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New Compound Demonstrates Impressive Chemopreventive Potential

A new study reports exciting findings about a compound that may have significant potential as a chemopreventive agent for a number of different cancers. The compound, CDDO-Imidazolide (Im), prevented the development of precancerous lesions in the livers of rats exposed to aflatoxin, a naturally occurring toxin that can cause liver cancer in humans. The study was published in the February 15 *Cancer Research*.

The compound was extremely effective, even at very low doses, says the study's senior author, Dr. Thomas Kensler, a cancer biologist at the Johns Hopkins Bloomberg School of Public Health. The results, he continues, are the first proof of principle that triterpenoids, the class of compounds to which CDDO-Im belongs, work as chemopreventive agents and do so by activating a signaling pathway regulated by the transcription factor Nrf2.

In previously published studies, a group at Dartmouth Medical School led by Drs. Michael Sporn and Karen Liby, together with Hopkins scientists, showed that triterpenoids activated Nrf2 in cell culture. This transcription factor regulates the activity of a number of so-called phase 2 genes; these genes *(continued on page 2)*

Director's Update

Guest Update by Dr. John E. Niederhuber

Multiple PIs Will Promote Team Science

Conducting biomedical research has become a remarkably complex undertaking. Today, cancer researchers are asking highly sophisticated questions and proposing multifaceted scientific initiatives that require expertise from many individuals—individuals coming from quite different scientific backgrounds. These collective approaches, often using advanced technology platforms and intricate analytical tools, are allowing researchers the ability to apply a systems approach to the study of diseases such as cancer. Both the complexity of the research and the sophistication of the technology require a team approach.

As a result, cancer research has increasingly become a multidisciplinary effort led by a team of expert scientists. These days it is not atypical to have several expert principal investigators (PIs) come together, bringing varied areas of expertise such as high-volume microsequencing, protein chemistry, crystallography, and the application of mass spectroscopy and molecular immunology to bear on the question at hand—talents no longer possible in a single individual.

While this seems to be an obvious and straightforward approach for the current era of discovery, it is not without its barri- *(continued on page 2)*

(New Compound continued from page 1)
help protect the body from toxins by producing enzymes that disarm toxic molecules.

"What excited us about this new study," Dr. Kensler says, "is that it demonstrates that CDDO-Im targets Nrf2 *in vivo,* and this leads to a very powerful induction of a defense or cell-survival mechanism that makes these animals very highly resistant to challenges by carcinogens."

To conduct the study, which was partly funded by NCI, the research team, led by Dr. Melinda Yates, used a rat model developed at Hopkins that has been extensively used to investigate other compounds as chemopreventive agents against aflatoxin-induced liver cancer.

Compared with the animals that did not receive CDDO-Im, those treated with the lowest dose had an 85-percent reduction in precancerous lesions in the liver; at the highest dose, there was a greater than 99-percent reduction. Other tests showed that the expression of several important antioxidant and anti-inflammatory genes regulated by Nrf2 was elevated after a single CDDO-Im dose. Additional tests in mice that did or did not express Nrf2 confirmed that CDDO-Im functions via this signaling pathway.

Two other compounds, DT3 and oltipraz, have had strong results in the same rat model, explains Dr. James Crowell, chief of the Chemopreventive Agent Development Research Group at NCI. One of the most important findings in this new study, he says, is that, at the lowest doses, CDDO-Im was 30-fold and 100-fold more potent than either of those drugs, respectively.

As with these other compounds, CDDO-Im stimulates an antioxidant response, Dr. Crowell adds, which helps to eliminate a specific carcinogen. "This could apply to other environmental chemicals that have carcinogenic potential," he says.

With support from the NCI RAID program, Dr. Sporn, an NCI Eminent Scholar, and colleagues at Dartmouth, including Drs. Tadashi Honda and Gordon Gribble, who synthesized CDDO-Im and related compounds, have spent the last decade developing triterpenoids for chemoprevention and treatment.

