



Daniel D. Von Hoff, MD
Director

RESEARCH for
A **cure**
basic science



MISSION STATEMENT

The National Foundation for Cancer Research was founded in 1973 to support basic science cancer research at the molecular and submolecular levels. We believe the solution to the cancer problem lies in supporting the best ideas of the best minds, using the skills of many scientific disciplines. By encouraging and facilitating collaboration and the sharing of ideas and results among our project directors, advances in one field contribute to progress in another. We call this our "laboratory without walls."

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RESEARCH for A Cure *basic science*



NFCR President, Franklin Salisbury, Jr.
discusses the latest developments in
tumor treatment and cancer research
with **NFCR Project Director**
Dr. Esther Chang at **Georgetown**
University's Lombardi Cancer Center.

I am pleased to present you with the National Foundation for Cancer Research 1998 Annual Report.

As you know, understanding what causes cells to become cancerous in the first place is fundamental to finding a cancer cure. That is why NFCR has committed itself since 1973 to supporting basic science research that probes cancer at the molecular level.

With expertise in disciplines such as computational science, chemistry, cell biology, molecular genetics, oncology, and immunology, NFCR's Project Directors reflect our belief in a "laboratory without walls" where all branches of science are marshaled against cancer.

In 1998, NFCR commemorated more than two decades of work with a 25th Anniversary Conference titled Basic Science: Research for a Cure and Prevention. At this meeting, leaders from the scientific community assembled to recognize NFCR's role in helping develop and improve ways to treat, prevent, and one day cure cancer.

Reflecting on the conference, I am proud that many of the scientists who attended were able to forge new relationships with specialists from other fields — relationships that will hopefully lead to a true cancer cure.

Within the pages of this annual report, you will see how the generous financial contributions of NFCR's supporters sustain the collaborative and innovative discovery research of our Project Directors — who study cancer and its root causes in six countries around the world.

While NFCR's work may not be glamorous or headline-grabbing, I can assure you that continued support of our basic science research mission and our Project Directors is absolutely critical if we are to solve the molecular mysteries of cancer.

Despite misleading reports in the news trumpeting so-called "cures," much research still remains to be done if we are to stop cancer, which will take 500,000 lives this year and soon surpass heart disease as the number one killer in America.

So as we turn our attention to the future, there is little doubt that continued diligence and dedication to basic science cancer research are needed to stop this deadly disease. With this in mind, I look ahead with hope that NFCR researchers will ultimately cure cancer in our lifetime.

Sincerely,

Franklin C. Salisbury, Jr.
President

RESEARCH for A *cure* *Daniel Von Hoff, MD*



Daniel Von Hoff, MD, of the University of Texas Institute for Drug Development, seeks the “Penicillin for Cancer.”

At the University of Texas Health Science Center, NCCR Project Director Dr. Daniel Von Hoff of the Institute for Drug Development searches for what he calls the “penicillin for cancer.”

Dr. Von Hoff hopes that the location of specific genetic targets on tumor cells and the creation of new drugs to reach these sites will act like penicillin, the antibiotic that revolutionized the treatment of infectious diseases. We will literally be able to turn off the process that makes tumor cells multiply and grow.

At the heart of Dr. Von Hoff’s innovative work is basic science research, which he regards as the root of all discovery and the driving force behind lifesaving measures such as the mammogram.

Thanks to basic science — as well as more effective drug therapies and improved chemotherapy regimens — Dr. Von Hoff sees hope for cancer patients, particularly now that the death rate for breast and colon cancers has decreased for the first time in thirty years.

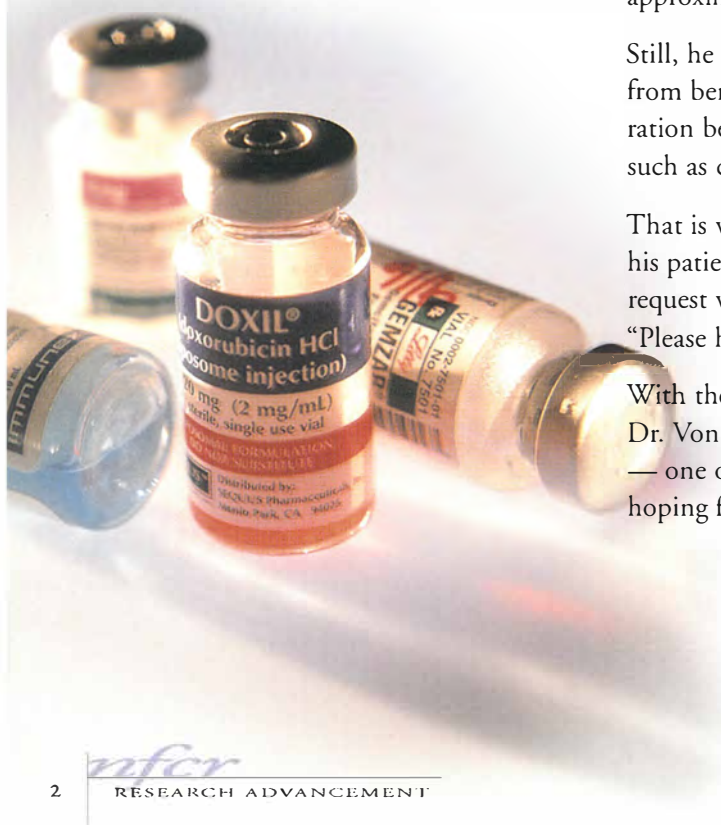
Moreover, the pace of new drug development continues to quicken. In the past, it took fourteen long years for a drug to reach patients from the time of its first discovery.

Due to improvements in pharmaceuticals, accelerated review processes by the Food and Drug Administration, and supercomputers that can create models of new compounds in one day instead of six months, Dr. Von Hoff says the time required to deliver the latest drug treatments to patients has been cut to approximately five years.

Still, he feels that more must be done to speed new discoveries from bench to bedside — and that there should be greater collaboration between clinicians like himself and basic scientists in fields such as chemistry and molecular biology to find a cancer cure.

That is why he asks fellow researchers to heed the words of one of his patients, who before succumbing to cancer, made one poignant request while meeting with a group of leading scientists: “Please hurry.”

With the support of the National Foundation for Cancer Research, Dr. Von Hoff will soon begin clinical trials with eight new drugs — one of which may be the “penicillin for cancer” we are all hoping for.





RESEARCH for A Cure *laboratory without walls*

Since 1973, the National Foundation for Cancer Research has provided over 160 million dollars for basic science research to distinguished scientists representing 135 research projects in twenty countries. We are proud that seven NFCR supported scientists have been awarded Nobel Prizes, including the 1989 Nobel Prize in Chemistry. The groundbreaking research has been possible because of the support from individual donors for our scientific program.

Our current scientific program is unsurpassed. Working in NFCR's Laboratory Without Walls, NFCR Project Directors listed here are at the forefront of the research world. We are confident that the cure for cancer will be found in these laboratories.



Jacqueline Barton, PhD



Curt Civin, MD

BRUCE N. AMES, Ph.D.

*University of California
Berkeley, California*

"Vitamins B₁₂ and Folic Acid in Cancer Prevention"

Investigates the role of vitamin B₁₂ in minimizing DNA damage in humans as an extension of our previous work on folate deficiency as a major contributor to DNA damage.

JACQUELINE BARTON, Ph.D.

*California Institute of Technology
Pasadena, California*

"Recognition of DNA Sites with Metal Complexes"

Regulation of gene expression by designing peptides to recognize and interact with specific segments of DNA.

FREDERICK F. BECKER, M.D.

*University of Texas
M.D. Anderson Cancer Center
Houston, Texas*

"Cell Surface Alterations in Cancer Control"

Identification of electrical charge differences in the membranes of cancer and normal cells may result in new and more effective cancer therapies.

STEPHEN J. BENKOVIC, Ph.D.

*Pennsylvania State University
University Park, Pennsylvania*

"Enzymes in Nucleotide Biosynthesis and DNA Replication"

Studying the role of specific enzymes in the production of DNA and RNA.

ESTHER H. CHANG, Ph.D.

*Georgetown University
Washington, DC*

"Modulation of the Radiation-Resistant Phenotype of Tumor Cells by Sequence-Specific Antisense Oligonucleotides"

Investigating the molecular basis of tumors being resistant to radiation therapy.

CURT I. CIVIN, M.D.

