NATIONAL CANCER INSTITUTE

NCI Cancer Bulletin

Eliminating the Suffering and Death Due to Cancer

March 22, 2005
Volume 2 | Number 12

In this issue:

A Publication of the
National Cancer Institute
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
NIH Publication No. 05-5498

http://www.cancer.gov

Brain Cancer Study Suggests New Standard of Treatment

The results of a large clinical trial show that a drug for treating the most common brain tumor in adults can prolong survival among some patients by several months when given concurrently with radiation.

In the randomized trial, 573 Canadian and European patients with glioblastoma received either radiation plus the drug temozolomide (Temodar) or radiation alone. Patients who received temozolomide lived, on average, 2.5 months longer than those who received radiation alone, according to results reported in the March 10 *New England Journal of Medicine*.

Glioblastoma kills most patients within a year of diagnosis, and there have been few advances in treatment in recent decades.

"The new approach is a modest but important improvement in the treatment of the disease," says Dr. Gregory Cairncross of the University of Calgary, Canada, a co-leader of the study. "It's a treatment we'll be using until we find something better."

Though the increase in survival is only several months, it represents a "substantial step forward" in the treatment of the disease, says Dr. Lisa DeAngelis, chairman of the Department of Neurology at Memorial Sloan-Kettering Cancer Center in New York.

(continued on page 2)

Director's Update

New Tools in the Fight Against Brain Tumors

This week's lead story discusses two studies that provide important advances in the treatment of glioblastoma, the most common form of brain tumor in adults. In one of the studies, the activation status of a specific gene is shown to correlate with response to the combination of temozolomide and radiotherapy.

"If early work is any indication, GMDI and REMBRANDT also will be invaluable to researchers"

As this study shows, researchers are amassing a large library of molecular and genetic data. What's lacking are broader efforts to collect and channel these data into a single, comprehensive resource. One effort to fill this breach is the Glioma Molecular Diagnostic Initiative (GMDI), a study launched last year by the Neuro-Oncology Branch, jointly led by NCI and the National Institute of Neurological Disorders and Stroke. GMDI-derived data will be available in a publicly accessible database known as REMBRANDT, a component of the cancer Biomedical Informatics Grid (caBIG).

(*continued on page 2*)

(Study continued from page 1)

"This is the first time any drug has shown a significant effect on outcome for this disease," explains Dr. DeAngelis. "But I don't want people to think that we are curing these tumors. I wish that were so, but we're not there yet."

Memorial Sloan-Kettering and some other cancer centers, including the National Cancer Institute (NCI), are already using the experimental strategy. Dr. Howard Fine, chief of NCI's Neuro-Oncology Branch, and his colleagues have used it for several years, and he welcomes the new findings as confirmation of their approach.

"The power of this clinical trial is clear, and it is my hope that this will be the new standard of treatment for this tumor," says Dr. Fine. "The bad news is that the median survival was only increased by 2.5 months and 74 percent of the patients taking temozolomide died within 2 years."

He cautions: "All of our new approaches will build on this new treatment strategy, but we need to keep the results in perspective."

In a related study, also in the March 10 *New England Journal of Medicine*, European and Canadian researchers, led by Dr. Roger Stupp of University Hospital in Lausanne, Switzerland, identified a gene that may be associated with the responsiveness to temozolomide and could potentially be a biological "marker" to indicate response to the therapy.

The researchers report that patients who benefited from taking temozolomide plus radiation tended to have tumors in which a key gene—called MGMT—had been "silenced" by the addition of a chemical to the gene, a naturally occurring process known as methylation.

If further studies confirm the finding, doctors could one day identify patients who may benefit from the therapy by testing the MGMT gene to learn whether or not it has been silenced. Testing the gene, however, is difficult, and as yet no widely available test exists.

A third study in the March 10 *New England Journal of Medicine* focused on treating the most common brain tumor in children, medulloblastoma. German researchers found that young children who received chemotherapy alone following surgery for their tumors could achieve long remissions and avoid the radiation therapy that can cause permanent brain damage.

