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President Announces New NCAB Appointees

On June 27, the White House announced the appointment of seven individuals to the National Cancer Advisory Board (NCAB) for 6-year terms that will expire March 9, 2012. The appointees are: Mr. Robert A. Ingram and Drs. Anthony Atala, Bruce A. Chabner, Donald S. Coffey, Lloyd K. Everson, Judah Folkman, and Karen Dow Meneses.

NCAB, an advisory board mandated as part of the Public Health Service Act, advises the secretary of the U.S. Department of Health and Human Services (HHS) and the NCI director about the institute's activities, including reviewing and recommending cooperative agreements following technical and scientific peer review.

NCAB consists of 18 members appointed by the President of the United States and includes leading representatives of the health and scientific disciplines; the general public, including leaders in fields of public policy, law, health policy, economics, and management; and experts in environmental carcinogenesis. Leaders of several federal health agencies also participate as nonvoting members.

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Director's Update

A New Platform for Cancer Research Advances

Traditionally, much of laboratory-based cancer research has focused on the inner workings of the cancer cell or a specific cancer gene. As a result, we have generated a formidable—although still incomplete—understanding of cancer cell biology.

We also now know that, although this "reductionist" approach has proven to be extremely valuable and led to important advances, we also must develop a more cohesive understanding of how cancer cells interact with, and are influenced by, their molecular and cellular environments.

In 2004, NCI launched perhaps the largest single effort to study cancer as a complex biological system by establishing the Integrative Cancer Biology Program (ICBP). Integrative cancer biology is a unique pursuit, drawing on expertise from diverse fields such as engineering, physics, and mathematics to develop predictive computational models of biological processes critical to cancer initiation, progression, and metastasis.

These predictive models, which take into account factors like molecular dynamics, cellular interactions, and organ and tissue interaction, will

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Mr. Ingram is the vice chairman of pharmaceuticals for GlaxoSmithKline and previous president and chief executive officer of Glaxo Wellcome. He has also served on the Board of Advisors for the Forum for Corporate Conscience, which advocates socially, economically, and environmentally responsible, values-based business leadership.

Dr. Atala is the director of the Wake Forest Institute for Regenerative Medicine and chair of the Department of Urology at Wake Forest University. His current research focuses on growing new human tissues and organs to repair or replace those damaged by age, cancer, trauma, or abnormal development.

Dr. Chabner is the clinical director of the Massachusetts General Hospital Cancer Center, a professor in the Department of Medicine at Harvard Medical School, and former director of NCI's Division of Cancer Treatment and Diagnosis from 1982 to 1995. He has a specialty interest in the treatment of lymphoma, with a focus on experimental new drugs, particularly natural products and signal-transduction inhibitors, and on clinical trial design.

Dr. Coffey is director of research at the Johns Hopkins University James Buchanan Brady Urological Institute, the Catherine Iola and J. Smith Michael distinguished professor of urology, and professor of oncology and pharmacology at Johns Hopkins University. His current research involves exploring the role of the nuclear matrix in oncogenesis.

Dr. Everson is vice chairman of US Oncology, the nation's largest health care services network devoted exclusively to cancer treatment and research. He previously served as a member of NCI's Board of Scientific Counselors.

Dr. Folkman is the Julia Dyckman Andrus professor of pediatric surgery and professor of cell biology at Harvard Medical School, and scientific director of the Vascular Anomalies Center at Children's Hospital Boston. His research was instrumental in the discovery that tumor growth is dependent on angiogenesis.

Dr. Meneses is the Beat M. and Jill L. Kahli endowed chair in oncology nursing at the University of Central Florida. Her main research interests are breast cancer, quality of life, cancer survivorship, screening and early detection of cancer, and skin cancer prevention for adolescents.

The President also intends to designate current NCAB member Dr. Carolyn D. Runowicz, director of the Carole and Ray Neag Comprehensive Cancer Center at the University of Connecticut Health Center, as chairman of the NCAB for a 2-year term.