*Johns Hopkins University
Baltimore, Maryland*

"Transduction of Human Hematopoietic Stem Cells"

Using the human-immunodeficient mouse (hu/mu) hematopoietic chimera model system to investigate the possibility of using novel conditionally replicating lentivirus vectors for efficient transduction of genes into human hematopoietic stem cells.

YUNG-CHI CHENG, Ph.D.

*Yale University
New Haven, Connecticut*

"Pleiotropic Drug Resistance-DNA Exonuclease"

The recent discovery of a new DNA (genetic) repair enzyme may result in new treatments to prevent resistance of cancer cells to anticancer drugs.

HECTOR F. DELUCA, Ph.D.

*University of Wisconsin-Madison
Madison, Wisconsin*

"Vitamin D Analogs as Anti-Leukemia Agents/Biochemical Basis of Chemical Carcinogenesis"

Creating non-toxic forms of Vitamin D for treatment of leukemia and other cancers.

PETER B. DERVAN, Ph.D.

*California Institute of Technology
Pasadena, California*

"Studies on Protein-DNA Recognition"

Investigation of the chemical basis for the specificity of protein binding to DNA.

HAROLD F. DVORAK, M.D.

*Beth Israel Deaconess Medical Center
Boston, Massachusetts*

"Tumor Secreted Mediators and the Tumor Microenvironment"

Demonstrated that solid tumors need a grid (collagen, blood, fibrin) to spread and grow.

DONALD M. ENGELMAN, Ph.D.

*Yale University
New Haven, Connecticut*

"Receptor Interactions within Membrane Bilayers"

This study of cancer cell membrane functions will lead to new and more effective anticancer therapies.

**IVAR GIAEVER, Ph.D.,
NOBEL LAUREATE**
*Rensselaer Polytechnic Institute
Troy, New York*
"Cell Substrate Interaction"

Studying the interaction of normal and cancer cells and why cancer cells spread and move about the body. Developed an "electrified petri dish" which lets researchers monitor the slightest motions.

CSABA HORVATH, Ph.D.
*Yale University
New Haven, Connecticut*
"High-Resolution Separation of Glycoconjugates"

High performance liquid chromatography is a new and novel technology which may result in new laboratory tests of earlier detection and therefore higher cure rates for many cancers.

KATHRYN HORWITZ, Ph.D.
*University of Colorado
Denver, Colorado*
"The Molecular Biology of Progesterone Action in Breast Cancer"

Learning how female hormones influence the growth of some cancers will result in new laboratory tests for earlier detection and higher cure rates for breast cancer.

KEITH U. INGOLD, Ph.D.
*Steacie Institute for Molecular Sciences
Ottawa, Canada*
"Antioxidants in Normal and in Tumor Tissues"

Understanding how the antioxidant vitamins C, E, and betacarotene are used by the body will advance knowledge of how some cancers may be prevented.

**SIR AARON KLUG, Ph.D.,
NOBEL LAUREATE**
*MRC Laboratory of Molecular Biology
Cambridge, England*

"The Role of Chromosome Translocations in Development of Human Leukemia"

Examining how oncogene activation causes tumor development and ways to inhibit their action.

JANOS LADIK, Ph.D.
*Universitat Erlangen-Nurnberg
Erlangen, Germany*

"Quantum Mechanical Investigation of the Electronic Structure of Proteins and DNA and their Interactions, the Effect of Chemical Carcinogens on the Activation of Oncogenes"

WAYNE A. MARASCO, M.D., Ph.D.
*Dana-Farber Cancer Institute
Boston, Massachusetts*

"Mechanism of Transformation of Human Lymphocytes by the HTLV-1 Virus"

Studying the mechanism by which the human T-cell leukemia virus (a retrovirus) transforms human lymphocytes. If successful this work may lead to the first gene therapy to treat adult T-cell leukemia.

THOMAS C. MERIGAN, M.D.
*Stanford University School of Medicine
Stanford, California*
"Studies of the Immuno-Pathogenesis of AIDS Related Lymphoma"

Analyzing immunologic changes at different stages of the disease which may determine which AIDS patients may also get lymphoma.

**CESAR MILSTEIN, Ph.D.,
NOBEL LAUREATE**
*Medical Research Council
Cambridge, England*
"Site-Directed Modification of Genes of the Immune System"

Using gene targeting techniques to develop transgenic mice with genetic mutations suspected of causing human T-cell leukemia.

GARTH L. NICOLSON, Ph.D.
*Institute for Molecular Medicine
Irvine, CA*

"Cancer Invasion and Metastasis-Associated Heparanase"

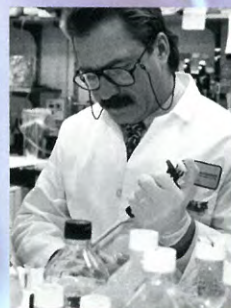
This project is developing tumor specific chemical markers which will result in new laboratory tests for early identification of tumors which are prone to spread.



Ivar Giaever, PhD



Sir Aaron Klug, PhD



Wayne Marasco, MD, PhD



Cesar Milstein, PhD

laboratory
without walls

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RESEARCH for A CURE

laboratory without walls

RONALD PETHIG, D.Sc.

University of Wales

Bangor, Gwynedd, Wales

"Dielectric and Electrochemical Properties of Cell Membranes"

A newly developed optical technique makes it possible to measure and compare the electrical charge differences between cancer and normal cells, which could result in more effective strategies for new cancer therapies.



W. Graham Richards, MD



Leo Sachs, PhD

ILYA PRIGOGINE, D.E.S.,

NOBEL LAUREATE

University of Texas

Austin, Texas

*Instituts Internationaux de Physique et de Chimie Solway
Brussels, Belgium*

"Theoretical and Experimental Study of Tissue Growth and Immune System Regulation"

Studies on how the surface of tumors affects the cellular immune response to cancer cells.

MANFRED F. RAJEWSKY, M.D.

University of Essen

Essen, Germany

"Chemically-Induced Tumorigenic Conversion of Cells in the Developing Nervous System; Structural DNA Modifications and Repair, and Early Cell Lineage-Specific Gene Alterations"

The detection of specific gene mutations in brain tumors offers new hope for the development of more effective therapies for these difficult to treat cancers.

ALEXANDER RICH, M.D.

Massachusetts Institute of Technology

Cambridge, Massachusetts

"Nucleic Acid Structure and Carcinogenesis"

Using X-ray diffraction analysis to determine the three-dimensional structure of biological molecules with some considerable emphasis on the nucleic acids, the major information carriers of biological systems.

W. GRAHAM RICHARDS, D.Sc.

Oxford University

Oxford, England

"Design of Anticancer Drugs"

Computer graphics now permit the molecular modeling and design of powerful new anticancer drugs which will destroy tumor cells without harming other normal tissue cells.

**ROBERT D. ROSENBERG, M.D.,
Ph.D.**

Beth Israel Deaconess Medical Center

Boston, Massachusetts

"The Role of Heparin Markers in the Regulation of Cell Growth"

The recent discovery of specialized tissue cells which produce heparin-like substances which inhibit or slow tumor cell growth may result in new strategies for treating cancers.

LEONARD ROSENTHAL, Ph.D.

Georgetown University

Washington, D.C.

"Herpesviruses (HCMV and HHV-6) and their Association with AIDS and Malignant Disease"

Defining the role of herpesviruses HCMV and HHV-6 as co-factors in the progression of AIDS and its association with Kaposi's sarcoma.

LEO SACHS, Ph.D.

Weizmann Institute of Science

Rehovot, Israel

"The Reversibility of Malignant Cell Transformation"

The laboratory's discovery that natural proteins called colony stimulating and maturation factors regulate the growth of white blood cells and can cause blood cancer cells to become normal suggests new approaches to cancer treatment.

RAMASWAMY SARMA, Ph.D.

State University of New York at Albany

Albany, New York

"Structure and Dynamics DNA-Drug Complexes"

Using innovative magnetic resonance imaging technology to study the shape of DNA (genetic) molecules will enhance the development of new and more effective anticancer drugs.



Ronald Pethig, DSc



Robert Rosenberg, MD, PhD

ALANNA SCHEPARTZ, Ph.D.

*Yale University
New Haven, Connecticut*

"Non-Natural Metalloregulated, AP-1 Site-Specific DNA Binding Peptides"

Developing a new class of anti-sense molecules to control gene expression and inhibit genes that cause cancer.

HAROLD A. SCHERAGA, Ph.D.