"This study is further confirmation that some very young children can be spared the toxic effects of cerebrospinal radiation, and that a certain percentage of them will be long-term, disease-free survivors," says Dr. Fine. ◆

(New Tools continued from page 1)

GMDI includes a retrospective study of about 300 glioma tumor specimens and a 1,000- to 1,500-patient prospective study involving two NCI-funded brain tumor consortia and other NCI-funded institutions. Patients in the prospective study will have samples of their surgically-removed tumors sent to NCI for genetic and molecular analyses; findings will be correlated with each patient's clinical course. REMBRANDT also will house molecular and genetic data on all brain tumor types.

The current classification system for brain tumors does not account for the recent genetic analyses that indicate that there are likely many types of gliomas. As a result, the system is not consistently predictive of prognosis or response to therapies. GMDI and REMBRANDT can help change that. Specifically, the data from the prospective GMDI study will help to validate the biologic models built from the molecular and genetic data collected from tumor specimens in the retrospective study. With REMBRANDT, we should be able to build a data-rich, molecular database that can produce a clinically significant biological classification system for all types of gliomas.

As Dr. Howard Fine, chief of NCI's Neuro-Oncology Branch, explains, REMBRANDT will integrate diverse data sets, including SNP array, expression array, proteomics, and clinical data. With such data available, less sophisticated users, such as clinicians, can get concrete answers to important clinical questions, allowing them to make more logical treatment decisions.

If early work is any indication, GMDI and REMBRANDT also will be invaluable to researchers. Scientists in the NCI Neuro-Oncology Laboratory, for instance, using data from the retrospective component of GMDI, were able to identify the protein HDAC1 as a key player in the sensitivity of a rare form of glioma, oligodendroglioma, to chemotherapy. Further lab experiments showed that downregulation of HDAC1 improved oligodendroglioma tumor cells' sensitivity to chemo. Dr. Fine's team took this information to the Cancer Therapy Evaluation Program, and two phase I and II trials testing two HDAC inhibitors in patients with recurrent gliomas are now underway. Many of the patients being accrued to these trials are part of GMDI.

The GMDI/REMBRANDT initiative encapsulates much of what we are trying to accomplish at NCI. It's fueled by advances in technology and an understanding of cancer's biology. More important, it's a collaborative effort that relies on intramural and extramural researchers, NCI-funded consortia, and multiple National Insitutes of Health institutes. It's both a model and a vital part of our advancement toward the 2015 goal. ◆

Dr. Andrew C. von Eschenbach
Director, National Cancer Institute

Spotlight

Hodgkin's Lymphoma: Trying to Improve Upon a Cure

The vast majority of patients with Hodgkin's lymphoma (HL) can be cured, but some go on to develop another cancer or heart disease later in life. Many patients are young, and the risks of secondary illnesses caused by curing the disease are increasingly viewed as unacceptable. The challenge for the field now is to develop less toxic therapies that still cure patients.

"HL is facing the same issues as any other disease or any other cancer," said Dr. C. Norman Coleman, who directs NCI's Radiation Oncology Sciences Program. "Basically you'd like to be able to predict who's going to respond to which therapies, and begin to select individualized therapies."

A disease of the lymph system, HL was one of the first cancers found to respond to radiation and also one of the first success stories of chemotherapy. Most patients today are treated with chemotherapy and radiation, but there is no consensus among the experts about which combinations work for which patients, or even whether radiation should routinely be given along with chemotherapy.

Clinical trials are under way around the world to try to resolve some of these long-standing questions. Meanwhile, researchers are trying to identify genes, proteins, or other biological markers associated with a patient's response to treatment. If doctors could identify responders and nonresponders, they could begin to tailor therapies to individual patients.

In Germany, for example, a pilot study is under way to create a "toxicity index" that doctors might use to make decisions about treatments based on a patient's genetic makeup. To create the index, researchers will catalogue more than 800 patients, noting variations in the genes involved in breaking down drugs. These volunteer patients will be followed for at least 5 years.

One of the first clinical applications of such an index might be to identify patients at risk for severe toxicity who should, therefore, be treated in a hospital rather than on an outpatient basis, as is typically done.

