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Second Cancers Deserve More Attention

More than 10 million people in the United States are living with cancer, a population of survivors that has tripled in size since 1970. Long-term survivors face increased risk of many health problems, including subsequent cancer, either by recurrence of their original disease or a new primary cancer.

A new analysis from scientists at the Division of Cancer Control and Population Sciences (DCCPS) used Surveillance, Epidemiology and End Results (SEER) data to develop what they believe is the first population-based estimate of the number of people living who have had a diagnosis of more than one primary cancer.

The current estimate puts the number of people in the United States diagnosed with more than 1 primary cancer at 756,467, which represents 8 percent of all those living with cancer, and 0.26 percent of the total U.S. population. The research was published in the March issue of *Cancer Epidemiology Biomarkers & Prevention*.

"It's important for clinicians to recognize that cancer survivors have the same or higher risks, com-

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Director's Update

Strong Leadership for Scientific Progress

I am very pleased to announce that Drs. Robert H. Wiltrout and Lee Helman have been appointed as Scientific Directors (SD) of NCI's Center for Cancer Research (CCR). Both have been serving in acting roles: Dr. Wiltrout as the SD for CCR and Dr. Helman serving under him as the SD for Clinical Research. Drs. Wiltrout and Helman have filled these positions superbly on an acting basis for the last several years.

Dr. Lee Helman (center) in his lab at NCI's Center for Cancer Research

Dr. Wiltrout's leadership of CCR has been unparalleled. He has done an excellent job of leading CCR in the current budgetary environment and has championed the importance of innovative, collaborative research, including overseeing the creation of four CCR Centers of Excellence to foster team science.

Similarly, Dr. Helman, a world expert

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pared to the general population, of developing another cancer and will require appropriate long-term medical surveillance," said Dr. Angela B. Mariotto, the first author in the DCCPS study. She advocates the development of treatments tailored for this uniquely vulnerable population, since treatment for the first cancer might limit what can be given when a new cancer is diagnosed.

In the near future "the number of multiple malignancies will almost surely increase," Dr. Mariotto predicted, as the baby boom generation reaches the age where cancer incidence rises and individuals diagnosed with cancer continue to live longer.

A recent monograph published by the Division of Cancer Epidemiology and Genetics and DCCPS also uses SEER data to quantify the site-specific risks of developing a secondary cancer. The results show which specific cancers are more likely to follow a first cancer, and that overall cancer survivors have a 14 percent higher risk of developing a new malignancy than would be expected in the general population.

A study in the March 21 *Journal of the American Medical Association* focused only on second cancers that developed in long-term survivors of acute lymphoblastic leukemia (ALL), the most common childhood cancer in the United States. Almost 4,000 cases are diagnosed each year, and currently more than 80 percent of these children are cured, using the criterion of no recurrent disease for 10 years.

Dr. Nobuko Hijiya from St. Jude Children's Research Hospital in Memphis and colleagues analyzed the records of 2,169 newly diagnosed ALL patients who participated in clinical trials at St. Jude between 1962 and 1998 and who achieved complete remission. After a median follow-up time of 18.7 years, 7.7 percent of survivors had developed secondary neoplasms. When the less aggressive cancers—basal cell carcinoma and meningioma—were excluded, the rate was 13.5 times greater than that of the general population.

After 15 years, 4.17 percent of ALL survivors had developed a second cancer. Previous studies had suggested the incidence of second cancers may level off after about 15 years, but the authors believe that much of these data were limited by relatively incomplete and short follow-up times. Cumulative incidence in the ALL study rose sharply after about 20 years and had not leveled off at 30 years, by which time it had reached 10.85 percent.

"Data on the occurrence of second cancers remind us that cure is not enough," said Dr. Julia Rowland, director of NCI's Office of Cancer Survivorship. "Surviving cancer provides a 'teachable moment' we can use to focus attention on appropriate cancer screening and other healthy lifestyle behaviors for survivors and their family members as well." ◆

By Addison Greenwood

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on childhood sarcomas, is an outstanding leader who directs a highly successful basic and translational research program, and has made many key contributions to the national and international cancer community. Dr. Helman has demonstrated his ability to provide outstanding leadership of the NCI clinical branch chiefs. He has worked tirelessly with Dr. Wiltrout to fill several key leadership positions in the CCR clinical research program.