*Cornell University
Ithaca, New York*

"Molecular Recognition"

Investigating the structure and function of growth factors using molecular modeling and NMR analysis. Has solved the 3-D structure of epidermal growth factor.

PAUL SCHIMMEL, Ph.D.

*Massachusetts Institute of Technology
Cambridge, Massachusetts*

"Peptide Motifs for RNA Interactions"

This project is focused on the investigation of peptide elements which interact with RNA motifs used in decoding of genetic information.

PRAVINKUMAR SEHGAL, M.D., Ph.D.

*New York Medical College
Valhalla, NY*

"Interleukin-6 in Cancer"

Showed Interleukin-6 and Interferon B-2 to be the same and is conducting a small clinical trial of Interleukin-6 that is showing promise.

HELMUT SIES, M.D.

*Heinrich-Heine-Universität
Düsseldorf, Germany*

"Biological Significance of Peroxidation Reactions"

From this study additional information will be obtained on how certain antioxidant nutrients (Vitamin E, betacarotene) may prevent certain cancers.

JEFFREY L. SKLAR, M.D., Ph.D.

*Brigham and Women's Hospital
Boston, Massachusetts*

"Molecular Genetic Analysis of Tumor Spread in Malignant Gliomas of the Brain"

Determining pattern of spread in brain tumors by tracing genetic mutations from the primary tumor.

MARTYN SMITH, Ph.D.

*University of California, Berkeley
Berkeley, California*

"Anti-Sense Manipulation of Genes Involved in Leukemia and Other Cancers"

Like a guided missile of smart bombs, anti-sense drugs can be designated to home in and destroy specific cancer causing genes. This concept could introduce revolutionary new cancer treatments.

DANIEL D. VON HOFFE, M.D.

*University of Texas Health Science Center
San Antonio, Texas*

"Intermediates in Gene Amplification"

Discovered that extra chromosomal genetic material (episomes) can make tumors drug resistant and that hydroxyurea can destroy the episomes.

I. BERNARD WEINSTEIN, M.D.

*Columbia University
New York, New York*

"Carcinogens, Oncogenes, and Human Cancer Causation"

Studying the cellular and molecular mechanisms by which chemicals in the environment and our diet cause cancer.

DANNY R. WELCH, Ph.D.

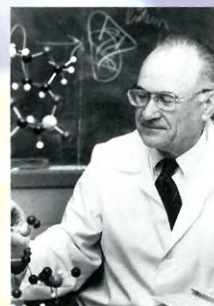
*Pennsylvania State University College of Medicine
Hershey, Pennsylvania*

"Hormonal Regulation of Breast Cancer Metastasis"

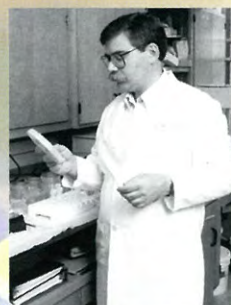
Identified the presence of genes that suppress the ability of breast cancer cells to metastasize. Evaluating how these genes are regulated by hormones and how these genes work.



Alanna Schepartz, PhD



Harold A. Scheraga, PhD



Jeffrey Sklar, MD, PhD



I. Bernard Weinstein, PhD

laboratory
without walls

RESEARCH for A *cure* *Esther Chang, PhD*

For a cancer sufferer, there is no greater fear than learning that their illness is spreading at rapid speed.

That's why NFCR Project Director Dr. Esther Chang is looking deep into the genetic structure of the human cell to find new therapies to combat deadly cancer tumors that are metastasizing or spreading to secondary locations in the body.

Recently, Dr. Chang and her research team at Georgetown University's Lombardi Cancer Center in Washington, D.C. have made significant progress against these secondary tumors, which frequently resist standard radiation or chemotherapies and cause thousands of cancer deaths.



By introducing genes into the body that weaken the defense mechanisms of tumor cells, Dr. Chang has uncovered a key which may help patients suffering from cancers that are spreading to other parts of their body.

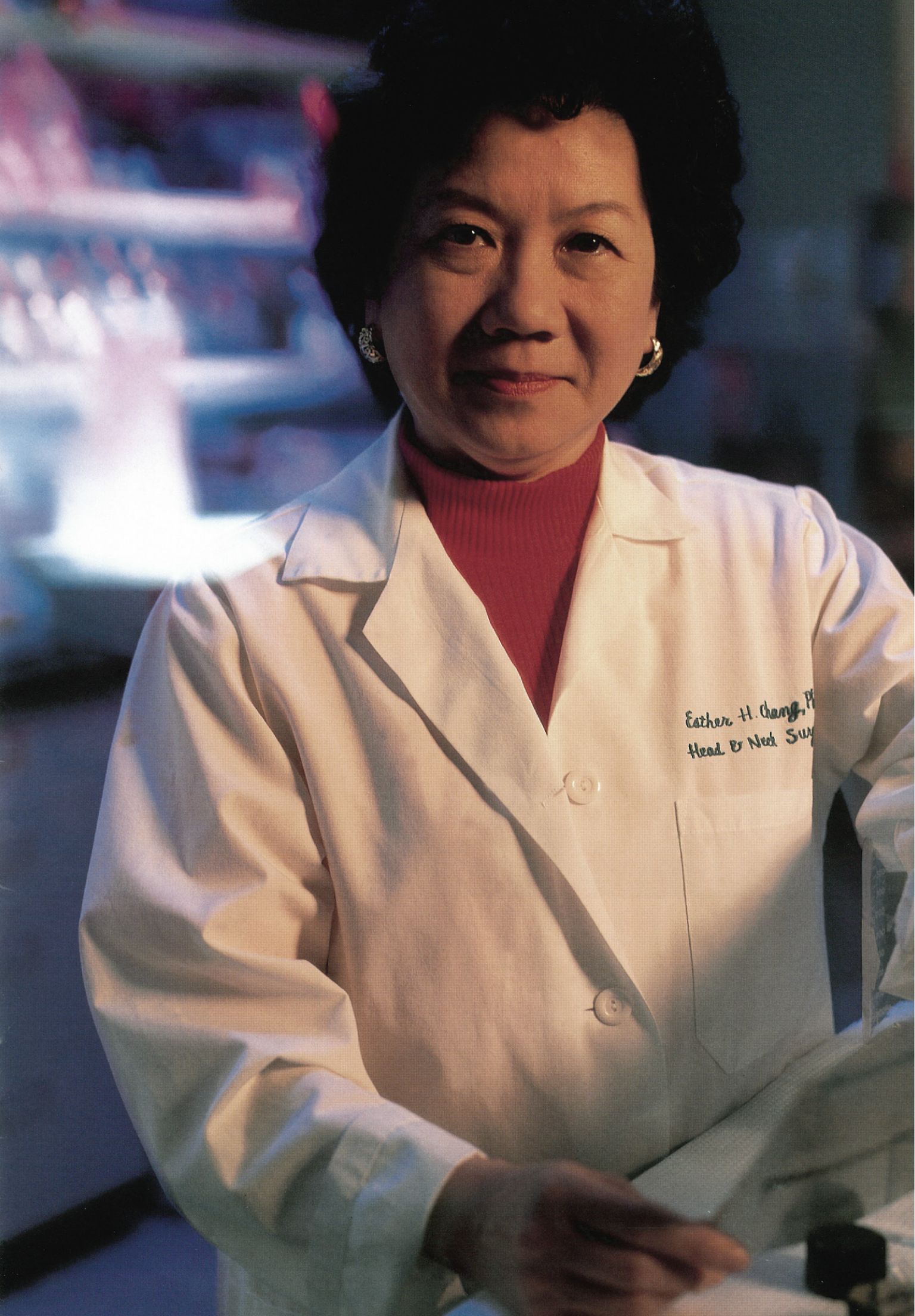
In addition to being an effective weapon against cancer cells that have metastasized, Dr. Chang's research could also prove a powerful tool against primary tumors — by increasing their vulnerability to radiation and chemotherapy.

With the support of NFCR, Esther Chang, PhD, of Georgetown University, has made an important breakthrough in the fight to stop the rapid and deadly spread of cancer cells.

Meanwhile, cancer patients may also enjoy reduced side effects from radiation and chemotherapy — because doctors will be able to achieve the same results with much lower doses than are now required to destroy tumor cells.

In short, with assistance from the National Foundation for Cancer Research, Dr. Chang has discovered ways to increase the effectiveness of traditional cancer treatments.