"Many patients prone to developing toxicity from cancer treatment would have a better clinical outcome if treated as inpatients, but this requires that you identify these patients first," explained Dr. Roman Thomas of the University Hospital of Cologne, Germany, who is leading the index project and is currently at the Dana-Farber Cancer Institute.

Perhaps the most effective way to deal with the toxicity problem would be to develop targeted therapies along the lines of a drug like imatinib (Gleevec) that selectively kills cancer while sparing healthy tissues. In recent years research on the cells involved in HL has suggested several avenues of research, but the key events that cause cells to become malignant are not yet known.

"Much progress has been made, but we still don't know the primary transforming mechanisms in HL, and these are likely to provide the good drug targets," said Dr. Daniel Re, a member of the German Hodgkin's Lymphoma Study Group (GHSG) who is currently at the Burnham Institute.

GHSG leaders are planning to form a new HL study group this June at a scientific meeting in Lugano, Switzerland. "The aim is build a registry for all ongoing studies and to recruit more patients for early clinical trials dealing mostly with experimental therapies in a shorter time," explained Dr. Re.

HL is relatively rare and develops slowly so it can take a long time to gather meaningful results about the effectiveness of new therapies. In addition, the ability to cure 90 percent of patients has made many doctors understandably cautious about new therapies and less likely to enroll patients in experimental trials.

"When you are so successful in treating a disease it becomes harder to back off and try new approaches," said Dr. Vincent DeVita, Jr., of Yale University's Cancer Center. In an editorial published in the January issue of *Nature Clinical Practice Oncology*, he calls this reluctance to explore experimental therapies "the curse of the cure."

But he has reason to be hopeful. HL faced a similar situation in 1964, when studies led by NCI demonstrated that chemotherapy drugs were more effective than the then-current practice of radiation. These new chemotherapy treatments, which were eventually adopted, are still used today.

"The good news is that 30 years ago people used to die of this disease, and now they don't," said Dr. DeVita. ◆

Cancer Research Highlights

PLCO Trial Publishes Baseline Findings

A multicenter randomized clinical trial to determine if screening for prostate cancer reduces mortality from the disease has published findings from the initial round of screening. The study is comparing men who receive annual prostate-specific antigen (PSA) testing and digital rectal exams (DREs) for 6 years with a control group that receives routine medical care.

"Everything about the study's findings should reassure people that the trial is on track and that if we are given enough time we will answer the question: Does prostate screening done in this way save lives?" says Dr. Gerald Andriole of Washington University School of Medicine. Because prostate cancer progresses slowly for many patients, he adds, it could take until the year 2019 to answer the question.

According to findings published in the March 16 *Journal of the National Cancer Institute*, of the 34,000 men in the screening group, about 7 percent had a positive DRE and about 8 percent had a positive PSA level. Of this group, 74 percent underwent additional diagnostic testing, and one-third had a prostatic biopsy within one year.

Overall, 1.4 percent of the men in the screening group were diagnosed with prostate cancer, most of which was clinically localized. A companion paper reporting on the first 3 years of this trial, which is part of the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial, appears in the March issue of the *Journal of Urology*.

Maternal Smoking's Effects Found in Amniotic Fluid

Maternal smoking was associated with increased chromosomal damage in cells in fetal amniotic fluid, including breaks in a key gene associated with risk for leukemia, according to a Spanish study reported in the March 9 *Journal of the American Medical Association*.

Although previous studies have found tobacco-specific metabolites in fetal blood and amniotic fluid, there are no data on the potential genotoxic effects of tobacco on the embryo and fetus. Researchers at Universitat Autònoma de Barcelona compared amniotic fluid drawn from 25 nonsmoking pregnant women with 25 women who smoked during pregnancy.

"Our results show that fetuses exposed to tobacco smoke *in utero* have increased chromosomal instability in amniocytes, expressed as an increase of structural chromosomal abnormalities and chromosomal lesions," the researchers wrote. For example, the proportion of structural chromosomal abnormalities was 12.1 percent in smokers, compared with 3.5 percent among the controls.