These permanent appointments represent an exciting development. In particular, I believe we are now in an excellent position to significantly enhance the influence and effectiveness of NCI's clinical program. There will be a renewed focus on speeding the transfer of important discoveries being made by CCR basic scientists into first-in-human and early-phase clinical trials led by clinical program scientists at the NIH Clinical Center. Drs. Helman and Wiltrout will work closely to identify the most promising findings, bring them forward to the clinic, and take full advantage of those clinical studies to further inform the underlying science.

For example, nearly every clinical study done by CCR researchers will be able to rely on the CCR Clinical Molecular Profiling Core (CMPC) established in the past year. Headed by Dr. Paul Meltzer, chief of the CCR Genetics Branch, the CMPC will offer CCR clinical scientists access to a suite of technologies used to perform genetic and epigenetic characterization of biospecimens collected during the course of their trials.

Clinical studies conducted at the NIH Clinical Center also will routinely rely on the expertise of CCR's Molecular Imaging Program, headed by Dr. Peter Choyke, to use state-of-the-art functional imaging to do things like track patients' responses to investigational agents in real time.

I also expect to see greater collaboration between the clinical program and NCI's extramural divisions to determine priority areas for joint efforts to help answer important clinical questions and, when possible, leverage resources.

We also hope to have greater collaboration between NCI intramural
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Cancer Research Highlights

Imatinib 'Treatment Holiday' Risks Disease Progression

Results from a randomized European trial published in the March 20 *Journal of Clinical Oncology* (*JCO*) show that patients whose advanced gastrointestinal stromal tumors (GIST) are controlled with the drug imatinib risk rapid progression of disease if treatment is interrupted.

Imatinib can provide tumor control and prolong overall survival in up to 90 percent of patients with advanced GIST. The side effects of imatinib are usually mild but often chronic. Because the standard of care for GIST is to administer imatinib until tumor progression or recurrence develops, patients who experience adverse effects from the drug sometimes request a treatment interruption if their cancer is under control. However, no clinical studies have looked at whether treatment interruption is safe for these patients.

Investigators randomly assigned 58 patients who had taken imatinib for more than 1 year and whose disease was under control to either continuation of treatment or treatment interruption. Of the 26 patients continuing treatment, 8 experienced disease progression. In the treatment interruption arm, 26 of 32 patients experienced disease progression, causing the trial to be stopped and physicians to recommend that all patients restart imatinib treatment.

Of the 26 patients in the treatment interruption arm who chose to restart imatinib, 24 again achieved tumor control. No difference in overall survival was seen between the two arms; however, explained the authors, the study was not designed to demonstrate equivalence in survival or increased resistance to imatinib after treatment interruption. They concluded that for GIST, "imatinib discontinuation…cannot be recommended in routine practice."

Annual Zoledronic Acid Increases Bone Density in Prostate Cancer Patients

A small, placebo-controlled, randomized clinical trial has shown that a single dose of zoledronic acid was sufficient to increase bone mineral density (BMD) over 12 months in men with nonmetastatic prostate cancer receiving gonadotropin-releasing hormone (GnRH) agonists, which have been associated with decreased BMD and increased fracture risk.

In the trial, published in the March 20 *JCO*, 40 men with nonmetastatic prostate cancer being treated with a GnRH agonist were randomly assigned to a single 4 mg intravenous dose of zoledronic acid or placebo. Of these, 36 patients completed BMD testing 12 months later. Participants on placebo experienced BMD decreases in the four bone locations assessed in the study. Participants given zoledronic acid, on the other hand, experienced BMD increases at the sites. The greatest cumulative BMD difference between the two groups, 7.1 percent, was seen at the posteroanterior lumbar spine, the portion of the vertebral column in the lower back. Zoledronic acid also decreased levels of N-telopeptide, a biomarker of activity of osteoclasts, cells involved in bone loss and remodeling.

Similar BMD improvements were seen in a trial in which zoledronic acid was given to prostate cancer patients every 3 months for 1 year. "The similarity of BMD results and persistent suppression of serum N-telopeptide," wrote lead author Dr. Matthew R. Smith from Massachusetts General Hospital, and colleagues, "suggest that annual zoledronic acid is sufficient to prevent bone loss in hypogonadal men."

The research team cautioned against overinterpreting the study, which was not powered to determine whether there was an impact on fracture risk. In an accompanying editorial, Dr. Celestia S. Higano from the University of Washington echoed this sentiment, arguing that the results do not mean that zoledronic acid can be used less frequently when treating prostate cancer patients with bone metastases "if the intention is to decrease the risk of skeletal complications."