"I am truly honored to assume this position," said Dr. Runowicz, who is also president of the American Cancer Society. "I have enjoyed being a member of the board for the past 2 years, and I look forward to working with Dr. John Niederhuber, NCI's acting director. The advisory board will have an important role in addressing the challenges that confront the institute in this current funding climate," she added.

"I am very pleased with the President's choices of new members and chairperson of the NCAB," stated Dr. Niederhuber. "These individuals provide a wealth of knowledge in tissue interactions, the tumor microenvironment, drug development, signal transduction, angiogenesis, and quality of life and survivorship studies, which will significantly enhance the current expertise on the board. They are great replacements for the outstanding members who just completed their service. I look forward to the NCAB's guidance as we continue to make progress battling this dreaded disease." ◆

By Sharon Reynolds

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serve to generate hypotheses that will form the basis for further experimental designs in the lab and clinic.

The ICBP is composed of programs at nine research centers. At these centers, interdisciplinary research teams are developing computational models of processes such as DNA repair, gene expression and silencing, mitogenesis, and cell migration/metastasis.

Already these programs are producing important new findings. Two studies published in *Nature* earlier this year, for instance, used systems biology-based models to generate exciting findings about important signaling pathways in cancer that can help guide efforts to test agents that have molecular targets in those pathways.

Dr. Todd Golub and colleagues of the ICBP program at the Dana-Farber Cancer Institute and the Broad Institute are pioneering an exciting, cost-effective new method of drug discovery. The approach relies on a genomic signature-based screening process to identify already-characterized small molecules, including FDA-approved agents, that appear to allow a cancer cell to acquire the molecular characteristics of its normal counterpart, based on computer model predictions. Using this approach, his team discovered that gefitinib (Iressa) might be a potential

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Spotlight

Helping Families Cope with Cancer

The toll cancer may take on emotional, social, and physical well-being affects not only patients, but also their family members. Many caregivers have difficulty dealing with the stress caused by a loved one's cancer and need help to manage the demands of the illness. Although there is growing recognition that the family is central to the patient's recovery, there is limited information on how to help families cope with the challenges associated with family caregiving. NCI's Office of Cancer Survivorship (OCS) is supporting research on the types of psychosocial interventions that can help families manage the effects of cancer in their lives.

"We automatically assume that family members will take care of the patient and that they want to do this, but it can be overwhelming," says Dr. Laurel Northouse, professor of nursing at the University of Michigan and an NCI grantee. "Because the patient often spends only a short time with professional caregivers in the clinic or hospital, the family's role has increased. Some families simply are not prepared for what we expect from them."

Dr. Northouse has conducted many studies on the impact of cancer on families. Most recently, she and her colleagues have been testing the effects of a family intervention called the FOCUS Program on the quality of life of patients and their family caregivers. The FOCUS Program consists of five sessions and is designed to help families deal with the emotional side of cancer. FOCUS stands for the core components of the intervention: family involvement, optimistic attitude, coping effectiveness, uncertainty reduction, and symptom management. The program, utilizing masters-level nurses, was originally offered to women with recurrent breast cancer and their family caregivers, and more recently is being offered to men with prostate cancer and their spouses.

A key strength of the program is promoting family communication about cancer and its effect on each person and on the family as a whole. Patients and their families are encouraged to share concerns, offer support to one another, and identify what they need from the other person.

"We've found that families really appreciate having the nurse talk with them about what it's like to deal with cancer and discuss strategies for coping with their situations," adds Dr. Northouse. "Sometimes during these discussions, it is the first time that a patient hears what his or her family member thinks about it. Cancer can be scary and threatening to many people. It is not unusual for everyone to go along, not saying anything, but also not knowing what the other person is thinking or feeling." Both patients and family members report high satisfaction with the program.