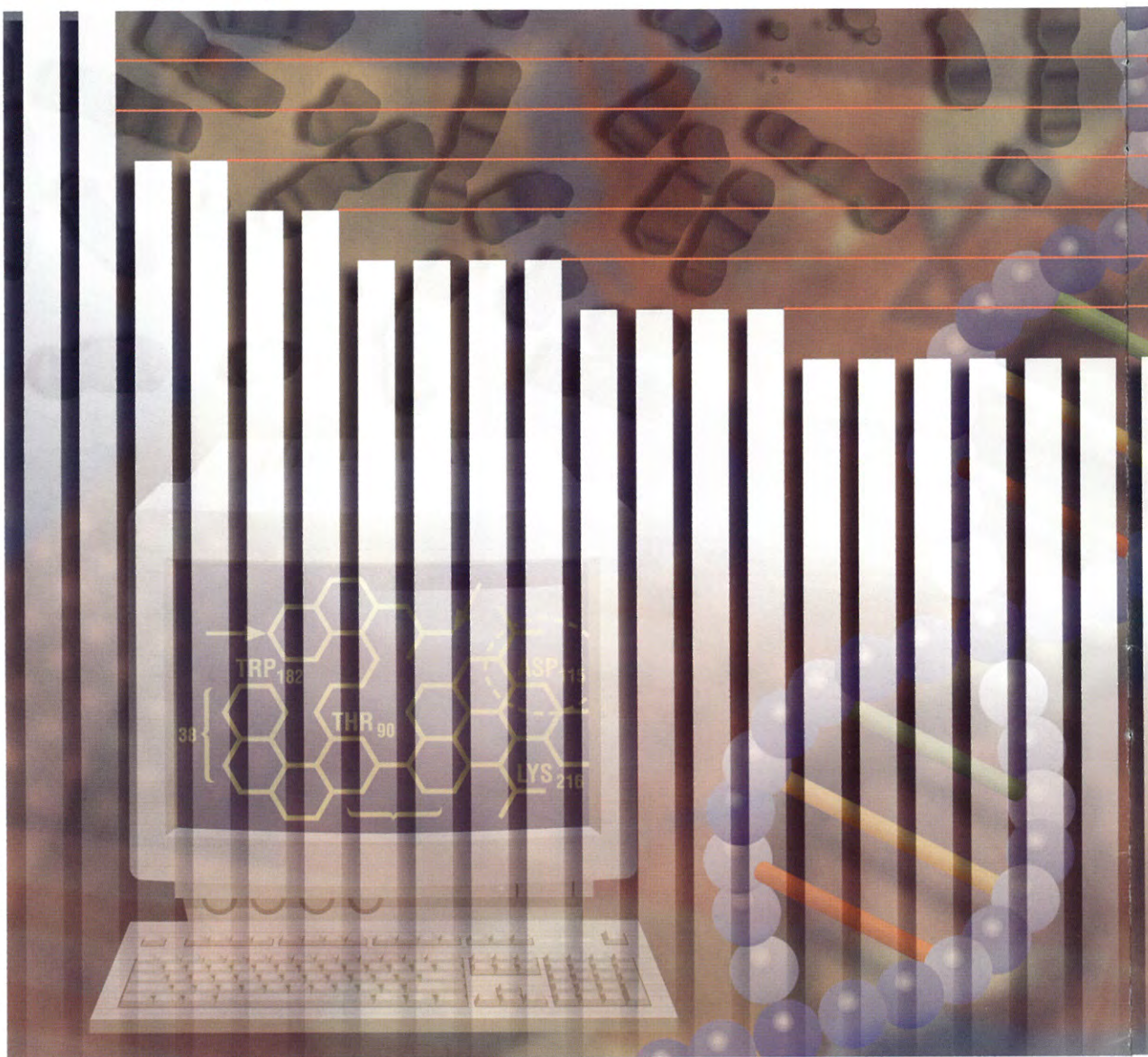
Soon, Dr. Chang will begin clinical trials that could lead to breakthrough treatments for patients suffering from head, neck, prostate, breast, and pancreatic cancers, among others.



Esther H. Chang, MD
Head & Neck Surg

RESEARCH for A *Cure* *Projects Longevity*

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UNIVERSITÄT ERLANGEN-NÜRNBERG (LADIK)

UNIVERSITY OF WALES (PETHIG)

HARVARD/BETH ISRAEL DEACONESS MEDICAL CENTER (DVORAK)

HARVARD/BETH ISRAEL DEACONESS MEDICAL CENTER (ROSENBERG)

RENSSELAER POLYTECHNIC INSTITUTE (GIAEVER)

INSTITUTS INTERNATIONAUX DE PHYSIQUE ET DE CHIMIE SOLVAY (PRIGOGINE)

STEACIE INSTITUTE FOR MOLECULAR SCIENCES (INGOLD)

OXFORD UNIVERSITY (RICHARDS)

SUNY-ALBANY (SARMA)

CORNELL UNIVERSITY (SCHERAGA)

YALE UNIVERSITY (HORWATH)

GEORGETOWN UNIVERSITY (ROSENTHAL)

WEIZMANN INSTITUTE (SACHS)

HEINRICH-HEINE-UNIVERSITÄT (SIES)

CALIFORNIA INSTITUTE OF TECHNOLOGY (BARTON)

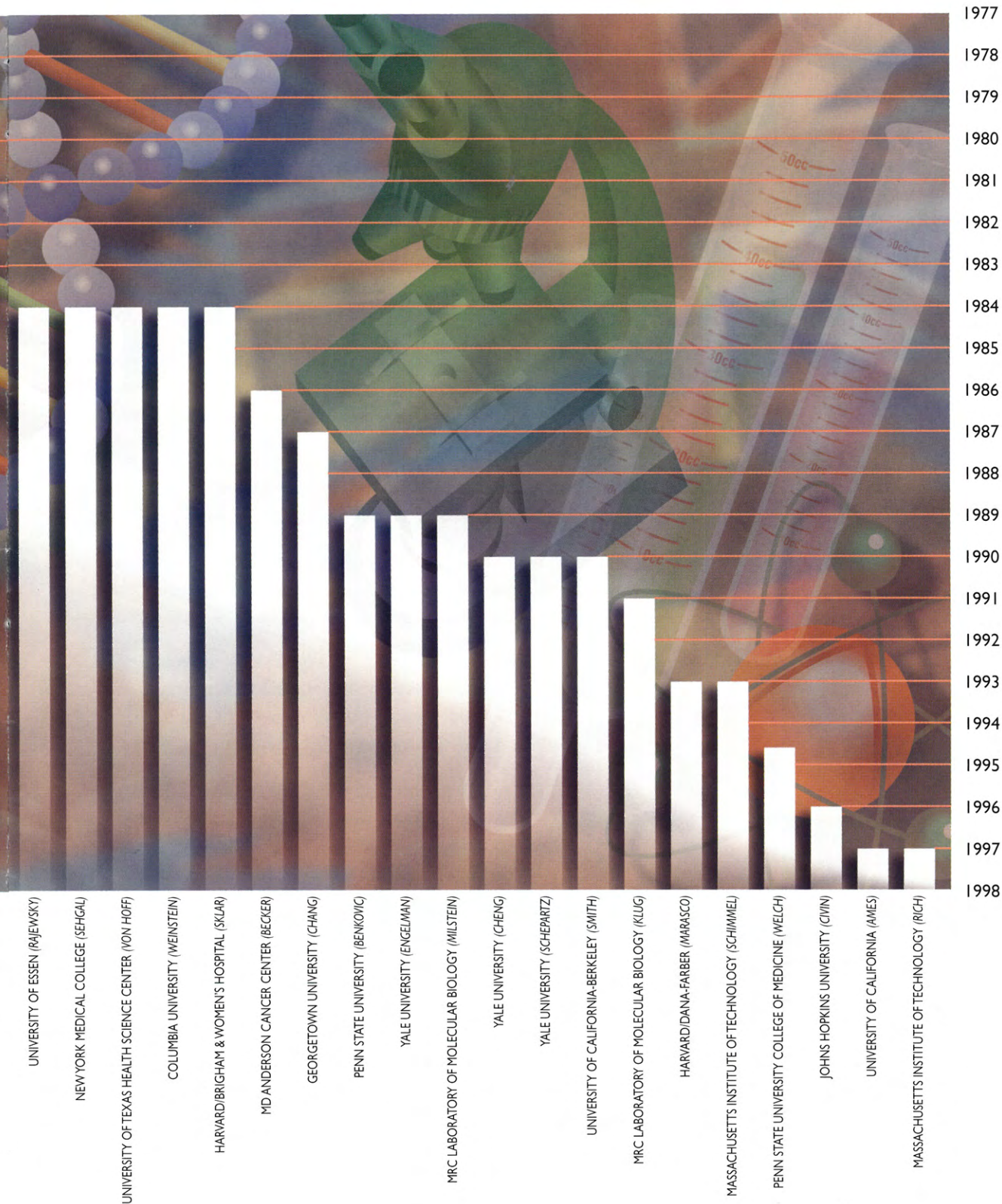
UNIVERSITY OF WISCONSIN-MADISON (DELUCA)

CALIFORNIA INSTITUTE OF TECHNOLOGY (DERVAN)

UNIVERSITY OF COLORADO (HORWITZ)

STANFORD UNIVERSITY (MERIGAN)

INSTITUTE FOR MOLECULAR MEDICINE (NICOLSON)



RESEARCH for A CURE

25th Anniversary Conference

The National Foundation for Cancer Research marked its 25th anniversary with a remarkable conference titled Basic Science: Research for a Cure and Prevention.