"CDDO-Im is exceptionally potent," Dr. Sporn says. "Our cell culture screens predicted that."

A small company in Dallas, Reata Pharmaceuticals, is leading the clinical development of several CDDO compounds, one of which is being tested in a phase I trial at the University of Texas M.D. Anderson Cancer Center to treat leukemia.

In animal models, CDDO-Im is especially potent at inducing protective enzymes in the liver and intestine, Dr. Sporn says, which, in addition to liver cancer, suggests it might have some applications in inflammatory bowel disease, hepatitis, and the prevention of liver metastases from colon cancer, one of the leading causes of colon cancer death. ◆

By Carmen Phillips

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ers. For example, our current academic environment does not easily recognize or appropriately credit this team approach to science.

Allowing multiple PIs on a single award was one of the major recommendations from a 2003 symposium, "NIH Bioengineering Consortium Symposium on Catalyzing Team Science," and is consistent with the goals of the NIH Roadmap initiative.

Dr. Daniel Sullivan, who heads NCI's Cancer Imaging Program, played a central role in bringing about this change, serving as co-chair of the NIH committee that worked for more than a year to develop this new funding model. In fact, the first program incorporating the multiple-PI model will be the NCI Small Animal Imaging Resource (SAIR) Program. The announcement was published in the February 10 *NIH Guide for Grants and Contracts.*

The SAIR program funds extramural research aimed at generating innovation in small animal imaging which, in turn, is helping to develop imaging technologies to noninvasively measure and analyze biochemical, genetic, and pharmacologic processes in cancer patients. This program exemplifies team science: The research it funds involves investigators with expertise in imaging sciences, molecular biology, physics, chemistry, and computational sciences.

The multiple-PI approach will be an excellent option for many types of cancer research, including large epidemiological studies and clinical trials. In the latter case, for example, both the lead clinical investigator and lead biostatistician might be PIs, because each plays an important leadership role in the study and thus can receive appropriate credit and have incentive to devote the requisite time and attention to the study.

Other NCI programs considering the multiple PI model include those in nanotechnology and integrative cancer biology. Beginning in 2007, the multiple PI option is expected to be available for most investigator-initiated NIH grant mechanisms.

This new policy is not limited to PIs at a single institution and funds can be allocated to individual PIs. More infor-

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Spotlight

Fertility after Cancer Treatment: New Hope from New Research

Cancer is often thought of as a disease of the elderly, but it affects people of all ages, including infants, children, and young adults. With new therapies providing remission or cure for more and more patients, more and more cancer survivors are living with the side effects of treatment. One concern unique to younger cancer patients is the effect that treatment may have on their ability to have a family later in life. All of the standard therapies for cancer—surgery, radiation therapy, and chemotherapy—can negatively affect fertility under certain circumstances.

Most obvious is the effect of surgery on fertility. Removal of reproductive organs, such as the testicles, ovaries, or uterus, makes parenthood through normal means difficult to impossible. Even if the reproductive organs are not the primary target, radiation therapy to the pelvis or abdomen can permanently damage parts of the reproductive system. Chemotherapy drugs target rapidly dividing cells in the body, which include sperm cells and the protective layer of cells around a woman's eggs. The extent of the damage to the reproductive system depends on the type of drugs used, the dose received, and the patient's age at the time of treatment.

Recently, there has been a push from many fronts for greater awareness of the issues facing cancer survivors, including loss of fertility. Fertility preservation has become an active area of research, and new solutions are joining more mainstream techniques to provide new hope to patients.

For women, several surgical procedures for gynecologic cancer provide the option of preserved fertility. For example, some women with early-stage ovarian cancer can have surgery that only removes one ovary instead of both ovaries and the uterus. A new technique called abdominal radical trachelectomy can preserve the uterus for some women with cervical cancer.