Surgery Does Not Improve Survival for Advanced NSCLC Patients

Patients with stage IIIA-N2 non-small-cell lung cancer (NSCLC) who had surgery following induction chemotherapy did not have better overall or progression-free survival than patients who received radiotherapy following chemotherapy. These results are published in the March 21 *Journal of the National Cancer Institute.*

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(Highlights continued from page 3)
Dr. Jan P. van Meerbeeck of the University Hospital Ghent in Belgium and colleagues conducted a multicenter prospective randomized trial that included 579 eligible patients with stage IIIA NSCLC and positive lymph nodes (N2) from 41 institutions of the European Organisation for Research and Treatment of Cancer-Lung Cancer Group from December 1, 1994, to December 1, 2002.

Patients were given induction chemotherapy, which consisted of three cycles of cisplatin or carboplatin, with at least one other chemotherapy drug. Of the 579 eligible patients, 332 patients were randomly assigned to surgical resection or thoracic radiotherapy. One hundred fifty-four patients in each arm completed treatment as assigned.

Researchers found that surgery didn't improve overall or progression-free survival in patients. The median survival time was 17.5 months in the radiotherapy arm and 16.4 months in the surgery arm. The 5-year overall survival rate was 14 percent for patients who received radiotherapy and 15.7 percent for those who had surgery, a difference that was not statistically significant.

In an editorial, Drs. David H. Johnson, Valerie W. Rusch, and Andrew T. Turrisi noted that the "data indicate that chemoradiation therapy remains an appropriate therapeutic strategy for the subset of IIIA NSCLC patients with preoperatively detected N2 disease. The results also emphasize the importance of careful patient selection for surgery and of the type of lung resection." They also commented, "As we move forward, it is our dream to also focus on prospectively validating putative molecular markers of prognosis, drug sensitivity, and resistance. Hopefully, these promising technologies can be used to guide patient selection and treatment decisions in the future."

Hodgkin Lymphoma Survivors Have Increased Lifetime Risk of Solid Cancers

Survivors of Hodgkin lymphoma (HL) likely have a significantly increased risk of solid cancers throughout their lives, according to a new study that analyzed several variables influencing risk in this patient population. Results from the international study, published online March 19 in *JCO*, give estimates of risk that can help in risk assessment and screening plans for survivors.

Investigators used data from 18,862 people with HL who had survived for at least 5 years after diagnosis, collected from NCI's SEER program and 4 European registries. Variables used in the risk model included sex, year of HL diagnosis, age at HL diagnosis, initial treatment received, and age at diagnosis of solid cancer.

Of the 1,490 solid cancers that were identified, approximately 850 were estimated to be in excess. The risk of developing a solid cancer depended on age at diagnosis of HL, attained age, and sex, with women diagnosed at young ages having the highest risk. The patterns of risk differed between types of solid cancer and the most common sites for excess cancer were the female breast, lungs, and colorectum.

For both colorectal and breast cancers, young HL survivors had absolute risks comparable to those observed in the general population in the age ranges in which screening would normally be recommended (age 50 and above for colorectal screening, age 40 and above for mammography), suggesting that HL survivors would benefit from earlier routine screening.

"This is the first study to quantify the cumulative sex-specific risk of solid cancer for specific ages at Hodgkin lymphoma diagnosis," explains Dr. Ethel Gilbert, from NCI's DCEG, one of the authors of the study. "For current survivors, there is a need to investigate interventions to reduce the morbidity and mortality caused by second cancers," conclude the authors. ◆

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investigators in CCR and NCI-funded extramural investigators, taking advantage of synergies between individual investigators' work and expertise in the hope of translating promising basic findings more quickly into new interventions.

One of the first examples of these new collaborations is already underway. Dr. Samuel Wells, a leading expert on medullary thyroid carcinoma (MTC), from Washington University in St. Louis, and Dr. Frank Balis from the CCR Pediatric Oncology Branch will serve as co-principal investigators on an exciting phase I/II trial. The trial will test an investigational agent, vandetanib, a tyrosine kinase receptor inhibitor, to treat hereditary MTC in children and adolescents, a rare disease for which there are limited treatment options.