For three days last September, NFCR hosted leaders in cutting-edge cancer research for an informative conference that covered a wide range of topics, including genetic repair, improvements in drug therapies, cancer treatments, chemoprevention, and vaccines.

Meeting at the Georgetown University in Washington, D.C., scientists such as NFCR Project Director and Nobel Laureate Dr. Aaron Klug discussed promising advances in basic science research.

Among the NFCR-sponsored scientists who presented their latest findings to the assembled conferees were:

Dr. Bernard Weinstein, a Columbia University Professor of Genetics studying chemicals produced by tumor cells that may one day be used to develop new drug treatments that stop cancer from metastasizing or spreading;

Dr. Jacqueline Barton, a California Institute of Technology researcher who probes deep within the double helix of human DNA in search of a cancer cure;

Dr. Hector DeLuca, a University of Wisconsin Biochemistry Professor investigating new ways to utilize Vitamin D as a drug therapy against colon and skin cancers; and

Dr. Kathryn Horwitz, a University of Colorado Medical School Professor studying methods of reducing tumor resistance to the breast cancer drug tamoxifen — thereby increasing its long term effectiveness over the course of treatment.

Commenting at the conference, NFCR Project Director Dr. Daniel Von Hoff said, "There needs to be a greater sense of urgency about bringing new discoveries from bench to bedside."

"People in this room have all the pieces ... now we need to bring the pieces together," Von Hoff concluded. NFCR President Franklin Salisbury agreed, adding, "The cure for cancer is not going to come easily."

"That is why NFCR believes by supporting substantial research, scientists will intervene at the molecular level to discover, understand and find cures for cancer. NFCR strongly believes the cure for cancer will be found in the laboratory and within our lifetime. This is the hope and promise of basic science research," Salisbury said.



Public Education

Today, more and more Americans are enjoying the benefits of eating right and exercising.

And to help you live a healthier life and lower your chances of developing cancer, NFCR will gladly send you any of the following publications at no charge when you call toll free, 1-800-321-CURE. Health fair and other event-oriented inquiries are welcome.

Stay informed on the latest findings from NFCR's Project Directors with *Research for a Cure*, NFCR's newsletter.

Learn lifesaving information about the diagnosis and treatment of a variety of cancers with our easy to understand *Our Members Ask* series.

Find out what you can do to help prevent the 22 most common forms of cancer with our comprehensive and educational NFCR Cancer Chart.

Help reduce your cancer risk and improve your overall fitness by selecting one of the following titles from our On Your Health series:

Weigh Less — Live Longer

Cancer Detection

Seek Shade, Not Sun

Find Fiber

Get the Facts on Fat

Walk for Fitness

Track the Trace Minerals

Breathe Easier — Reduce Radon

Choose Crucifers

To request complimentary copies of the materials described here, please call us toll free at 1-800-321-CURE, email us at info@nfc.org — or write to us at the National Foundation for Cancer Research, 4600 East West Highway, Suite 525, Bethesda, MD 20814.



RESEARCH for A CURE *Charitable Giving*

SAMPLE WILL LANGUAGE

A will is the cornerstone of your plan for the future. With a provision in your will for NFCR, you can make a significant investment in a healthy future for your loved ones.

Here is sample language which you might use to remember NFCR in your will:

"I give, devise and bequeath to the National Foundation for Cancer Research, a charitable organization incorporated in the state of Maryland, with its principal office at 4600 East West Highway, Bethesda, MD \$ _____ (or _____% of the residue of my estate) to be used for NFCR's basic science cancer research program."

Although the process is simple, you should seek the advice of your attorney to see that your will or codicil is effectively drafted.

Your charitable generosity can be rewarding in many ways. Your gifts may even offer you substantial tax advantages.

Even though personal economic benefit may not be a primary motivation behind your gift to NFCR, you may want to consider charitable giving strategies which provide financial benefits to you as well as the causes you support. Federal tax laws encourage charitable giving by allowing you to deduct the value for such donations from your income taxes.

There are many different ways to give charitable gifts. You can contribute an outright gift, a gift that produces income for you, a bequest in your will, or a gift of life insurance — just to name a few.

The National Foundation for Cancer Research depends on contributions in all forms. We hope you will embrace our mission of supporting basic science cancer research and contribute to NFCR in one of many ways. The following describes a variety of options for giving. For more information on any of these options, or if you have additional questions, please do not hesitate to call us at 1-800-321-CURE.

PLANNED GIVING

Planned giving simply means your plan for giving. The arrangements you make, the beneficiaries you name, and the timing you choose are the components of your plan for giving. During your life, and after you're gone, a well-conceived plan distributes what you have worked hard to accumulate, in the manner you have chosen, and with minimal delay and erosion by taxation.

WILLS AND BEQUESTS

This is the most easily understood gift. The donor includes a bequest in his/her will leaving a gift to NFCR. This can be either a fixed sum; a fixed percentage; or a specifically named gift (X shares of Y stock, or certain real estate, for example). See Sample Will Language at left.

MEMORIAL/HONOR GIFTS

All of us know someone special whom we have admired, respected and loved. We invite you to celebrate that special person's life with a donation made in his or her honor to the National Foundation for Cancer Research. Or perhaps you would like to send a memorial contribution instead of sending flowers at the death of a loved one. This is really a gift "so others might live"—for it goes to support lifesaving cancer research. A handsome card is sent to the honoree, or in the case of a memorial gift, an "In Memory of" card with the name of the donor is sent to the family.

We receive so many individual gifts of this kind that space limitations do not permit listing all the honorees. But we are grateful for them all.

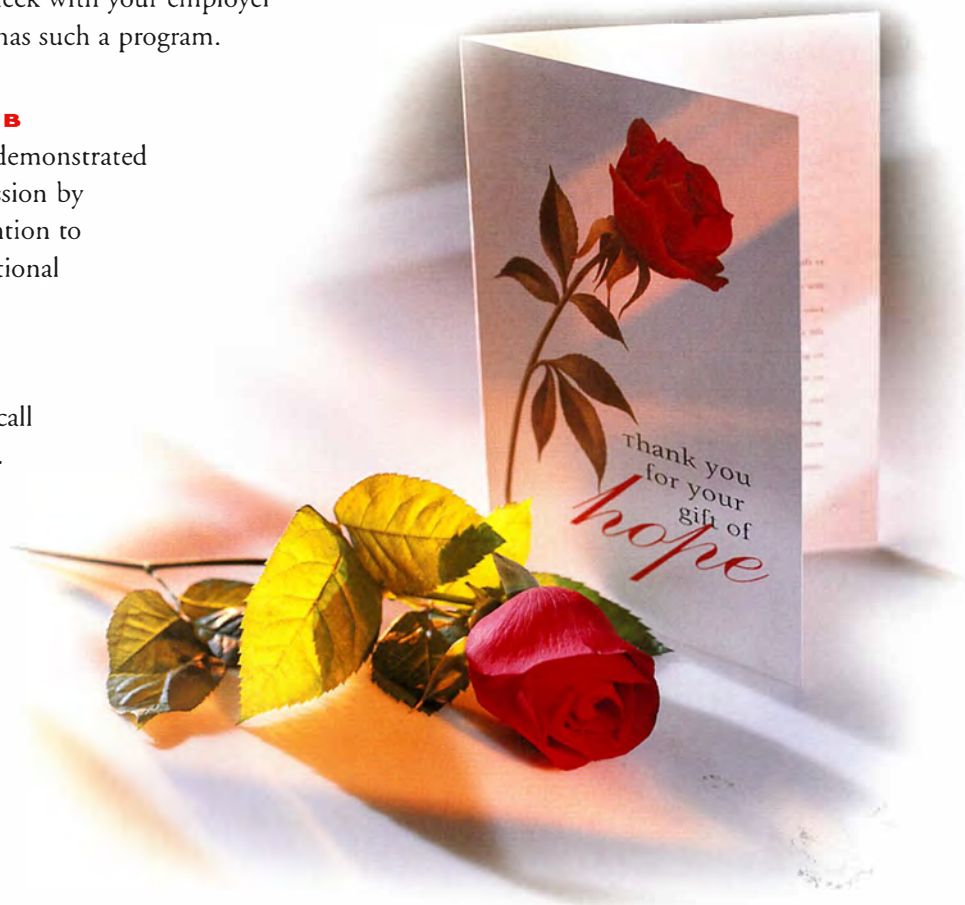
If you would like more information about how to contribute through NFCR's Honor/Memorial program, please call us at 1-800-321-CURE and ask for Ann Mariani.