But concerns remain about the rates of recurrence after fertility-sparing surgery for gynecologic cancer, and these techniques cannot prevent damage caused by radiation therapy and chemotherapy. For these reasons, work on the preservation and reintroduction of a woman's viable ovarian tissue has generated excitement in the cancer community. In 2004, the first healthy baby conceived using this technology was born. Autotransplantation is currently considered experimental, but may play a larger role in preserving women's fertility in the future.

Sperm banking has been a mainstay for men undergoing cancer therapy that might damage their ability to father children. But this technique is not useful for men with very low sperm count or sperm motility. Testicular sperm extraction is a new technique that removes sperm cells directly from testicular tissue. Some experimental assisted reproductive technologies such as intracytoplasmic sperm injection—the *in vitro* injection of a single sperm into an egg—can use surgically extracted sperm.

Along with technological innovation in the field comes a greater awareness that these issues need to be thoroughly discussed with young patients before treatment.

"We have to improve the technology, to figure out how to protect gonadal function during treatment, but we also have to heighten people's awareness, particularly in the medical community," says Dr. Ted Trimble of NCI's Gynecologic Cancer Therapeutics Program.

"Reproductive issues need to be considered and discussed with patients or, in the case of minors, with their parents," he continues. "In addition, after treatment, the issues of reproduction and sexuality need to be part of the standard things that you talk to people about."

In light of this new awareness, the Health Services Committee of the American Society of Clinical Oncology (ASCO) is developing practice guidelines on fertility preservation in cancer patients, which they hope to complete in the next few months.

"It came to the committee's attention that there was growing activity around fertility preservation in patients with cancer," explains Dr. Stephanie Lee of the Fred Hutchinson Cancer Research Center and a member of the ASCO committee, "and that this would be a good opportunity for ASCO to look at the available data and to produce some guidance for practicing oncologists."

The new guidelines will be available to physicians as well as members of the public who are interested in this quality-of-life issue. ◆

By Sharon Reynolds

Cancer Research Highlights

Calcium Plus Vitamin D Does Not Reduce Colorectal Cancer Risk, Study Finds

Taking daily supplements of calcium and vitamin D for 7 years did not reduce the risk of colorectal cancer in postmenopausal women, a large, randomized clinical trial has found. The supplements did, however, provide a modest benefit in bone health by preserving bone mass and preventing hip fractures, particularly in women over age 60.

The primary goal of the study was to test the effects of taking 1,000 mg of elemental calcium plus 400 IU of vitamin D_3 daily on bone health and, secondarily, on colorectal cancer risk. The trial included 36,000 women aged 50–79 from the Women's Health Initiative study; half took the supplements and the others took a placebo.

"The lack of an effect on colorectal cancer risk after 7 years was remarkably consistent overall and in all subgroups we examined," says Dr. Jean Wactawski-Wende of the State University of New York at Buffalo, who led the study. The only adverse effect of the supplements was an increase in kidney stones, according to findings in the February 16 *New England Journal of Medicine* (*NEJM*).

The researchers will follow the women for another 5 years. Colorectal cancer can develop slowly, and the study might not have been long enough to show the effects of the supplements. The trial ended just as the women were reaching the peak high-risk age for colorectal cancer, notes an accompanying editorial.

The researchers would have expected a difference in colorectal polyps during the trial if the supplements were thought to affect later colorectal cancer outcomes, says Dr. Wactawski-Wende. However, there was no difference in the number of self-reported colorectal polyps between the groups during the trial.

Response to Immunotherapy for Melanoma Tied to Autoimmunity

Patients treated for melanoma skin cancer with adjuvant interferon alfa-2b who developed clinical signs of autoimmunity were significantly more likely to respond to the treatment than patients who did not, a clinical trial has found. Autoimmunity occurs when the immune system begins to attack the body's own tissues.