Because the nurses meet with patients and families in their homes, they are often able to address problems that can't be raised in a short clinic visit. Sometimes patients are dealing with very difficult side effects, which they may not have told their physician about and may have thought that they had to deal with on their own.

The advantage of using master's-level nurses is that they not only provide support and counseling, but also have specific physical assessment skills and can provide strategies for managing fatigue, nausea, and cancer pain. They also can refer patients and families to community resources, such as psychotherapists, sexual health counselors, or organizations that can help the family pay for medications.

In a new study, Dr. Northouse will be examining program cost, risk for distress, and two doses of family intervention. Dr. Julia Rowland, director of NCI's OCS, notes that because of their key role in patients' health outcomes, family members are included under the definition of "cancer survivors" and have been vocal champions for more caregiver research. ◆

By Dorie Hightower

For a free copy of the booklet, *When Someone You Love Has Advanced Cancer*, visit NCI's Web site, or call NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). ◆

Cancer Research Highlights

Effectiveness of Antibiotics, Supplements Against Precancerous Gastric Lesions Varies

A team led by NCI's Division of Cancer Epidemiology and Genetics (DCEG) has found that one-time treatment of *Helicobacter pylori (H. pylori)* with amoxicillin and omeprazole reduces the prevalence of precancerous gastric lesions, whereas 7 years of supplementation with a garlic preparation or with a mixture of vitamins C, E, and selenium did not, as reported in the July 19 *Journal of the National Cancer Institute*.

Chronic infection with the *H. pylori* bacteria causes inflammation and ulcers in the stomach or small intestine. People infected with *H. pylori* have an increased risk of gastric cancer, the second leading cause of cancer mortality worldwide.

The researchers conducted a randomized double-blind factorial trial of three treatments: a 2-week *H. pylori* treatment with amoxicillin and omeprazole; daily garlic supplement for 7 years; or daily combined vitamin C, E, and selenium supplement for 7 years. The study included 3,365 adults aged 35 to 64 from 13 randomly selected villages in Shandong Province, China, where the prevalence of precancerous gastric lesions is high, and gastric cancer accounts for 42 percent of cancer deaths.

"Amoxicillin and omeprazole eradicated 73 percent of infections initially, and decreased the severity and development of precancerous gastric lesions 7 years later," said Dr. Mitchell Gail, study leader and chief of DCEG's Biostatistics Branch. "Favorable trends in the data suggested, but did not prove, that treating *H. pylori* with antibiotics might reduce gastric cancer incidence. Long-term vitamin and garlic supplements had no significant effect on the development of precancerous gastric lesions or on gastric cancer incidence." Dr. Gail added that the results should encourage larger studies to prove that treatment for *H. pylori* reduces gastric cancer incidence.

Combined Estrogen and Testosterone Use Increases Risk of Breast Cancer

Based on studies suggesting that testosterone can improve mood, sexual functioning, and bone-mineral density in postmenopausal women, the hormone is currently included in some postmenopausal hormone therapies (PMH). However, no prospective clinical studies had examined the breast cancer risk of exogenous testosterone before its incorporation into these treatments. A prospective cohort study published in the July 24 *Archives of Internal Medicine* demonstrates that the use of combined estrogen and testosterone (E&T) therapy significantly increases the risk of invasive breast cancer.

Women participating in the Nurses' Health Study from 1978 to 2002 returned an initial questionnaire that recorded the type of PMH they had used during the preceding 2 years. Follow-up data was collected using questionnaires mailed to participants every 2 years. Incidences of invasive breast cancer were identified by self reporting on returned questionnaires and verified by a review of patients' medical records.

Over 24 years, 4,610 incidences of invasive breast cancer occurred in postmenopausal participants. Women who used E&T therapy at diagnosis had a 77-percent greater risk of developing breast cancer than women who never used any type of PMH. Women who used estrogen alone had a 15-percent greater risk, and women who used estrogen and progesterone (E&P) therapy had a 58-percent greater risk than women who never used any type of PMH.