By building on the Institute's strengths in basic, clinical, and translational research and expanding collaboration both intramurally and extramurally, I believe we will see the influence of NCI's clinical program grow and its ability to bring new interventions to patients significantly enhanced. ◆

Dr. John E. Niederhuber
Director, National Cancer Institute

Special Report

Cancer Epigenetics

Standards for Basic Research May Speed Clinical Tests

The concept of detecting cancer in DNA from bodily fluids has been around for more than a decade. But despite many promising feasibility studies, the strategy, which tests genes for a chemical change called methylation, has not yet made it to the clinic. New studies sponsored by NCI's Early Detection Research Network (EDRN) could change that.

Methylation can silence genes that normally suppress tumors, and methylated DNA has been detected in the saliva, sputum, urine, and blood of cancer patients. In the coming months, EDRN researchers will ask whether improperly methylated genes can be used to assess cancer risk and detect the disease early, when it may be treatable.

The studies will be the first to use a high-quality collection of samples and a semi-quantitative technology, real-time methylation-specific PCR. This technology generated reproducible results in a previous study sponsored by EDRN.

"The goal is to nail down a manageable set of markers that could be used in a clinical study for one or more cancers," says Dr. Sudhir Srivastava, a leader of EDRN in NCI's Division of Cancer Prevention.

"We are looking at molecular changes that put a person at high risk of developing cancer," he adds.

Methylation is an epigenetic change, which means that it can alter the activity of a gene without causing a change in the DNA sequence. Cells normally use methylation to regulate genes, but a breakdown in the system can lead to the silencing of genes that protect against cancer. This often occurs early in the disease.

The field of cancer epigenetics exploded in the mid-1990s when methylation was shown to inactivate genes involved in cancer. A few years later, researchers detected methylated tumor-suppressor genes in the urine of patients with prostate cancer and in blood from lung cancer patients. Tumor-suppressor genes are rarely methylated in normal cells.

Dozens of subsequent studies proposed panels of markers for diverse cancers. But few, if any, of these panels were validated, and the field has had difficulty replicating findings. There are good reasons for this, researchers say: Cancers are genetically diverse, laboratories use different procedures and technologies, and samples vary in quality.

To address these issues, EDRN has created standards for developing and validating methylated markers. Guidelines and recommendations for reagents, tools, and protocols for measuring methylation were discussed at a 2005 workshop between EDRN and the National Institute of Standards and Technology.

The meeting also produced protocols for the collection and processing of body fluids, which can influence results. A summary is to be published soon in *Cancer Research*.

With the standards in place, new studies are set to begin. Drs. David Sidransky of Johns Hopkins Medical Center and Adi Gazdar of the University of Texas Southwestern Medical Center and their colleagues will study markers for lung cancer in sputum.

Dr. Paul Cairns of the Fox Chase Cancer Center and his colleagues will focus on markers for kidney and bladder cancers in urine, as well as markers for breast cancer in blood.

"Only now has a consensus emerged so that investigators in different labs could test samples using the same technology," says Dr. Cairns. "We hammered out the main issues at EDRN meetings in 2005 and 2006, and we are now moving ahead."

Progress in the field has been slowed by practical issues. Profiling methylation requires more time and materials than DNA sequencing, and there are no tools for detecting methylation sites throughout the genome. Many of the genes being studied were selected because they appeared to be promising candidates.

"But these genes are not necessarily the best ones for our purposes," notes Dr. Cairns. The field needs an optimized panel of genes for screening because no single gene is methylated in 100 percent of cancers, he adds.

Reliable samples have been another issue. Most feasibility studies have been done using conveniently avail-

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able sets of tumors. But validation requires high-quality samples from patients at various stages of cancer, individuals at high risk of the disease, and a carefully matched comparison group that is free of cancer.

The reference samples developed by EDRN and their collaborators meet these criteria. The samples are being collected prospectively and include detailed medical records.

Dr. William Rom of New York University Medical Center will provide the lung cancer samples. His collection includes individuals exposed to cigarette smoke and asbestos, which may affect methylation. The collection also has samples from individuals showing nodules and ground glass opacities in the lung. Both of these abnormalities increase the risk of developing lung cancer.

"Our goal is to pick the best genes among those we have identified as potential markers for lung cancer during preliminary trials and test them in a blinded set of samples," says Dr. Sidransky.

Clinical tests for individuals who are healthy must be sensitive enough to detect changes associated with cancer, but specific enough to ignore those that are not cancer. When the new results become available in a year or so, they will be evaluated by other EDRN teams.

Dr. Cairns is optimistic. "We need to go forward with today's best specimens, technology, and genes rather than just say, once again, that we're not ready for validation yet," he says.