CORPORATE MATCHING GIFTS

Many employers provide matching gift programs to their employees, retirees, and directors. To all who participate in these programs, we extend our sincere thanks. We encourage you to check with your employer to see if your company has such a program.

THE CODICIL CLUB

Many individuals have demonstrated their support to our mission by notifying us of the intention to leave a legacy to the National Foundation for Cancer Research. If you have remembered NFCR in your estate plan, please call us at 1-800-321-CURE.



RESEARCH for A *cure* *NFCR In the News*

HIGH RISK RESEARCH FUNDING CAN BE HIGH PROFILE

BY KAREN BIRMINGHAM

Six weeks ago, a comparatively unknown organization held a cancer research conference in Washington, DC to celebrate the 25th anniversary of its inauguration. The National Foundation for Cancer Research (NFCR) speaker list included some of the most senior names in basic biomedical research in the world, testimony to the fact that in these times of big budget science, a minimal amount of funding for the right 'risk project' can pay large dividends.

NFCR grantees include Nobel Prize winners Cesar Milstein and Sir Aaron Klug, and such distinguished researchers as Leo Sachs (Weizman Institute of Science, Israel) Kathryn Horwitz (University of Colorado), Esther Chang (Georgetown University), and Manfred Rajewsky (University of Essen, Germany). Entertainment during the meeting was provided by Bert Vogelstein's band 'Wild Type.' Vogelstein (Howard Hughes Medical Institute, Baltimore) has also been funded by the NFCR.

American entrepreneur, Franklin Salisbury, established the NFCR in 1973 on hearing that Albert Szent-Gyorgyi, the Hungarian biochemist who received the Nobel Prize in 1937 for the identification of Vitamin C and the co-discovery of the Krebs cycle, was struggling to fund research into cancer cell growth. Salisbury mailed a check for \$25 to Szent-Gyorgyi, and was so overwhelmed to receive a letter of thanks that he not only provided substantial funding for Szent-Gyorgyi's work, but also decided to establish a philanthropic fund to support other basic cancer researchers. Since that time, the NFCR, which raises funds through mail donations averaging \$14, has given \$160 million to research.

—Excerpt from an article published in *Nature Medicine*,
Volume 4, Number 11, November 1998



**NATIONAL FOUNDATION FOR
CANCER RESEARCH MEETING
BASIC SCIENTISTS URGED TO
INTENSIFY WORK ON NOVEL
CANCER THERAPIES**

BY PEGGY EASTMAN

Research scientists were urged to step up their efforts to find unique and novel targets cancer therapy at a conference here sponsored by the National Foundation for Cancer Research (NFCR). Titled "Basic Science: Research for a Cure and Prevention," the meeting was the 25th anniversary conference of the private foundation whose goal is to support the laboratory research that will ultimately lead to a cure for cancer.

"There needs to be a greater sense of urgency about bringing new discoveries from bench to bedside," said Daniel D. Von Hoff, MD, Clinical Professor of Medicine in the Division of Medical Oncology at the University of Texas Health Science Center in San Antonio.

"People in this room have all the pieces for this," he said. "Now we need to bring the pieces together." Dr. Von Hoff, who co-chaired a workshop called "Basic Science to Clinical Application," said the nation should be so outraged that 1,500 people die of cancer every day that it translates its outrage into more money for promising basic research.

*—Excerpt from an article published in Oncology Times
Volume XX, #12, December 1998*

**RESEARCH IN BASIC SCIENCE
TO FIND A CURE AND
PREVENTION FOR CANCER**

Understanding molecular events in health and disease is essential for developing effective treatment for any disease, especially a disease like cancer, which is very complex and dynamic. In the last decade, basic research to unravel the molecular events causing cancer has improved treatment strategies. This has been possible because researchers in diverse disciplines, such as computational science, biophysics, chemistry, biochemistry, cell biology, molecular genetics, pharmacology, biochemical pathology, immunology, and oncology, exchange their knowledge to enrich the field of cancer research. The National Foundation for Cancer Research has been supporting basic science research since its inception in 1973. During the 25th anniversary of this Foundation, this year, scientists from all over the world were gathered in Washington, DC to share results from some of their recent discoveries.

*—Abstract of an article published in the scientific journal
Cancer Watch, Volume 7, November 1998.*

RESEARCH for ACURE *Financials*

STATEMENTS OF FINANCIAL POSITION

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

<i>Assets</i>	1998	1997
Cash and cash equivalents	\$ 1,599,647	1,159,771
Accounts receivable, net of allowance for doubtful accounts of \$16,190 in 1998 and \$6,100 in 1997	261,636	195,244
Contributions receivable (note 3)	140,286	444,136
Prepaid expenses and other assets	168,799	371,136
Furniture and equipment (note 4)	119,861	84,669
Investments (note 5)	4,322,159	4,562,425
Amounts held in trust by others (note 6)	1,563,011	1,614,128
	<u>\$8,175,399</u>	<u>8,431,509</u>

Liabilities and Net Assets

Liabilities:

Accounts payable and other liabilities	\$1,462,099	1,050,639
Accrued salaries and vacation	37,405	32,610
Deferred revenue	39,225	37,345
	<u>\$1,538,729</u>	<u>1,120,594</u>

Net assets:

Unrestricted:

Designated for research (note 8)	4,873,323	2,468,972
Undesignated	188,340	3,202,983
	<u>\$5,061,663</u>	<u>5,671,955</u>

Temporarily restricted (note 7)	322,969	413,040
Permanently restricted (note 7)	1,252,038	1,225,920

Total net assets	\$ 6,636,670	7,310,915
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Commitments (notes 8, 9 and 13)

	<u>\$8,175,399</u>	<u>8,431,509</u>
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See accompanying notes to financial statements.

STATEMENTS OF ACTIVITIES

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

	1998	1997
Changes in unrestricted net assets:		
<i>Support and revenue:</i>		
Public support	\$7,839,029	5,980,839
Bequests	623,452	1,740,450
University support (note 9)	1,475,727	1,142,845
Mailing list rentals	510,631	369,248
Net investment income (note 5)	(100,441)	786,888
Other revenue	42,518	44,774
Total support and revenue	10,390,916	10,065,044
Net assets released from restrictions (note 10)	149,817	48,399
Total revenue	10,540,733	10,113,443
<i>Expenses:</i>		
Program services:		
Research (notes 8 and 9)	3,796,860	2,802,912
Public education (note 12)	2,460,877	1,399,972
Total program services	6,257,737	4,202,884
Supporting services:		
Fundraising (note 12)	4,297,821	3,060,719
Management and general	595,467	505,626
Total supporting services	4,893,288	3,566,345
Total expenses	11,151,025	7,769,229
Change in unrestricted net assets	(610,292)	2,344,214
Changes in temporarily restricted net assets:		
Contributions	—	14,031
Gain on charitable remainder trusts	59,746	28,453
Net assets released from restrictions (note 10)	(149,817)	(48,399)
Changes in temporarily restricted net assets	(90,071)	(5,915)
Changes in permanently restricted net assets:		
Gain on beneficial interest in perpetual trusts (note 6)	26,118	268,623
Contributions	—	212,800
Changes in permanently restricted net assets	26,118	481,423
Change in net assets	(674,245)	2,819,722
Net assets, beginning of year	7,310,915	4,491,193
Net assets, end of year	\$ 6,636,670	7,310,915

See accompanying notes to financial statements.