The authors recommend caution when considering the use of hormone therapy: "Given the substantial evidence implicating combined E&P therapy in breast cancer and the results of the present study regarding E&T therapies, women and their physicians should reconsider use and, more specifically, long-term use of these therapies."

Scientists Develop New Model for Estimating Melanoma Risk

Melanoma develops slowly and can often be cured when detected as a thin lesion in the outer layer of skin. Invasive melanoma can be deadly, however. A calculator, based on results of a study in the August 1 *Journal of Clinical Oncology,* can be used by health professionals to identify individuals at increased risk of melanoma and help them plan for potential interventions.

The model used to construct the tool was developed by a team of researchers led by Dr. Thomas R. Fears of NCI's DCEG. The model's attributable

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risk is 86 percent for men and 89 percent for women. Attributable risks did not vary by age, ultraviolet-B exposure history, or hours spent outdoors, and the observed individual risks varied widely, depending on age, other host characteristics, and geographic area.

To develop the model, the researchers employed a clinic-based case-control study of 718 non-Hispanic white patients with invasive cutaneous melanoma, as well as 945 outpatient controls. The gender-specific model uses information that health care providers can easily obtain during a routine office visit (e.g., complexion, sun exposure, and a physical examination of the back and shoulders). The back and shoulders were chosen as indicators of melanoma risk because the evaluation of moles, freckling, or sun damage to these areas is more telling than on chronically exposed areas (e.g., the face); and the number of nevi, or benign moles, on the back are highly correlated with the number of nevi on the whole body.

"Routine screening of the general population for melanoma isn't feasible," said Dr. Fears, "because of cost and the high proportion of negative examinations. Using the melanoma tool would help health professionals identify the appropriate high-risk people for interventions."

The tool is now available at http://dceg.cancer.gov/melanomarisktool.

Imatinib Linked to Cardiotoxicity

Researchers have identified a link between the use of imatinib (Gleevec) for patients with chronic myelogenous leukemia and cardiotoxic effects, including severe congestive heart failure, according to a study published early online July 23 in *Nature Medicine*.

Dr. Thomas Force of Jefferson Medical College in Philadelphia and colleagues reported on 10 individuals with normal heart function prior to receiving imatinib who, after treatment ranging from 1 to 14 months, developed left ventricular dysfunction and congestive heart failure. Myocardial biopsies from two of the patients, they reported, revealed abnormalities that are "characteristic of toxin-induced myopathies."

To further evaluate whether imatinib may have cardiotoxic effects, the research team treated healthy mice with the drug for 3 or 6 weeks using a range of doses. In addition to detecting mitochondrial abnormalities that are indicative of cardiotoxic effects, they found that mice treated for 3 to 4 weeks with a 200 mg dose also developed left ventricular contractile dysfunction and dilation. Imatinib could also induce cell death in cultured cardiomyocytes, the researchers found, and appears to do so as a result of its inhibition of the tyrosine kinase c-Abl, which they argued "has a previously unknown survival function in cardiomyocytes.

The study "raises concerns" about other "agents currently in development that target Abl and other nonreceptor tyrosine kinases," the authors concluded. In a news release, Dr. Force said clinicians need to be aware that imatinib could have cardiotoxic effects, but given the success seen with the drug, he added, "patients need to be on it."

Annual Cancer Prevention Lecture Delivered

In 1994, when the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study showed that beta-carotene was associated with lung cancer, many questioned earlier dietary epidemiology studies demonstrating its protective effects. Dr. Frank L. Meyskens, Jr., director of the Chao Family Comprehensive Cancer Center at the University of California, Irvine recently spoke about this conundrum at the 2006 Annual Advances in Cancer Prevention Lecture, sponsored by NCI's Division of Cancer Prevention and held on the NIH campus last week.