The researchers found breakpoints among the smokers in three chromosome bands known to be sensitive to genotoxic compounds in tobacco. Most significant were breaks in band 11q23 that "are known to be involved in leukemogenesis." The scientists concluded, "The transplacental exposure to tobacco could be associated with an increased risk of pediatric hematopoietic malignancies."

Breast Cancer Survivors More Likely to Get Fractures

The protective effect of estrogen on bone health can be compromised in women who are treated for breast cancer because of surgery to remove their ovaries, chemotherapy-induced menopause, prohibition of hormone replacement therapy for those with hormone-responsive tumors, and the effect of cancer itself. To confirm whether these conditions translate into higher fracture incidence, researchers from the Women's Health Initiative Observational Study followed 5,298 breast cancer survivors for 5.1 years and monitored their first-event fractures. Their results are published in the March 14 *Archives of Internal Medicine*.

Compared with a reference group of 80,848 women, those who had been treated for breast cancer reported a higher incidence of bone fractures in their vertebrae, lower arm or wrist, and other regions of the body except for the hip. The trend—which showed an overall 15 percent increased risk of fractures for breast cancer survivors—persisted after adjusting for hormone therapy, previous fractures, lifestyle, medication use, age, ethnicity, weight, and geographic region of enrollment.

The authors point out that self-reported data on non-hip fractures and lack of information on breast cancer diagnosis and treatment are limitations of this study, but conclude, "If our…results are confirmed by others, the excess number of fractures may be as high as 13,000 per year for the two million postmenopausal breast cancer survivors in the United States."

New Tumor Suppressor Gene Discovered in *Drosophila*

Researchers at Penn State University have discovered a new tumor suppressor gene in the fruit fly *Drosophila*. Termed *mats* (Mob as tumor sup-

pressor), this gene is the first member of the large Mob gene family that has been shown to play a critical role in inhibition of cell growth. The study, which appears in the March 11 *Cell*, also found that the protein encoded by *mats* is a co-activator of the Wts kinase, a known tumor suppressor protein. *Mats* and Wts have a synergistic effect in controlling cell growth and promoting apoptosis.

The researchers first identified *mats* as a mutant gene in a *Drosophila* line that had developed spontaneous tumors. Using genetic mapping techniques, they pinpointed the chromosomal location of the tumor-inducing gene and identified it as a member of the Mob family. Over 130 Mob members have been identified in a variety of organisms, although their cellular functions are not entirely understood. The researchers found that *Mats* could inhibit cell growth and promote cell death by interacting with several proteins, including the Wts kinase, enhancing kinase activity.

The researchers also found that introducing a normal *mats* gene into flies with a mutated copy could suppress tumor development. Introducing the human *Mats* gene into flies also produced the same effect. *Mats* mutations have been identified in human and mouse cancers, suggesting that this gene and others in the family may be a new class of tumor suppressors in mammals. ◆

CCR Grand Rounds

March 29: Dr. John D. Potter, Senior Vice President, Fred Hutchinson Cancer Research Center.
"Toward the Last Cohort."

April 5: Dr. Dan Theodorescu, Director, Paul Mellon Prostate Cancer Institute.
"RhoGDI2—A New Metastasis Suppressor in Bladder Cancer: Discovery and Clinical Translation."

Funding Opportunities

The NIH Roadmap for Medical Research Funding *provides a framework of the priorities NIH must address to optimize its research portfolio. It identifies the most compelling opportunities in three main areas: new pathways to discovery, research teams of the future, and re-engineering the clinical research enterprise. For complete information on Roadmap funding opportunities, go to http://nihroadmap.nih.gov. Newly released Roadmap funding opportunities are listed below:*

2005 NIH Director's Pioneer Award
NIH is accepting nominations for the 2005 NIH Director's Pioneer Award. This program, a High-Risk Research Initiative of Research Teams of the Future, is meant to complement NIH's traditional, investigator-initiated grant programs by supporting individual scientists of exceptional creativity who propose pioneering approaches to major contemporary challenges in biomedical research. Self-nominations should be submitted online at http://nihroadmap.nih.gov/pioneer/NominateSelf.aspx and will be accepted through April 1, 2005.