Even failure, should it occur, could be productive by leading the field in new directions. "Getting the data out

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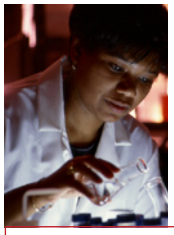

Featured Clinical Trial

Cilengitide for PSA-Only Progressive Prostate Cancer

Name of the Trial
Phase II Study of Cilengitide in Patients with Nonmetastatic Androgen-Independent Prostate Cancer (CCUM-2004-045).
See the protocol summary at http://cancer.gov/clinicaltrials/CCUM-2004-045.

Principal Investigator
Dr. Maha Hussain, University of Michigan Comprehensive Cancer Center

Why This Trial Is Important
Prostate cancer usually responds initially to treatment that reduces the level of male hormones in the body (antiandrogen therapy). However, most prostate cancers eventually continue to grow despite hormone deprivation (androgen-independent prostate cancer).

Measuring the level of prostate-specific antigen (PSA) in the blood is often used to determine the response of prostate cancer to treatment. A rising PSA level may indicate that active cancer cells remain in the body despite previous treatments to remove or destroy them. Often, a rising PSA level is the only signal that prostate cancer is still growing (PSA-only progression).

In this trial, men with PSA-only progression despite antiandrogen therapy will be treated with a drug called cilengitide. Cilengitide blocks receptor proteins called integrins on the surface of prostate cancer cells that may play a role in the ability of these cells to enter and exit the bloodstream, attach at potential sites of metastasis, and promote the formation of new blood vessels (angiogenesis). PSA level stabilization or decline would indicate that cilengitide can help control prostate cancer growth in these patients.

Dr. Maha Hussain

"Men with this stage of advanced prostate cancer are incurable and no standard treatment exists," said Dr. Hussain. "Our hope is that cilengitide can help contain micrometastatic cancer cells by preventing their spread and adhesion to bone, which is the most common site of prostate cancer metastasis, and by stopping their potential to establish new blood vessels."

Who Can Join This Trial
Researchers will enroll 32 men with confirmed prostate cancer diagnoses and rising PSA levels despite antiandrogen therapy. See the list of eligibility criteria at http://cancer.gov/clinicaltrials/CCUM-2004-045.

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://cancer.gov/clinicaltrials/CCUM-2004-045 or call 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

Azad Receives Young Investigator's Award

Dr. Nilofer Azad of the Medical Oncology Branch in NCI's Center for Cancer Research has been awarded a 2007 ASCO Foundation Young Investigator's Award for her research, "A Phase I Study of Combination anti-VEGF Therapy: Translational Biochemical, Cytokine, and Dynamic Imaging Analysis." As part of the award, she was given a 1-year grant to continue research in this area. Dr. Azad also received a 2007 ASCO Foundation Merit Award in recognition of her work.

CDC Promotes Eating More Fruits and Vegetables

The Centers for Disease Control and Prevention (CDC), in partnership with the Produce for Better Health Foundation and other health organizations including NCI, launched the "Fruits & Veggies—More Matters" campaign on March 19. The campaign, which replaces the 5 A Day program, encourages adults to eat more fruits and vegetables at every meal.

More information, including recipes, ideas, and shopping advice, can be found on the campaign's Web site: www.fruitsandveggiesmatter.gov.

DCLG to Meet This Week

The next meeting of the NCI Director's Consumer Liaison Group (DCLG) will take place on March 29 and 30 on the NIH campus. The meeting will feature updates from a number of NCI offices, as well as a presentation of the "NCI Listens and Learns" evaluation report. The meeting is open to the public all day March 29 and the afternoon of March 30, and will be videocast at http://videocast.nih.gov/. The agenda can be found at http://deainfo.nci.nih.gov/advisory/dclg/agenda.htm.

NCI Cosponsors Conference in India

On February 26–28, NCI's Office of International Affairs cosponsored the 5th Conference on Evidence Based Management of Cancers in India with the Tata Memorial Centre in Mumbai, India; the American Cancer Society; and the Indian Society for the Study of Lung Cancer. The 2nd Conference on Indian Society for the Study of Lung Cancer was held in conjunction with the conference. The primary focus of the meeting was tobacco epidemiology and prevention and the evidence-based management of lung cancer. Additional information about the meeting is available at http://tmc.gov.in/newsnevents/EMB2007/EBM%20INDEX.htm. ◆

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there will guide future research," says Dr. Srivastava.