Dr. Meyskens argued that showing the efficacy of a dietary compound in a large nutritional epidemiology study should not necessarily warrant the sort of phase III study that is normally conducted. While clearly something is preventing cancer, he reasons, the "black box" of a large observational trial does not control for enough factors to identify the causative agent. The dietary epidemiologists, he said, falsely identify the micronutrient they are focused on as the active agent primarily responsible for the observed preventive effect. In a disease process as complex as cancer, he noted that a "biological action package" of multiple interacting regulatory molecules is much more likely to be involved, as well as the biochemical microenvironment at the organ site; neither of these factors is controlled for adequately in observational or randomized studies of nutrition.

Looking forward, however, Dr. Meyskens expressed excitement about the development of safer agents and more integrated multimodality strategies. He expects futuristic technologies such as noninvasive imaging, but is less optimistic about validating biomarkers. The scourge of lung cancer is not medicine's problem to solve, he stated, and will only yield to behavior change in the young.

To view the lecture, visit http://videocast.nih.gov/PastEvents.asp?c=4. ◆

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treatment for acute myeloid leukemia (AML), even though AML does not express the epidermal growth factor receptor, which was thought to be gefitinib's primary target. A clinical trial testing gefitinib in patients with advanced, refractory AML has now been launched.

In the ICBP program at the Massachusetts Institute of Technology, Dr. Doug Lauffenburger and colleagues have developed models of prostate tumor cell migration that suggest the cell's ability to infiltrate a given tissue is not necessarily a property of the cell, but of the tissue it is trying to invade and the surrounding environment. In the model, when a therapeutic agent intended to inhibit cellular invasion was introduced, it was successful in some tissue environments, but in others actually made the tumor cell highly invasive or metastatic. Clearly, studies like these will inform laboratory and clinical studies of approved therapeutics and those under development.

Importantly, education and training is a central component of ICBP, ensuring that there will be a next generation of researchers to build on the excellent work being conducted now.

I'd like to congratulate ICBP Chief Dr. Dan Gallahan and Program Directors Dr. Jennifer Couch and Betty Tarnowski, as well as Division of Cancer Biology Director Dr. Dinah Singer, for making this important program a reality. Through ICBP, NCI is facilitating the development of the integrative cancer biology field, and creating an entirely new research platform from which a host of new interventions and insights can proceed. ◆

Dr. John E. Niederhuber
Acting Director
National Cancer Institute

Featured Clinical Trial

Treatment for Malignant Ascites

Name of the Trial
Phase III Randomized Study of Octreotide in Patients with Cancer-Related Symptomatic Malignant Ascites (NCCTG-N04C2). See the protocol summary at http://cancer.gov/clinicaltrials/NCCTG-N04C2.

Principal Investigator
Dr. Aminah Jatoi, North Central Cancer Treatment Group

Why This Trial Is Important
Malignant ascites is an abnormal buildup of fluid in the abdomen caused by cancer. Ascites can cause discomfort, pain, problems with mobility and breathing, and other symptoms that decrease the quality of life for affected patients.

Paracentesis, the use of a thin needle or tube to remove excess fluid from the abdomen, can provide temporary relief from ascites. However, this and most other methods for treating ascites are invasive and uncomfortable for patients.

Octreotide, a drug similar to a naturally occurring growth-hormone inhibitor called somatostatin, decreases the secretion of fluid by the intestines and increases water reabsorption. Laboratory studies and case reports have indicated that octreotide may be effective in controlling malignant ascites, but the drug has not been tested in a randomized trial.

This trial will randomly assign patients with malignant ascites to receive a shot of either octreotide or a placebo once a month for up to 2 years. The investigators will see whether octreotide can delay the time until paracentesis is necessary or even whether the need for the paracentesis can be eliminated. They will also compare side effects and quality of life between the two groups.

Dr. Aminah Jatoi

"Ascites is a terrible problem for patients, and we often have to resort to invasive procedures to help them," explained Dr. Jatoi. "If there were some way we could help patients with this problem and not put them through invasive procedures every couple of weeks, that would be a really good thing."