Dr. Helen Gogas of the University of Athens Medical School and colleagues enrolled 200 patients in a substudy of an ongoing trial. They prospectively evaluated the presence of autoantibodies and clinical manifestations of autoimmune disorders in melanoma patients who received adjuvant therapy with high-dose interferon alfa-2b.

The development of autoimmunity was associated with an approximate reduction by a factor of 50 in the risk of recurrence of melanoma. The benefit of interferon alfa-2b was primarily restricted to patients who showed signs of autoimmunity, the researchers report in the February 16 *NEJM*.

Efforts to identify biological markers for predicting which patients might respond have generally not been successful.

Although the new findings do not provide biological markers for patients who may have "immune-sensitive tumors," the results suggest a mechanistic connection between autoimmunity and the benefit from interferon alfa-2b in melanoma patients, says an accompanying editorial.

The study provides "the strongest data to date connecting the development of autoimmunity with a favorable antitumor effect of immunotherapy," write Drs. Henry Koon and Michael Atkins of Beth Israel Deaconess Medical Center.

MRI Dye Exhibits Anticancer Effects

Researchers from the Université Paris-René Descartes in France report in the February 15 *Journal of the National Cancer Institute* that mangafodipir, a contrast dye used in magnetic resonance imaging, can both protect normal cells against chemotherapy-induced damage and amplify the effect of those drugs on cancer cells.

Leukocytes taken from healthy volunteers and exposed to paclitaxel, oxaliplatin, or 5-fluorouracil and simultaneous doses of mangafodipir experienced significantly less cytotoxicity than leukocytes exposed to any of the chemotherapy drugs alone. When paclitaxel alone was administered *in vivo* to BALB/c mice, the investigators recorded a significant decrease in blood counts. Co-administration of mangafodipir and paclitaxel abolished the hematologic toxicity.

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Three HHS Agencies Launch Cancer Biomarker Initiative

On February 14, NCI, the Food and Drug Administration (FDA), and the Centers for Medicare and Medicaid Services (CMS) announced the Oncology Biomarker Qualification Initiative (OBQI)—an agreement among the three agencies to collaborate on improving the development of cancer therapies and the outcomes for cancer patients through biomarker development and evaluation.

Biomarkers are biologic indicators of disease or therapeutic effects that can be measured through dynamic imaging tests, as well as by tests of blood, tissue, and other biologic samples. The OBQI is the first time these three U.S. Department of Health and Human Services (HHS) agencies have focused together on biomarkers as a way to accelerate the development and evaluation of cancer therapies.

"We are excited about this effort to speed the development and delivery of new cancer treatments for patients," said HHS Secretary Mike Leavitt. "By bringing together the scientific, regulatory, and delivery expertise of these three agencies, we can bring targeted, more personalized cancer diagnostics, treatments, and preventions to patients more rapidly."

The collaboration will develop scientific understanding of how biomarkers can be used to assess the impact of therapies and better match therapies to patients.

For instance, OBQI will address questions such as how particular biomarkers can be used to:

- Assess after one or two treatments whether a patient's tumor is responding to treatment
- Determine more definitively whether a tumor is dying, even if it is not shrinking
- Identify which cancer patients are at high risk of their tumor coming back after therapy
- Determine whether a patient's tumor is likely to respond at all to a specific treatment
- Efficiently evaluate whether an investigational therapy is effective for tumor treatment

"By identifying biomarkers for specific cancers and clinically evaluating them, researchers will have an evidence base for their use in targeted drug development and to determine which therapies are likely to work for patients before treatment selection," commented NCI Deputy Director and Deputy Director for Advanced Technologies and Strategic Scientific Initiatives Dr. Anna Barker. "Rather than waiting weeks to months to determine if a specific drug works for a patient, biomarkers could be used to monitor real-time treatment responses."

FDA Acting Commissioner and NCI Director Dr. Andrew C. von Eschenbach added, "An enhanced understanding of clinical biomarkers will help make the development of diagnostics and treatments more targeted, one of our most pressing goals under the Critical Path Initiative, FDA's program to modernize the medical product development process."