Meeting on Structural Analysis of Large Macromolecular Assemblies

June 2-3, 2005, William H. Natcher Conference Center, NIH, Bethesda, Md.
Despite the advances in structural biology in the past decade, significant challenges remain. One critical area is large macromolecular assemblies. Large assemblies accomplish many of the core functions of the cell. To understand their mechanism of function, we must understand their structure. To help focus the structural biology community's thinking in this area, we invite you to attend this meeting where eminent scientists will present their research and share their views regarding the major challenges ahead. Meeting sponsors include the NIH, the National Science Foundation and the U.S. Department of Energy. For more information and to register, please go to http://pub.nigms.nih.gov/LargeAssemblies.

Following are newly released NCI research funding opportunities:

Collaborations with National Centers for Biomedical Computing

PAR-05-063
Letter of Intent Receipt Dates: Apr. 19 and Dec. 19, 2005; Apr. 19 and Dec. 19, 2006; Apr. 19 and Dec. 19, 2007; Apr. 19 and Dec. 19, 2008

Application Receipt Dates: May 17, 2005; Jan. 17 and May 17, 2006; Jan. 17 and May 17, 2007; Jan. 17, 2008

This funding opportunity will use the R01 award mechanism. For more information see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=2660. Inquiries: Dr. Jennifer Couch—couchj@mail.nih.gov.

Cancer Education (R25E) Grants Program

PAR-05-065
Application Receipt Dates: May 10 and Sept. 10, 2005; Jan. 10, May 10, and Sep. 10, 2006; Jan. 10, May 10, and Sept. 10, 2007; Jan. 10, 2008

This funding opportunity will use the R25 award mechanism. For more information see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=2680. Inquiries: Dr. Mary C. Blehar—mblehar@mail.nih.gov.

For comprehensive information about NCI funding priorities and opportunities, go to http://www.cancer.gov/researchandfunding.

Legislative Update

NCI Testifies at House Appropriations Hearing

NCI Director Dr. Andrew C. von Eschenbach joined NIH Director Dr. Elias Zerhouni and other NIH institute directors in testifying at a March 9 hearing on the fiscal year 2006 NIH budget before the House Appropriations Subcommittee of the Departments of Labor, Health and Human Services, and Education. The Administration's budget request of $28.7 billion for NIH includes $4.8 billion for NCI, a $16.5 million increase over FY 2005.

In his statement to the Subcommittee, Dr. Zerhouni highlighted the progress being made in cancer research and in reducing the cancer disease burden. Dr. Zerhouni cited decreases in mortality for 8 of the 15 cancers that affect men and 7 of the 15 that affect women, with a 1.1 percent reduction in death rate, as evidence of the "deceleration of the burden of disease due to cancer."

Subcommittee Chairman Ralph Regula (R-Ohio) asked Dr. von Eschenbach about NCI's efforts to foster development of health information systems. The director provided the subcommittee with an update on the caBIG initiative. The goal is to "create a 'World Wide Web' for cancer research," Dr. von Eschenbach said. During the initial year of caBIG, he continued, NCI has worked with the nation's major cancer centers to develop an open electronic infrastructure to support research collaborations.

In his written testimony, Dr. von Eschenbach also noted that caBIG has

(continued on page 7)

Featured Clinical Trial

More Effective Treatment for Colorectal Metastases to the Liver

Name of the Trial

Phase II Study of Isolated Hepatic Perfusion With Melphalan in Patients With Unresectable Colorectal Cancer Metastatic to the Liver and Refractory to First-Line Systemic Chemotherapy (NCI-04-C-0229). See the protocol summary at http://cancer.gov/clinicaltrials/NCI-04-C-0229.

Principal Investigators

Dr. H. Richard Alexander, NCI Center for Cancer Research.

Why Is This Trial Important?

More than 145,000 people in the United States will be diagnosed with colorectal cancer this year, making it the third most common cancer in the United States. Approximately half of diagnosed patients will suffer from advanced disease that has spread (metastasized) to other parts of the body, most commonly to the liver. Nearly 70 percent of the deaths attributed to colorectal cancer occur in patients who have liver metastases.