Who Can Join This Trial
Researchers will enroll 68 cancer patients aged 18 or over diagnosed with malignant ascites. See the list of eligibility criteria at http://www.cancer.gov/clinicaltrials/NCCTG-N04C2.

Study Sites and Contact Information
Study sites in the United States are recruiting patients for this trial. See the list of study contacts at http://www.cancer.gov/clinicaltrials/NCCTG-N04C2, or call the NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237) for more information. The toll-free call is confidential. ◆

An archive of "Featured Clinical Trial" columns is available at http://cancer.gov/clinicaltrials/ft-all-featured-trials.

Notes

John P. Hartinger Retires

On July 31, NCI's Associate Director for Budget and Financial Management, John P. Hartinger, retired after more than 40 years of federal service. Mr. Hartinger began his NCI career when its annual budget was slightly more than $230 million compared with today's $4.8 billion. Mr. Hartinger spent most of his time serving as branch chief in the budget office advising several NCI directors, including Drs. Vincent DeVita, Samuel Broder, Richard Klausner, and Andrew von Eschenbach.

In addition to his many technical and financial skills, which were widely known and admired among those at the National Institutes of Health (NIH), Mr. Hartinger was a role model, mentor, and teacher for many NCI staff members. Earlier this year, former NCI Director Dr. Andrew von Eschenbach established the John P. Hartinger Executive Leadership Development Award, an annual scholarship honoring an NCI employee who demonstrates leadership potential, a commitment to public service, and a desire to further his or her executive development.

Outcomes Assessment in Cancer Trials Conference Announced

NCI will hold a conference, "Patient-Reported Outcomes Assessment in Cancer Trials: Evaluating and Enhancing the Payoff to Decision Making," September 20–21 in Bethesda, Md., to examine how measurement of patient-reported outcomes, such as symptoms and quality of life, in cancer trials can yield valuable information for decisions about cancer care, third-party reimbursement, and drug approval. The conference will also inform the NCI Clinical Trials Working Group implementation process. For information, contact Dr. Bryce Reeve at reeveb@mail.nih.gov or 301-594-6574.

To learn more about the conference, register, or submit an abstract for a poster presentation, visit http://www.scgcorp.com/PROACT/.

Patient Navigator Training Program Held

Trainees of NCI's Patient Navigator Programs, the American Cancer Society, and the Center for Medicare and Medicaid Services took part in a 3-day, jointly sponsored training program July 25–27 at the Morehouse School of Medicine in Atlanta. The event focused on information and knowledge sharing, skills building, and the practical application of knowledge and skills learned.

The Patient Navigator Programs, overseen by NCI's Center to Reduce Cancer Health Disparities and established in 2002, consists of three research projects to investigate the effectiveness of patient navigation services. The primary project, Patient Navigator Research Program: Eliminating Barriers to Timely Delivery of Cancer Diagnosis and Treatment Services, is providing 5-year funding to eight institutions to develop and assess the efficacy and cost-effectiveness of various innovative navigator interventions in communities experiencing cancer health disparities.

Immunology Conference Slated for September

NCI's Center for Cancer Research will host "Frontiers in Basic Immunology," a national symposium featuring leaders in the field of immunologic mechanisms. The conference will take place September 28–29 on the NIH campus in Bethesda, Md., and feature sessions on signaling and effector cell function, lymphoid development and differentiation, and cellular and innate immunity.

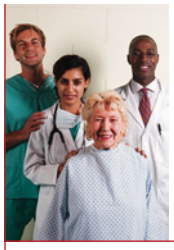
There is no charge for the symposium, but registration is required. Seating is limited, so early registration is encouraged at http://web.ncifcrf.gov/events/basicimmunology/default.asp. For additional information, contact Karen Kochersberger at kkochersberger@ncifcrf.gov or 301-228-4027. ◆

NCI Listens and Learns

In an effort to increase the quality and accessibility of cancer information, NCI produced a series of cancer information summaries for patients and health professionals. These peer-reviewed summaries cover topics such as cancer treatment, screening, prevention, genetics, supportive care, and complementary and alternative medicine (CAM).