The first OBQI project to be implemented will validate and standardize the use of Fluorodeoxyglucose-Positron Emission Tomography (FDG-PET) scanning. PET scans are used to characterize biochemical changes in a cancer. Over the next several months, the OBQI team will design a number of initiatives to identify and clinically qualify other cancer biomarkers.

"There are many steps between a novel scientific idea with tremendous promise and a new drug reliably benefiting patients," said CMS Administrator Dr. Mark B. McClellan. "This collaboration will produce evidence that will help people with Medicare and Medicaid get better care more quickly, as a result of better targeted treatment decisions for cancer patients." ◆

CCR Grand Rounds

February 28: No Lecture due to CCR Fellows and Young Investigators Retreat, February 28–March 1.

March 7: Dr. Peter Greenwald, Director, Division of Cancer Prevention, NCI. "Clinical & Lifestyle Approaches to Cancer Prevention."

CCR Grand Rounds are held 8:30 to 9:30 a.m. at the NIH campus in Bethesda, Md., in the Clinical Center's Lipsett Amphitheater. ◆

Funding Opportunities

Nanomedicine Development Centers

Announcement Number: RFA-RM-06-007
Application Receipt Date: June 23, 2006.

This is a renewal of RFA-RM-04-018. This funding opportunity will use the PN2 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3339. Inquiries: Dr. Richard S. Fisher—fisherf@mail.nih.gov

Small Animal Imaging Resource Program

Announcement Number: RFA-CA-07-004
Letter of Intent Receipt Date: April 18, 2006.
Application Receipt Date: May 18, 2006.

This is a renewal of RFA-CA-04-011. This funding opportunity will use the U24 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3343. Inquiries: Dr. Barbara Y. Croft—bc129b@nih.gov ◆

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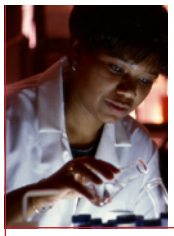
mation on this new policy is available on the NIH Web site at http://grants2.nih.gov/grants/multi_pi.

The individual investigator model will continue to be the predominant type of NIH grant award. But this new policy offers an excellent option for many investigators. I suspect that it will breed more translational research projects, bringing together laboratory-based investigators and clinician-scientists. I expect it will generate intense interest and, more importantly, foster quality science that will benefit many patients. ◆



Featured Clinical Trial

Targeted Therapy for Liver or Biliary Tract Cancer

Name of the Trial
Phase II Study of Lapatinib in Patients with Unresectable Hepatocellular Carcinoma or Biliary Tract Carcinoma (OSU-0447). See the protocol abstract at http://cancer.gov/clinicaltrials/OSU-0447.

Principal Investigator
Dr. Tanios Bekaii-Saab, Arthur G. James Cancer Hospital and Richard J. Solove Research Institute at Ohio State University

Dr. Tanios Bekaii-Saab

Why This Trial Is Important
Hepatocellular carcinoma (liver cancer) and biliary tract carcinoma (cancer of the bile ducts) are rare in the United States; however, patients with these cancers face a bleak prognosis if their tumors cannot be surgically removed.

In this clinical trial, researchers are testing the ability of a new drug called lapatinib to delay tumor growth and possibly improve the survival of patients with inoperable hepatocellular or biliary tract cancer. Lapatinib works by disrupting chemical signals that stimulate the growth and spread of cancer cells. Specifically, this drug blocks the activity of two tyrosine kinases (proteins involved in cell communication) called EGFR and HER2, which are found in increased amounts on some types of cancer cells, including hepatocellular and biliary tract cancers.

"Lapatinib represents a new generation of targeted therapies in that it targets multiple proteins that affect the growth and metastatic potential of cancer cells," said Dr. Bekaii-Saab. "The EGFR and HER2 proteins may work in tandem in these tumors, so it makes sense to employ an agent that can effectively block the activity of both proteins.