Standards are critical to all areas of biomedical research, not just methylation markers, he stresses. The importance of standards is well known to the DNA microarray community, which developed guidelines to help researchers collect and share data.

"For anything we want to do in the future, such as proteomics, we need to have standards," Dr. Srivastava says. "This is the most important issue not just for NCI but also for NIH."

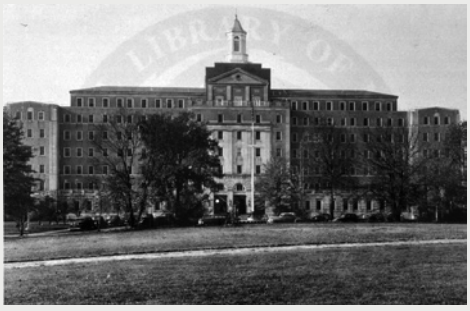
The EDRN collection of reference samples will be made available to researchers in other fields. ◆

By Edward R. Winstead

Funding Opportunities

For a complete listing of current NCI funding opportunities, please go to the HTML version of today's *NCI Cancer Bulletin* at http://www.cancer.gov/ncicancerbulletin/NCI_Cancer_Bulletin_032707/page8. ◆

70 YEARS OF EXCELLENCE IN CANCER RESEARCH



If Memory Serves…

Among the first clinical cancer research centers supported by NCI was the United States Marine Hospital in Baltimore. Funded in 1939, the center was designated to provide expert cancer care for patients east of the Mississippi River. (Read More) ◆

For more information about the birth of NCI, go to http://www.cancer.gov/aboutnci/ncia.

Community Update

New NIH Roadmap Initiatives Proposals Announced

Last month, NIH Director Dr. Elias Zerhouni announced five new strategic areas that have been selected as major initiatives for possible development in the NIH Roadmap for Medical Research for fiscal year 2008.

The NIH Roadmap is a series of programs jointly funded by all NIH institutes and centers (ICs), including NCI, via the Common Fund and by the NIH director. It is intended to be an "incubator space" for programs that, due to their cross-cutting relevance and/or complexity, warrant concerted attention from the NIH as a whole.

Last year, in preparation for the transition of the first cohort of Roadmap initiatives out of the "incubator space," NIH began a process of soliciting ideas for the next set of strategic trans-NIH Roadmap initiatives from external panels of scientific consultants, the internal NIH community, and from the broad stakeholder communities. The NIH Office of Portfolio Analysis and Strategic Initiatives (OPASI) coordinated a programmatic review of the submitted ideas. The IC directors also helped narrow the selection which resulted in five top areas picked to be considered for new Roadmap initiatives:

- **Microbiome**—Initiatives in this area would focus on developing a deeper understanding of the communities of microbes in the human body in order to determine how they affect health.
- **Protein Capture/Proteome Tools**—Efforts in this area would support developing and making available to the scientific community high-quality probes specific to every protein in the human and in desired animal models.
- **Phenotyping Services and Tools**—Initiatives in this area would encourage the development of resources to systematically catalog human phenotypes in an effort to characterize complex diseases and disorders.
- **Inflammation**—This initiative would be valuable in uncovering as-yet-unknown immune mechanisms and mediators of inflammation as well as genetic factors, environmental triggers, and the relationship of inflammation to disease.
- **Epigenetics**—Epigenetic changes have been associated with disease, but further progress requires the development of better methods to detect the modifications and a clearer understanding of factors that drive these changes.

Other areas of research that were not selected for further development as major Roadmap initiative proposals were highlighted as areas where additional information would be useful: regenerative medicine, pharmacogenomics, and bioinformatics. Roadmap coordination groups will assess current efforts in those areas and may propose activities that the NIH could undertake to foster collaborations across organ systems or diseases.

NCI Director Dr. John E. Niederhuber is co-chairing the work group for the Protein Capture/Proteome Tools initiative proposal. In addition, NCI staff members are serving on many of the other Roadmap working groups, coordinating groups, and pilot study groups.

Finally, Dr. Zerhouni also announced plans to consult with members of the biomedical research community in the next few months on areas where broad strategic thinking and planning are needed. These strategic planning activities will be focused in three areas: training, health disparities, and the science of science administration.

Plans for each of the five strategic Roadmap initiative proposals will be developed over the next few months. They will then be reviewed by the IC directors, the NIH director, and his advisory committee in order to determine Roadmap funding priorities beginning in fiscal years 2008 and 2009. ◆

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.