NCI would like the following feedback from the advocacy community and the public on the 14 patient-version cancer information summaries that are related to CAM:

- Is the type of information provided in the CAM cancer information summaries for patients useful?
- Is there a CAM therapy for which you would like to see a summary written? ◆



Cancer Center Profile

Cold Spring Harbor Laboratory

Director: Dr. Bruce Stillman • One Bungtown Road, Cold Spring Harbor, NY 11724 • Phone: 516-367-8800 • Web site: http://www.cshl.edu

Background

Cold Spring Harbor Laboratory is a private, nonprofit, basic research and educational institution that was founded in 1890. It was first intended by the Brooklyn Institute of Arts and Sciences for training high school and college teachers in marine biology, but has since expanded to the current research portfolio that includes activities in cancer biology, genomics and bioinformatics, neurobiology, and plant genetics.

Cold Spring Harbor Laboratory is recognized internationally for its scientific meetings and courses that attract more than 8,000 scientists to the campus each year. Its Watson School of Biological Sciences, named for former laboratory president and Nobel laureate Dr. James D. Watson, offers a Ph.D. program for a small group of exceptional students. The Laboratory also trains college undergraduates through the Undergraduate Research Program, high school students through the Partners for the Future Program, and grade-school children in its Nature Study summer camp.

The Cancer Center at Cold Spring Harbor Laboratory received its NCI designation in 1987 and focuses on the basic biology of human cancer. The Laboratory runs three major research programs: the Gene Expression Program, the Cell Biology Program, and the Cancer Genetics Program.

Research Activities

As a basic research Cancer Center, Cold Spring Harbor Laboratory research does not directly involve patients. The Cancer Center has close working relationships with clinical research centers that provide access to primary cancer samples for analysis in several studies.

Scientists at Cold Spring Harbor Laboratory study cell growth and the cancer cell cycle, gene silencing, apoptosis, chemotherapy, cellular senescence, microarrays, oncogenes and tumor suppressor genes, X-ray crystallography, protein-RNA interactions, RNA interference, signal transduction, SNPs, and the development of animal models to better represent human cancer, among other research topics.

Cold Spring Harbor Laboratory scientists are also studying computational genomics and developing databases and analytic tools to help manage the increasing information that has resulted from cancer research and new technology.

Other Notable Programs

Researchers at Cold Spring Harbor Laboratory are using a new DNA microarray method that they developed, which is known as ROMA (representational oligonucleotide microarray analysis), to scan the human genome for cancer-causing mutations. ROMA has the potential to identify new genes involved in specific cancer types (useful for drug discovery) and to classify cancers in a new way that may provide better insights for diagnostics and therapy.

Other programs include an extensive animal models program to analyze and improve diagnostics and treatment, as well as the creation of an RNAi library for the entire human genome to uncover and validate new gene targets. ◆

Featured Meetings and Events

A calendar of scientific meetings and events sponsored by the National Institutes of Health is available at http://calendar.nih.gov ◆

The *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads the national effort to eliminate the suffering and death due to cancer. Through basic, clinical, and population-based biomedical research and training, NCI conducts and supports research that will lead to a future in which we can identify the environmental and genetic causes of cancer, prevent cancer before it starts, identify cancers that do develop at the earliest stage, eliminate cancers through innovative treatment interventions, and biologically control those cancers that we cannot eliminate so they become manageable, chronic diseases.

For more information on cancer, call 1-800-4-CANCER or visit http://www.cancer.gov. Contact the *NCI Cancer Bulletin* staff at ncicancerbulletin@mail.nih.gov.