"Patients with inoperable liver or biliary tract cancer have very few options available to them," Dr. Bekaii-Saab said. "We hope that lapatinib will offer these patients a new and more effective treatment choice than traditional chemotherapy."

Who Can Join This Trial
Researchers seek to enroll 50 patients aged 18 and over with hepatocellular carcinoma or biliary tract carcinoma that cannot be surgically removed. See the list of eligibility criteria at http://www.cancer.gov/clinicaltrials/OSU-0447.

Study Site and Contact Information
Study sites in the United States are recruiting patients for this trial. See the list of study sites and contacts at http://www.cancer.gov/clinicaltrials/OSU-0447 or call NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). The toll-free call is completely confidential. ◆

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

Notes

Science Writers Learn About Translational Research

On February 14, 20 science reporters and other media representatives came to the Moores UCSD Cancer Center on the campus of the University of California, San Diego (UCSD) in La Jolla for the most recent in NCI's continuing series of seminars, "The Basics of Clinical Advances," which featured an update on NCI's translational research initiatives. Representatives from the *San Diego Union-Tribune* and other major local papers heard presentations from cancer researchers from NCI, UCSD, the Burnham Institute for Medical Research, and the Salk Institute for Biological Studies.

NCI's Dr. Jerry Collins discussed "NCI's role in turning discoveries into medicines;" Dr. Reuben Shaw of the Salk Institute described "How decoding circuitry underlying tumor development may lead to targeted cancer therapies;" Dr. Dwayne Stupack of UCSD spoke on "New opportunities to control tumor spread;" and Dr. Kristiina Vuori of the Burnham Institute discussed "From breakthroughs in the laboratory to the discovery of new drugs: San Diego Center for Chemical Genomics."

WHI Meeting to Discuss Study Results

On February 28–March 1, "The Women's Health Initiative Legacy to Future Generations of Women: Update on Scientific Contributions" will take place in the Natcher Auditorium on the NIH campus in Bethesda, Md. Representatives from the Women's Health Initiative (WHI) and other scientific organizations will discuss the recently released results from this randomized trial, which includes more than 161,000 women in all parts of the country. More information is available online at http://www.nhlbi.nih.gov/whi/references.htm.

Save the Date for Advocacy Conference

On June 19–20, NCI's Office of Liaison Activities will host "Listening and Learning Together: Building a Bridge of Trust," a meeting for the cancer advocacy community. The goal of the meeting is to bring together cancer advocacy organizations to develop ways to improve communication between and among NCI and advocates. The meeting will take place in the Natcher Conference Center on the NIH campus in Bethesda, Md. The event is free, but participants must register in advance; there will be no onsite registration. More information is available online at http://www.palladianpartners.com/NCISummit2006/index.htm.

Clinical Proteomics Meeting

A pre-application meeting for the Clinical Proteomic Technology Assessment for Cancer RFA will take place on Feb. 27 in the Natcher Conference Center at NIH. The meeting will outline the initiative and answer questions about the RFA (http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3342).

The meeting is free, but registration is required. To register, go to http://proteomics.cancer.gov. The meeting will be webcast at http://videocast.nih.gov. Inquiries: Dr. Adam Michael Clark—clarkad@mail.nih.gov. For the latest news from the NCI Clinical Proteomic Technologies Initiative for Cancer, sign up at http://proteomics.cancer.gov/email_signup.asp. ◆

(Highlights continued from page 4)

The investigators next looked at the effect of co-administration of mangafodipir and chemotherapy drugs on cancerous cells. The combination of mangafodipir and any of the three drugs used in the *in vitro* experiments significantly increased the toxicity to cancer cells. *In vivo*, mice implanted with CT26 tumor cells developed smaller tumors when treated with both mangafodipir and paclitaxel than with paclitaxel alone.