STATEMENTS OF CASH FLOWS

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

	1998	1997
<i>Cash flows from operating activities:</i>		
Change in net assets	\$ (674,245)	2,819,722
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation and amortization	24,150	15,620
Provision for doubtful accounts	10,090	1,100
Unrealized loss (gain) on sale of investments	558,665	(625,291)
Realized loss (gain) on sale of investments	(275,271)	(17,586)
Loss (gain) on beneficial interest in perpetual trusts	51,117	(268,623)
Perpetual trust contribution	—	(212,800)
Gain on sale of furniture and equipment	(1,300)	—
Decrease (increase) in assets:		
Accounts receivable	(76,482)	(46,387)
Contributions receivable	303,850	(112,759)
Supplies inventory	—	15,928
Prepaid expenses and other assets	202,337	(225,220)
Donated asset	—	29,000
Increase (decrease) in liabilities:		
Accounts payable and other liabilities	411,460	401,828
Accrued salaries and vacation	4,795	(20,174)
Deferred revenue	1,880	5,555
Net cash provided by operating activities	541,046	1,759,913
<i>Cash flows from investing activities:</i>		
Purchase of investments	(2,200,870)	(1,924,703)
Proceeds from sales or maturities of investments	2,157,742	1,261,418
Purchase of fixed assets	(59,342)	(66,474)
Proceeds from sale of furniture and equipment	1,300	—
Net cash used in investing activities	(101,170)	(729,759)
Net increase in cash	439,876	1,030,154
Cash and cash equivalents, beginning of year	1,159,771	129,617
Cash and cash equivalents, end of year	\$ 1,599,647	1,159,771
Supplemental disclosure of cash flow information:		
Cash paid during the year for interest	\$ —	705

See accompanying notes to financial statements.

Notes to Financial Statements

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

(1) THE ORGANIZATION

National Foundation for Cancer Research, Inc. (the Foundation) was incorporated in Massachusetts in 1973 “to support basic science cancer research projects including the theories of Dr. Albert Szent-Gyorgyi who discovered Vitamin C.” The purposes of the Foundation are to conduct basic science cancer research and to provide educational information about cancer to the public. The Foundation also conducts business under the name Cancer Research Laboratories Foundation, Inc. The Cancer Research Coalition (the Coalition), a separately incorporated affiliate of the Foundation, was established on July 24, 1997. The purpose of the Coalition is to fund a specific research project. Although it has been inactive, it is expected that the Coalition will have activity in the next fiscal year.

(2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Foundation have been prepared on the accrual basis of accounting.

Basis of Presentation

Net assets and revenues, expenses, gains, and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, the net assets of the Foundation and changes therein are classified and reported as follows:

Unrestricted net assets – Net assets that are not subject to donor-imposed stipulations.

Temporarily restricted net assets – Net assets subject to donor-imposed stipulations that may or will be met either by actions of the Foundation and/or the passage of time.

Permanently restricted net assets – Net assets subject to donor-imposed stipulations that they be maintained permanently by the Foundation.

Revenues are reported as increases in unrestricted net assets unless use of the related assets is limited by donor-imposed restrictions. Expenses are reported as decreases in unrestricted net assets. Gains and losses on investments are reported as increases or decreases in unrestricted net assets unless their use is restricted by explicit donor stipulation or by law. Expirations of temporary restrictions on net assets (i.e., donor-stipulated purpose has been fulfilled and/or stipulated time period has elapsed) are reported as reclassifications between the applicable classes of net assets.

Revenue Recognition

Public support is recorded as revenue when contributions, which include unconditional promises to give (pledges), are received. The Foundation has adopted a policy of recording donor-restricted contributions whose restrictions are met in the same reporting period as unrestricted.

Bequests

The Foundation is the beneficiary under various wills and trust agreements. The Foundation records such amounts when notified that the amounts have cleared probate.

Cash and cash equivalents

Cash equivalents include amounts invested in an overnight sweep account.

Prepaid Expenses

Prepaid expenses consist primarily of unused postage, purchased prior to September 30.

Furniture and Equipment

Expenditures for furniture and equipment are capitalized at cost. Furniture and equipment are depreciated on the straight-line basis over the estimated useful lives of the assets of 5 to 10 years.

Lease-hold improvements are capitalized at cost and amortized on the straightline basis over the remaining life of the lease.

Investments

Investments, which are recorded at fair value, consist of corporate stocks and bonds, government securities with maturities greater than 90 days and money market funds.

Functional Allocation of Expenses

The costs of providing the programs and services are summarized on a functional basis in the accompanying financial statements. Accordingly, certain costs have been allocated between the programs and services benefited. Joint costs of informational materials or activities that include a fundraising appeal have been allocated between fundraising and public education expenses.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. The Foundation is also required to make estimates and assumptions that affect reported amounts of revenue and expenses during the reporting period. Actual results may differ from those estimates.

Notes to Financial Statements

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

Income Taxes

The Foundation qualifies as a public charity under Section 509(a) of the Internal Revenue Code and is generally exempt from federal income tax under Section 501(c)(3), except on unrelated business income, if any.

(3) CONTRIBUTIONS RECEIVABLE

Contributions receivable at September 30, 1998 and 1997 are expected to be received as follows:

	1998	1997
Within 1 year	\$138,286	442,136
Within 1 to 5 years	2,000	2,000
	\$140,286	444,136

(4) FURNITURE AND EQUIPMENT

Furniture and equipment at September 30, 1998 and 1997 consisted of the following:

	1998	1997
Computer equipment	\$92,993	186,283
Office furniture and equipment	104,412	171,424
Leasehold improvements	21,006	2,651
Donated property	700	700
	\$219,111	361,058
Less accumulated depreciation	(99,250)	(276,389)
	\$119,861	84,669

(5) INVESTMENTS

Investments at September 30, 1998 and 1997 consisted of the following:

	1998	1997
Money market funds	\$216,860	148,260
Corporate bonds	907,669	911,566
Government and agency securities	754,594	604,402
Stocks	2,443,036	2,898,197
	\$4,322,159	4,562,425

Investment income for the years ended September 30, 1998 and 1997 consisted of the following:

	1998	1997
Interest and dividend income	\$182,953	144,011
Net realized gains (loss) on sales of investments	275,271	17,586
Unrealized gain (loss)	(558,665)	625,291
	\$(100,441)	786,888

At the end of 1997, the Foundation transferred all of its investments from United Missouri Bank to Prudential Securities. Prudential subsequently liquidated many of the investments to allocate the proceeds amongst various money managers to diversify the investment portfolio. The amount in money market funds are classified as investments because the funds are not available for operating purposes and are intended to be reinvested in investments.

(6) AMOUNTS HELD IN TRUST BY OTHERS

The Foundation is the beneficiary of several split interest agreements, including irrevocable perpetual trusts and charitable remainder trusts. The Foundation does not exercise control over the trusts' assets which are held and administered by third party trustees. Under the perpetual trusts, the donors established and funded a trust whereby the Foundation is the beneficiary of the income on the trust assets as earned in perpetuity with no restrictions on its use. Under the charitable remainder trusts the donors established and funded a trust whereby the Foundation receives income distributions from the trust and will receive a percentage of trust assets at the termination of the trust.

The perpetual trusts are stated at present value based on the expected future cash flows to the Foundation, which approximates the fair value of the assets of the trust. Fair value at September 30, 1998 and 1997 was \$1,242,038 and \$1,215,920, respectively. The gain on the beneficial interest in perpetual trusts for the years ended September 30, 1998 and 1997, was \$26,118 and \$268,623, respectively. The charitable remainder trusts are stated at the present value of the estimated income distributions to be received over the life of the trusts and the amount to be received at the termination of the trusts. The amount recorded at September 30, 1998 and 1997, was \$320,973 and \$398,208, respectively.

(7) NET ASSETS

Temporarily restricted net assets at September 30, 1998 and 1997 consist of split interest agreements held by the Foundation as well as other miscellaneous contributions.

Investment income realized on the permanently restricted net assets balance of \$1,252,038 and \$1,225,920 as of September 30, 1998 and 1997, respectively, is unrestricted for use by the Foundation. The components of the permanently restricted net assets balance consist of perpetual trusts for which the Foundation is named a beneficiary.

