
Total Net Assets	\$10,528,752
Total Liabilities and Net Assets	\$13,453,615

FINANCIALS

National Foundation for Cancer Research, Inc. and Affiliates Consolidated Statement of Activities for the year ended September 30, 2007

Revenue and Support

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Public support	\$11,622,755	\$822,218	\$ —	\$12,444,973
Bequests	2,904,229	25,000	—	2,929,229
Noncash support	1,332,494	—	—	1,332,494
Mailing list rentals	565,352	—	—	565,352
Net investment income	1,110,936	1,564	—	1,112,500
Change in value of split-interest agreements	(17,346)	19,481	125,502	127,637
Other revenue	125,156	—	—	125,156
Net assets released from restrictions	826,486	(826,486)	—	—
Total Revenue and Support	\$18,470,062	\$41,777	\$125,502	\$18,637,341

Expenses

Program services				
Research	\$6,331,394	\$ —	\$ —	\$6,331,394
Public education and information	6,278,486	—	—	6,278,486
Total Program Services	\$12,609,880	\$ —	\$ —	\$12,609,880
Supporting services				
Fundraising	\$4,545,402	\$ —	\$ —	\$4,545,402
Management and general	1,005,374	—	—	1,005,374
Total Supporting Services	\$5,550,776	\$ —	\$ —	\$5,550,776
Total Expenses	\$18,160,656	\$ —	\$ —	\$18,160,656
Change in Net Assets	\$309,406	\$41,777	\$125,502	\$476,685
Net Assets, Beginning of Year	6,693,090	1,800,850	1,558,127	10,052,067
Net Assets, End of Year	\$7,002,496	\$1,842,627	\$1,683,629	\$10,528,752

To receive a copy of NFCR's Financial Statements and Schedule for September 30, 2007 (with independent Auditor's Report) from the auditing firm of Squire, Lemkin + O'Brien, LLP, please call us at 1-800-321-CURE (2873) or visit our website, www.NFCR.org.

EXTRAORDINARY SUPPORT

THE NFCR LEGACY SOCIETY: DONORS COMMITTED TO THE CONQUEST OF CANCER

The Legacy Society recognizes donors who have chosen to create a substantial legacy in cancer research by leaving a gift to NFCR through their estate, or by utilizing other planned gift vehicles to support NFCR's cutting-edge cancer research. We are grateful to these donors for their dedication and foresight, and are proud to recognize them through membership in the NFCR Legacy Society.

Members of the Legacy Society may designate their gifts to NFCR in general, to a specific NFCR research program, for work focused on a specific cancer type, or to a favored aspect of cancer research.

Estate gifts are made through a will or trust. Planned gifts are generally made from a donor's assets. Important financial, tax, and estate planning goals should be taken into

consideration as such commitments are made in order to maximize the benefit to both the donor and NFCR. Therefore, NFCR encourages donors to consult with their tax or legal advisors before making a planned gift commitment. Inquiries from advisors are welcome.

Enrollment in the NFCR Legacy Society is simply a matter of advising NFCR of the creation of a legacy gift: a bequest in a will or through a living trust, designation of NFCR as a beneficiary of a retirement plan or IRA, an investment or savings account, or a life insurance policy. Society members receive invitations to special, Legacy Society events, as well as frequent cancer updates from NFCR containing information on the newest developments in the fight against cancer. We, of course, honor requests for

donor anonymity, but hope that by sharing the names of our generous Legacy Society donors, others will be inspired to join them and make their own lasting contribution to cancer research.

We are honored to recognize the members of the NFCR Legacy Society and express our sincere appreciation for their support on behalf of cancer patients the world over who will benefit from their generous legacy gifts.

*List of NFCR Legacy Society Members can be found at [www.NFCR.org](http://www.nfcr.org) <<http://www.nfcr.org>>

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A CURE FOR CANCER

ALL TYPES OF CANCER

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