Mangafodipir belongs to a class of compounds that can protect normal cells from hydrogen peroxide-induced apoptosis. Exposure of tumor cells to paclitaxel, oxaliplatin, and 5-fluorouracil can, among many other effects, increase intracellular levels of hydrogen peroxide (H_2O_2). The investigators postulate that the opposite effects of mangafodipir seen in normal and cancerous cells are due to different baseline levels of reactive oxygen species, including H_2O_2 in tumor versus normal tissues. To follow up on these positive results, the authors have planned clinical studies in humans to evaluate the safety and efficacy of the compound as an adjuvant to paclitaxel-based chemotherapy.

In an accompanying editorial, Dr. James Doroshow, director of NCI's Division of Cancer Treatment and Diagnosis, seconds the need for clinical studies, stating that "the optimal study venue for agents that target the intracellular oxidant milieu of tumors may well be early-phase clinical trials." This is due to both the biological variability found in different model systems and the need to test drugs at concentrations actually used in treatment, as "the concentrations of paclitaxel, oxaliplatin, and 5-fluorouracil used for these experiments were far in excess of those achieved in routine clinical practice," explains Dr. Doroshow. ◆

Community Update

Workshop Seeks to Turn the Tide Against Cancer Health Disparities

One of NCI's strategic priorities is to overcome cancer health disparities—how the burden of cancer disproportionately affects underserved, racial, and ethnic minority populations. During the summer and fall of 2005, a committee co-chaired by Lenora Johnson, director of the Office of Education and Special Initiatives, and Dr. L. Michelle Bennett, associate director for science in the Center for Cancer Research, planned the unique 2-day workshop, "Enhancing Interactions To Reduce Cancer Health Disparities."

When the conference began on Nov. 17, 2005, more than 250 NCI employees—staff from nearly every NCI division, office, and center—convened for a day of dialogue and discussions. The next morning they joined working groups to consider seven specific areas of concern in cancer health disparities. Participants had been assigned to groups in advance and received background material to enhance the discussion and enable the breakout groups to outline steps to make an impact in each of the areas.

Since November, it has become clear that a coherent vision emerged from the workshop, according to Dr. Sanya Springfield, acting director of NCI's Center to Reduce Cancer Health Disparities. "NCI has a crucial role—to lead the nation's effort to eliminate cancer health disparities—and the institute must incorporate this central priority into every aspect of what we do."

In summarizing the event for NCI's Executive Committee, the co-chairs wrote, "This historic workshop energized the NCI community, catalyzed NCI's commitment, and raised awareness about the need to collaborate across the institute in programs and projects focused on cancer health disparities research."

NCI Deputy Director and Deputy Director for Cancer Care Delivery Systems Dr. Mark Clanton noted, "It is crucial that NCI maintain the momentum from the workshop and begin to build the capacity and an infrastructure to truly transform the cancer care landscape. NCI has a long way to go, but I have no doubt we can make this happen."

In addition to a vision, goals, and next steps to overcome cancer health disparities, plans were proposed for 1) studying genetic and biological differences, 2) narrowing the gap between research and practice, 3) expanding clinical trials, 4) identifying sociocultural and behavioral influences, 5) enhancing cancer care delivery, 6) expanding education and training for cancer care professionals and researchers, and 7) improving communications research.

To sustain the workshop's momentum, there must be an infrastructure to shepherd the workshop's plans and ideas, communicate about progress and problems, and help to integrate the elimination of cancer health disparities into all major NCI initiatives.

"We need to strengthen, integrate, and apply the science of health disparities to inform our priorities and actions," commented Dr. Robert Croyle, director of the Division of Cancer Control and Population Sciences. "By using surveillance data more systematically and developing sustainable interventions that can be adopted in underserved communities, we can close the discovery-to-delivery gap that exacerbates disparities across the cancer continuum." ◆

Featured Meetings and Events

A calendar of scientific meetings and events sponsored by the National Institutes of Health (NIH) 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.

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