(8) RESEARCH CONTRACTS

The Foundation enters into agreements with universities or other institutions to conduct scientific research on their premises, in accordance with policies established by the governing board of the Foundation. Under the terms of these agreements, the Foundation provides specific funds on

Notes to Financial Statements

National Foundation for Cancer Research

Years ended September 30, 1998 and 1997

an annual basis subject to routine performance requirements by the recipients of the contracts. Research contracts are expensed in the year the research is conducted.

At September 30, 1998 and 1997, contract commitments to universities and institutions for research amounted to \$4,873,323 and \$2,468,972, respectively.

(9) UNIVERSITY SUPPORT

Research contracts with universities and institutions typically cover much of the research costs; however, most institutions agree to donate certain materials, services, and the use of facilities. These donations, provided by the institutions, become a normal part of the research program and would ordinarily be costs incurred by the Foundation.

Control over these donated materials, services, and facilities is provided through on location Project Directors, who are responsible to the Foundation for the research project at the institutions.

The effect of these donations is to allow the Foundation to conduct research in excess of the amount of the contract. The institutions provide the Foundation with a measurable basis for the amount of the donated materials, services and facilities. To properly reflect the total research cost and adequately report the full scope of the operation, the Foundation has included the following donations as university support and research expense for the years ended September 30, 1998 and 1997:

	1998	1997
Salaries and staff	\$424,408	309,588
Materials, chemicals, and equipment	172,761	145,373
Utilities and occupancy	363,098	109,342
Travel and services	49,965	42,945
Computer services	380,053	362,046
Hospital facilities and lab costs	85,442	173,551
	\$1,475,727	1,142,845

(10) RECLASSIFICATION OF NET ASSETS

Net assets of \$12,836 and \$21,920 for the years ended September 30, 1998 and 1997 were released from donor restrictions as the Foundation awarded research contracts in accordance with donor stipulations. In addition, for the year ended September 30, 1998, \$136,981 of net assets were released from the time restriction on the charitable remainder trusts as interest income and the balance of one of the charitable remainder trusts was received. For the year ended September 30, 1997, \$26,479 of net assets were released from the time restriction on the charitable remainder trusts as interest income was received.

(11) RETIREMENT PLAN

The Foundation has a defined contribution money purchase plan which covers all fulltime employees with at least 1 year of service. The Foundation contributes an amount equal to 12 percent of the participating employees' salaries to the plan each year. For the years ended September 30, 1998 and 1997, retirement expense was approximately \$50,000 and \$42,000, respectively.

(12) ALLOCATION OF JOINT COSTS

For the years ended September 30, 1998 and 1997, the Foundation incurred joint costs of \$5,872,000 and \$3,552,000, respectively, for informational materials and activities that included fundraising appeals which were allocated as follows:

	1998	1997
Fundraising	\$3,649,000	2,396,000
Public Education	2,223,000	1,156,000
	\$5,872,000	3,552,000

(13) LEASE COMMITMENTS

The Foundation leases office space under a noncancelable operating lease. Future minimum lease payments under the operating lease as of September 30, 1998 are as follows:

1999	\$66,728
2000	68,393
2001	70,207
2002	71,856
2003	18,074
	\$295,258

Rent expense for the years ended September 30, 1998 and 1997 was \$89,638 and \$164,983, respectively.

RESEARCH for A CURE

Independent Auditor's Report

BOARD OF DIRECTORS

National Foundation for Cancer Research

We have audited the accompanying statements of financial position of the National Foundation for Cancer Research, Inc. (the Foundation) as of September 30, 1998 and 1997, and the related statements of activities and cash flows for the years then ended. These financial statements are the responsibility of the Foundation's management. Our responsibility is to express an opinion on these financial statements based on our audits.

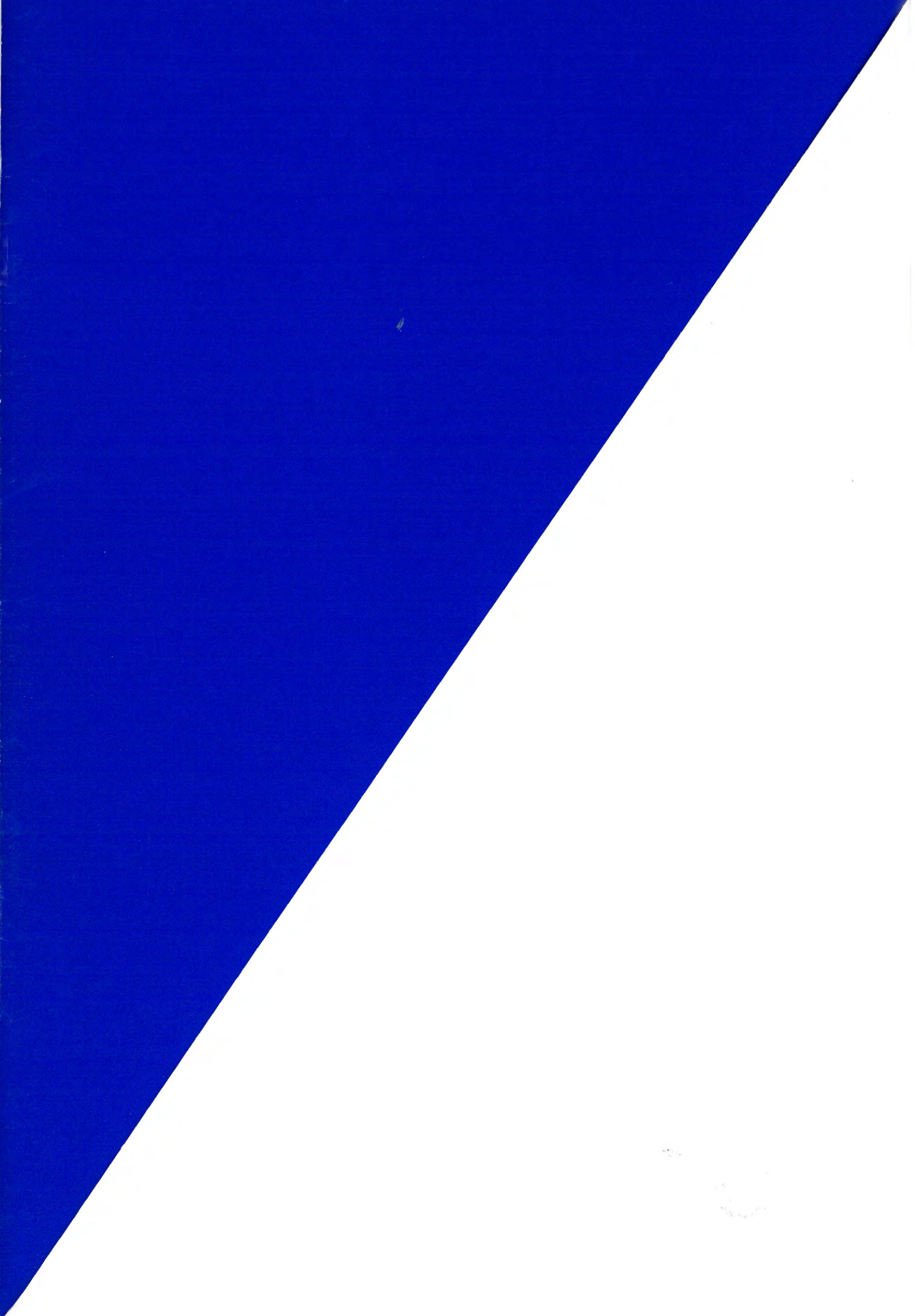
We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the National Foundation for Cancer Research, Inc. at September 30, 1998 and 1997, and its changes in net assets and its cash flows for the years then ended in conformity with generally accepted accounting principles.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplementary information included in the Schedule is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

KPMG Peat Marwick LLP

December 4, 1998



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Donald Stuart Cameron, J.D.
Treasurer

The National Foundation for Cancer Research was founded in 1973 and incorporated under the laws of the State of Massachusetts. This Foundation is organized pursuant to section 501 (c)(3) of the Internal Revenue Code and is registered with and complies with the regulations of the charity divisions in all states in which it solicits donations, including the New York Department of State, Office of Charities Registration, Albany, New York 12231. A copy of our Annual Report is always available from that agency or from the Foundation. Our research program is supported entirely by voluntary, private contributions that are tax deductible.



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