Many metastatic colorectal tumors in the liver cannot be removed surgically and often respond to systemic combination chemotherapy for only a short time.

In this phase II study, researchers are using a surgical procedure known as isolated hepatic perfusion (IHP) to deliver melphalan, an anticancer drug, directly to the liver while avoiding unnecessary systemic toxicity. Melphalan causes significant regression of metastatic tumors in the liver when given at very high doses, an effect that can help extend the lives of some patients for many months. Isolated perfusion was developed to confine drugs such as melphalan to a target organ or limb, thus sparing normal tissues from toxic effects.

Dr. H. Richard Alexander
Principal Investigator

"We can think of IHP as a physical method of targeting relatively nonspecific anticancer drugs to the sites of metastatic disease," said Dr. Alexander. "Because it is a one-time therapy with notable antitumor activity, we hope it will substantially improve the quality of life of patients with refractory advanced colorectal cancer."

Who Can Join This Trial?

The researchers will recruit 30 patients over 18 years of age diagnosed with colorectal cancer metastases of the liver. See the complete list of eligibility criteria at http://cancer.gov/clinicaltrials/NCI-04-C-0229.

Where Is This Trial Taking Place?

The study is taking place at the NIH Clinical Center in Bethesda, Md.

Contact Information

For more information, call the NCI Clinical Studies Support Center at 1-888-NCI-1937. 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

caBIG Annual Meeting Set for April

The 2005 caBIG Annual Meeting will take place April 12-13, 2005, at the Bethesda Marriott in Bethesda, Md. caBIG, which was launched in 2004, is an NCI initiative in partnership with over 50 NCI-designated Cancer Centers. The meeting will highlight the ways in which caBIG is delivering open-source, open-access tools, applications, data, and standards developed by the caBIG community to accelerate cancer research, prevention, and care. Anyone working in biomedical informatics or clinical research informatics is welcome to attend.

A meeting overview and information on registration and accommodations are available at http://caBIG.nci.nih.gov/2005_Annual_Meeting. Online pre-registration is required.

FDA Cautions Doctors on Eczema Drugs and Cancer Risk

The Food and Drug Administration (FDA) issued an advisory to doctors on March 10 urging caution in prescribing two drugs used to treat eczema because of possible cancer risk.

Pimecrolimus (Elidel), made by Novartis, and tacrolimus (Protopic), made by Fujisawa Healthcare, will receive new label warnings saying that an increased risk of cancer may be associated with their use, the FDA said. Both drugs are applied to the skin to control eczema by suppressing the immune system.

Animal tests have shown an increase in cancer associated with the drugs, and a small number of cancers have been reported in children and adults treated with the drugs, the FDA said. The agency added that the manufacturers have agreed to do further tests to determine the actual risk, although both companies contended that the products have not been tied to cancer.

OCCAM TA Workshop Set for June

NCI's Office of Cancer Complementary and Alternative Medicine will hold a technical assistance workshop June 27-28 in Bethesda, Md., on "How to Write a Grant in Cancer CAM." Attendees will learn first-hand from NIH program directors, researchers who have received CAM research funding, and representatives of organizations that sponsor research about the different types of funding mechanisms for cancer CAM research, as well as details on grant preparation, development, assignment, review, and awards.

Investigators new to cancer CAM research and/or those who are struggling with the NIH grant application process are invited to attend. Space is limited to 20 applicants. To apply, investigators must submit a short description of their cancer CAM research proposal that relates to the prevention, diagnosis, or treatment of cancer, its symptoms, or treatment of side-effects. The submission deadline is April 1. For more information, contact Dr. Hasnaa Shafik at 301-435-7980 or at shafikh@mail.nih.gov.

Cancer.gov Gets High Marks Again

For the second consecutive quarter, the NCI Web site, http://www.cancer.gov, received a top score among government Web sites on the American Customer Satisfaction Index first quarter report for 2005. The site's online customer satisfaction score was 80 on the 100-point scale for Web Portals/Department Main Sites, outperforming the E-Government average score of 71.9. A total of 59 federal government sites were scored in the quarter.

NCI launched a redesigned Web site in May 2004 with improved navigation and functionality for users, the majority of whom are first-time visitors with a pressing need for information. In November 2004, the site won a FREDDIE Award, also known as the International Health and Medical Media Information Award. ◆

(Legislative Update continued from page 6)

begun to bear its first fruits with the release of NCI's caArray, "a prototype software application that is made freely available to facilitate the sharing and analysis of microarray data by the medical research community." NCI and its partners are also developing an online information infrastructure to support clinical trials management and electronic drug approval submissions to the FDA, he noted. "The first system module—the Federal Investigator Registry (Firebird)—starts pilot testing this spring."

Representative Nita Lowey (D-N.Y.) asked about the progress being made on breast cancer early diagnosis and treatment. Dr. von Eschenbach outlined NCI's comprehensive research approach to the disease, including identification of biomarkers for early stage disease, the risks for relapse, and identifying best treatment approaches.

Representative Randy Cunningham (R-Calif.), a prostate cancer survivor, thanked Dr. von Eschenbach for conducting talks on prostate cancer in the San Diego and Washington, D.C., areas. Noting the high attendance at both meetings, Rep. Cunningham highlighted how communities collectively have expressed interest in learning about and discussing the disease. ◆

Community Update

Proteomics Research Center Honors Biomarker Pioneer

The new George L. Wright, Jr., Center for Biomedical Proteomics, in Norfolk, Va., is 1 of 20 laboratories working through the NCI Early Detection Research Network (EDRN) to develop biomarkers for specific cancers. But the individual for whom the new research center at Eastern Virginia Medical School (EVMS) was named is, himself, more like 1 in 10,000.

"George Wright was focused on the heart of the biomarker problem long before the term proteomics was first uttered by a scientist," says EDRN Director Dr. Sudhir Srivastava. "The term 'pioneer' fits him like a glove, because of the obstacles he faced and overcame to develop one of the seminal proteomics labs in the country. He was tenacious with ideas that were far from mainstream, and the field will be shaped by his contributions for years to come."

Dr. Srivastava joined Dr. Wright and Dr. Oliver Semmes, the center's current director at the February 24 dedication ceremony for the new EVMS research facility.

Proteomics, explained Dr. Wright, is "the study of expressed proteins, elucidating their structure, function, and how they interrelate, especially in normal versus disease conditions." He has seen the field come a long way, though he warns that "discovering and analyzing proteins has historically been a daunting task, and we still have a long way to go. We're closing in, however, with some very powerful new tools," he said, alluding to a biochip microarray that is hardwired to discriminate between protein expression fingerprints from normal and cancerous tissue.

Dr. Wright has concentrated on prostate cancer, and over the last dozen years has seen the value of the once revolutionary prostate specific antigen test prove increasingly limited. Scientists have been evolving better ways to characterize protein structure, function, and behavior, and Dr. Wright has been a major force driving a new imaging technology called surface-enhanced laser desorption time-of-flight mass spectrometry , which "holds great promise," he said. A recent study from Dr. Semmes' lab at the proteomics center and five other ERDN sites confirmed that this method of imaging proteins can reliably be used across labs in different locations. (See *NCI Cancer Bulletin*, Jan. 25, 2005.)

In a collaboration with another EDRN partner, the Fred Hutchinson Cancer Institute in Seattle, Dr. Wright's group demonstrated a clinical test for prostate cancer that is more specific and sensitive than the test currently in use. "We may be able to detect incipient cancers as much as 5 years earlier," he said. EDRN continues to mount multicenter trials to validate this clinically promising breakthrough.

EDRN's mission is to discover markers that might appear in cancer patients at an earlier stage than do current screening methods. Dr. Srivastava stresses the importance of the final step in the biomarker discovery process: translating basic science findings into clinical tools by fostering collaboration among scientists across the development spectrum. ◆

Featured Meetings and Events

A comprehensive calendar of cancer-related scientific meetings and events sponsored by NCI and other scientific organizations is available at: http://calendar.cancer.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.

NCI Cancer Bulletin staff can be reached at ncicancerbulletin@mail.nih.gov.